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An Exploration of Burnout in Individuals with Type D Personality

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Abstract

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Dissertation Submitted in Partial Fulfillment

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Abstract

There are numerous physical and mental health implications associated with burnout and Type D personality (TDP). TDP is defined by the presence of specific levels of both negative affectivity and social inhibition. The purpose of this research was to examine the severity and prevalence of burnout in working adults with TDP in comparison to those without TDP. Social cognitive theory was the theoretical foundation for this study. Online surveys were used to gather responses to the Type D Scale-14 (DS14), the standard for measure for assessing TDP, and the Burnout Measure, Short Version (BMS) from 333 participants. Quantitative analyses included the use of *t* tests, chi square tests, correlation, and regression analysis to determine (a) if there is a disparity in the severity and prevalence of burnout in individuals with and without TDP; (b) if levels of burnout correlate with levels of TDP; and (c) whether age, gender, or both moderate the relationship between burnout and TDP. According to study results, there was a difference in the prevalence of burnout between groups, as 25.5% of the 143 participants with TDP had burnout compared to 9.3% of the 190 participants without TDP. Mean scores on the BMS were also higher, indicating a significantly greater level of burnout severity for participants with TDP. A positive correlation was found between severity of TDP and severity of burnout. Age was found to moderate the relationship between burnout severity and TDP, but did not affect the relationship between burnout prevalence and TDP. Gender did not have any impact on burnout in individuals with TDP. Neither age nor gender affected the prevalence or severity of burnout in individuals without TDP. These results can be beneficial in healthcare environments for the development of treatments and preventative measures for patients, as well as used by businesses, which have increased expenditures associated with employee burnout.

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Chapter 1: Introduction to the Study

Introduction

Commonly associated with the workplace, burnout is an extended response to chronic stressors and is characterized by three dimensions: exhaustion, cynicism, and inefficacy (Maslach, Schaufeli, & Leiter, 2001). Burnout can be detrimental to both the individual and the company, as there is a decreased ability to perform, more frequent work absences, and an increase in turnover rates (Swider & Zimmerman, 2010). Sufferers of burnout may have disruptions to mental and physical wellbeing. Physical and emotional fatigue, energy depletion, and cognitive weariness are all symptoms associated with burnout (Melamed, Shirom, Toker, Berliner, & Shapira, 2006), as are anxiety, depression, and anger (Maslach et al., 2001).

Burnout research was originally undertaken to study the effects of human service and health care occupations on individuals, due to the numerous stressors involved with those professions (Maslach et al., 2001). Although some might assume that burnout is only experienced by individuals with these stressful jobs, this is not the case. Researchers have shown that many jobs in which the workers have little control can lead to the development of burnout (Taris, Stoffelsen, Bakker, Schaufeli, & van Dierenedonck, 2005). Additional psychosocial work factors, such as workplace demands and values, contribute to burnout in different occupations (Lindblom, Linton, Fedeli, & Bryngelsson, 2006). Burnout may also be associated with characteristics of individuals, as opposed to just characteristics of the workplace (Swider & Zimmerman, 2010). One such characteristic might be personality traits or types, such as Type D personality.

Type D or *distressed* personality (TDP) was introduced in 1995, with Denollet, Sys and Brutsaert (1995) conducting extensive research on the personality construct. TDP is estimated to affect between 13 and 39% of the general population (Denollet, 1998). Individuals with this personality type are characterized by the presence of two characteristics – negative affectivity (NA) and social inhibition (SI). NA is a propensity to focus on the negative aspects of oneself, other individuals, and the world in general (Denollet et al., 1995). Individuals who exhibit SI suppress emotions and behaviors so that they avoid disappointing others (Denollet et al., 1995). Therefore, individuals with TDP can be described as having generally negative outlooks and avoiding any dialogue or behavior that conflict with the views of others.

In the current study, the relationship between burnout and TDP in working adults was examined. Additional information about the study and central concepts will be provided in later sections. Some details about both burnout and TDP are introduced in the background section of this chapter, though more extensive discussion will occur in Chapter 2. In addition, a brief summary of existing research that has preceded the current study, along with the impetus for the current research, is provided in the background. The importance and potential for social change will also be described. Information about social cognitive theory, which was the theoretical foundation for this study, is presented. The research questions and corresponding hypotheses are provided, in addition to the definitions of critical terminology. Finally, the assumptions that were made during the course of this research, as well as the scope and limitations, will be articulated.

Background

The constructs TDP and burnout were the focus of this study. There is a spectrum containing varying degrees of burnout. The measure that was used in this study categorizes

individuals as having low levels of burnout, danger signs of burnout, actually experiencing burnout, and having severe burnout (Malach-Pines, 2005). The distinction between different levels of burnout is important. Someone who has low levels of burnout may be able to alleviate some of the stress before symptoms become severe. However, an individual who is diagnosed with the most severe level of burnout is considered to be in need of immediate professional attention (Malach-Pines, 2005).

There is some evidence that individuals with TDP may experience burnout at higher rates than other individuals (Mommersteeg, Denollet, & Martens, 2012). This prevalence may be due to the negative manner in which various stimuli and stressors in the workplace are perceived by individuals with TDP. Like burnout, there is a spectrum along which TDP can be measured, with a cutoff score indicating the presence of this personality type. However, researchers have not noted whether there is a difference in the prognosis or severity of symptoms between individuals with higher or lower scores on TDP measures. Most researchers have focused solely on the presence or absence of TDP. The magnitude of TDP, as indicated by scores on the assessment, in addition to the presence or absence of TDP were addressed in the current research. The differences in scores were explored as a possible factor in prevalence and severity of burnout in the current research.

Researchers have established age and gender as moderators of health-related outcomes, which was a goal of this research. Examples include the moderation of emotional health and self-esteem in adolescents, physical activity and alcohol use in adults, and service evaluation processes (Lisha, Martens, & Leventhal, 2011; Moksnes & Espnes, 2012; Sharma, Chen, & Luk,

2012). Age and gender have been explored in relation to burnout and general personality characteristics, but not with regard to TDP, specifically.

There are conflicting reports among researchers about the ages at which individuals generally experience burnout. Some researchers indicate that burnout decreases with age (Maslach et al., 2001), whereas some suggest that burnout increases with age (Ahola et al., 2006). Others posit that there is no linear correlation between age and burnout (Lindblom et al., 2006). A goal of the current research was to determine which of these assertions regarding age may apply to individuals with TDP.

As with age, gender has been evaluated as a factor in burnout. These studies have also resulted in some inconsistencies. Some researchers have found that women experience burnout more frequently, while others indicate that men are more prone to this outcome (Maslach et al., 2001). Even when summarizing their results, some researchers indicated that they reached a conclusion regarding one sex, but by altering a single external variable, they reached a different conclusion (Rubino, Volpone, & Avery, 2013; Salmela-Aro & Tynkkynen, 2012). A goal of the current research was to find whether there was a consistent moderating influence of gender on burnout in TDP.

There is little information describing any possible association between TDP severity and burnout and whether the relationship is impacted by either age or gender. Existing research addresses these variables in conjunction with TDP, but primarily in the context of other disorders. For example, Denollet, Vaes, and Brutsaert (2000) noted that younger patients with TDP and heart ailments were more susceptible to additional cardiac events. In another study, researchers found that males and females with both Parkinson's Disease and TDP require

different strategies for improving quality of life (Dubayova et al., 2009). However, none of this information is applicable to just TDP or TDP in conjunction with burnout. This gap in the literature was partially addressed in the current research by investigating whether either of these variables were moderators of burnout in individuals with TDP.

Problem Statement

There are negative implications associated with both TDP and burnout. There are existing data on burnout and TDP, respectively, but little on the combination of the two. Previous researchers focused on perceptions of individuals with TDP and the role of exercise in TDP individuals with burnout. These studies were based on the presence or absence of TDP, burnout, or both. However, the researchers did not address the varying levels of burnout, TDP, or both that may be present in individuals, which may have been associated with moderate or more serious outcomes, such as cardiovascular problems and immune dysfunction (Denollet et al., 2003; Kudielka, Bellingrath, & Von Kanel ,2008; Kupper & Denollet, 2007; Melamed et al., 2006). These are gaps that were addressed in the current research.

In the present study, burnout among working adults was examined to determine the presence and severity of burnout in relation to TDP. Specifically, among a sample population of working adults, individuals were assessed for TDP and burnout. Comparisons of prevalence and severity of burnout between individuals with and without TDP were made, as well as with various levels of TDP. The possible moderating roles of age and gender, respectively, were also examined in the experience of burnout among TDP individuals. There is no clear information on whether certain demographic variables may make TDP individuals more susceptible to burnout.

Knowledge of these relationships would permit the identification of individuals who are at increased risk of suffering from burnout.

Burnout among individuals with TDP is of interest because of the health risks associated with this population. The strain experienced by individuals with TDP can be manifested in behavioral, physical, and psychological anomalies (Cooper, Dewe, & O'Driscoll, 2001). Heart problems are among the more significant health risks associated with TDP. Because burnout and TDP can each cause mental and physical health problems, the presence of both constructs may increase the chances of the individual for developing serious disorders. The data generated in this research would enable social change through the identification of additional complications that are more likely in individuals who are already at risk of other disorders because of their TDP. This would potentially facilitate the development of interventions and treatments that can be administered to this population.

Theoretical Framework

The theoretical framework for this work was social cognitive theory (SCT) as presented by Bandura (1986). The focus of SCT is on the cognitive facets of behavior and emphasizes the cyclical relationship between the environment, internal factors, and overt behavior. The primary components of social cognitive theory are human agency, self-efficacy, and behavior modification. Human agency refers to the general attributes of individuals that influence their functioning (Bandura, 2001). Self-efficacy refers to the concept of self an individual has, which govern his or her capacity to function (Bandura, 1982). The final component – behavior modification – refers to the ways in which an individual acts based on internal and external

stimuli. Individuals are constantly consuming, analyzing, and organizing information, which helps develop their identities.

SCT has been applied to burnout and personality, respectively. Research has demonstrated the applicability of social cognitive theory to burnout, as the competence or efficacy of an individual, as well as the cognitive processing of workplace stimuli can contribute to burnout (Meier, 1983). Burnout can be considered a confluence of the factors discussed in social cognitive theory. Environmental factors may include the nature of the profession, organization structure, and levels of social support. Personality type, such as TDP, is an internal variable that may influence the severity and prevalence of burnout. The execution of tasks and interactions required may elicit behaviors that can contribute to burnout.

As noted, researchers have applied SCT to the study of burnout. Lemyre, Hall, and Roberts (2008) discussed the roles of achievement goals individuals set for themselves as contributing factors to burnout. Using a social cognitive approach, Lemyre et al noted that setting the goals and having a single-minded focus in achieving those goals contributes to the development of burnout. The individual becomes consumed by demonstrating and maintaining a sense of self-worth. The expenditure of resources to maintain these goals contributes to burnout.

Personality has also been explored using SCT. As noted by Mischel and Shoda (1995), cognition is a contributing factor to the variability of innate characteristics that define personalities. The differences in how individuals process stimuli can be due to and, in turn affect, their respective personalities. The entire process is cyclical in nature, as each facet influences the other. Similar rationale can be used to specifically apply SCT to TDP.

TDP can also be assessed using SCT in a similar approach to the one described above. The characteristics exhibited by an individual with TDP can be considered an example of human agency, as the concept refers to analysis of observations, cognitive processing, and self-reflection. As both NA and SI impact how an individual functions and perceives him or herself (Denollet et al, 1995), self-efficacy is applicable to the negative affectivity and social inhibition components of TDP. Due to the personality characteristics exhibited by individuals with TDP, different behaviors are exhibited.

The inability of individuals with burnout to perform or to believe themselves capable of functioning has been documented (Maslach et al., 2001). Although individuals with TDP may be able to complete tasks, the individuals may not be as proficient with those tasks as desired or required. The lack of both self-confidence and performance accentuate the utility of SCT as the theoretical framework for this study.

Nature of the Study

The study was a quantitative, cross sectional, survey design, incorporating *t* tests, chi square tests, regressions and correlations. Variables that were considered were the presence of burnout, age, gender, and whether the individual was classified as TDP. Age and gender were both potential moderating variables. Burnout was considered the dependent variable. TDP was the independent variable, serving as a predictor for regression that may have impacted the prevalence and severity of burnout, as well as interacted with age and gender to impact burnout status.

Participants completed the Burnout Measure, Short Version (BMS), which is an instrument used to determine the extent to which an individual experiences burnout. Using the

Type D Scale-14 (DS14), which is the current standard assessment for TDP, working adults were measured to determine if they met the criteria for TDP and to determine the severity of their TDP status. Demographic information was also collected.

Research Questions and Hypotheses

Five research questions were explored during the course of this research. The first two questions included analysis of data obtained from all qualifying respondents. Only data obtained from individuals with TDP was used for the remaining three questions.

Research Question 1: Is there a difference in the prevalence of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP?

$H_0$1: There is no difference in the prevalence of burnout between working adults with and without TDP.

H_a1: There is a difference in the prevalence of burnout between working adults with and without TDP, such that there is higher proportion of individuals with burnout among individuals with TDP as compared with individuals without TDP.

Research Question 2: Is there a difference in the severity of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP?

$H_0$2: There is no difference in the severity of burnout for those with TDP and those without.

H_a2: There is a difference in the severity of burnout for those with TDP and those without.

Research Question 3: Does burnout, as measured by the BMS, correlate with TDP, as measured by the DS14?

$H_0$3: There is a no relationship between severity of burnout and severity of TDP.

H_a3: There is a positive relationship between severity of burnout and severity of TDP, such that higher levels of burnout correspond to higher levels of TDP.

Research Question 4: Does age moderate the relationship between TDP and burnout?

H_04: There is no moderating effect of age, such that the relationship between TDP and burnout does not differ by age.

H_a4: There is a moderating effect of age, such that the relationship between TDP and burnout differs by age.

Research Question 5: Does gender moderate the relationship between TDP and burnout?

H_05: There is no moderating effect of gender, such that the relationship between TDP and burnout does not differ by gender.

H_a5: There is a moderating effect of gender, such that the relationship between TDP and burnout differs by gender.

Terms and Definitions

Burnout: A prolonged response to chronic stress, characterized by extreme fatigue, a cynical attitude, and an inability to function optimally (Maslach et al., 2001).

Cynicism: The act of distancing oneself from interpersonal and emotional requirements of work (Maslach et al., 2001).

Exhaustion: A lack of ability to invest more emotional or physical energy in the job (Maslach et al., 2001).

Inefficacy: A feeling of failure to succeed and achieve personal accomplishments (Breso, Salanova, & Schaufeli, 2007).

Negative affectivity: A propensity for focusing on the negative aspects in oneself, others, and the world (Denollet, 1998).

Personality: Innate characteristics that influence how an individual behaves and interacts with others (Widiger, 2011). Although there may be similarities in general attributes, each individual has a distinct personality.

Social inhibition: The suppression of emotions and behaviors to avoid conflict with and disappointment by others (Denollet, 1998).

Type D personality (TDP): The personality construct exhibited by an individual who has high levels of negative affectivity and social inhibition (Denollet, 2000).

Working adult: Any individual 25 years of age or older who is employed outside the home at least 30 hours per week.

Significance of the Study

The goal of this research was to compare the prevalence and severity of burnout in individuals with TDP as compared to members of the population without TDP. The potential moderating roles of gender and age, respectively, were also examined. According to some studies, working adults with TDP have greater instances of disability leave, sick leave, and burnout (Ahola et al., 2009; Bultmann, Christensen, Burr, Lund, & Rugulies, 2008). However, there is no data on any of the demographic variables that may relate to these outcomes. As TDP and burnout have both been independently associated with numerous health problems (Denollet, 1998; Melamed et al., 2006), this research may aid in the establishment of criteria for determining the magnitude of health risks for individuals suffering from both TDP and burnout.

Assumptions, Scope, and Delimitations

Multiple assumptions were made for this study. The first assumption was that the participants provided accurate demographic information. Because the participants were recruited using online utilities, there was no way to verify the demographic information of each individual. The second assumption was that the participants provided honest responses to the questions on both the DS14 and the BMS. The answers provided on these measures were the foundation for this research. However, because the responses were subjective, the answers were presumed to be accurate. The final assumption was that participants provided truthful answers about the amount of time they worked outside the home. This was an integral component of the study, because individuals who work within the home do not necessarily encounter the same environmental stimuli as those in an external work environment. Therefore, such individuals were outside of the scope of this study.

Participants in this study were limited to individuals who worked at least 30 hours outside of the home. Definitions for full-time employment may vary, due to differences in company policies, job responsibilities, or other characteristics. For this reason, 30 hours of work outside the home was used as the minimum standard for employment in this study. Adults who were at least 25 years of age were the focus of this study, because such individuals would presumably have had more than minimal work experience. This minimum age also enabled the inclusion of individuals of various age groups, so that the potential moderating effect of age on burnout could be adequately assessed.

There were different directions in which the current research could have been taken. For example, there are numerous studies on the negative implications of TDP and burnout,

respectively. However, there is limited information about interventions for these individuals, particularly those with TDP. Altering this TDP categorization may have implications for the prevalence and severity of burnout, but the development of an intervention would require more time and resources than were available for this research. The relationship between the constructs of TDP and burnout in working adults were specifically addressed in this research.

Summary

The purpose of this chapter was to introduce readers to TDP and burnout. Both of these constructs may have significant impacts on the lives of working adults. There are both physical and psychological consequences associated with TDP and burnout. These concepts and their implications will be explored in greater detail in the following chapter. In addition, the specific problems that arise in working adults affected by these constructs will be discussed.

Chapter 2: Literature Review

Introduction

The focus of this work was on the examination of the relationship between TDP and burnout. There were limited existing data on this relationship, which underscored the need for the current study. Therefore, the strategy used to conduct the literature search required separation of the primary terms.

This chapter will contain a review of burnout and the associated symptoms. The health risks of burnout will also be presented. Following this, there will be a review of the emergence of TDP as a personality construct. Associated symptoms and potential outcomes of TDP will be discussed. Next, the link between TDP and burnout will be summarized. Finally, existing research focusing on TDP and burnout will be presented.

Literature Search Strategy

The strategy used to locate literature related to this study consisted primarily of keyword searches. The primary terms – *TDP* and *burnout* – were searched individually and together to locate relevant data. In addition, the potential moderating variables of *age* and *gender* were separately added to the search of both primary terms. The searches were conducted using resources at both North Carolina State University and Walden University to access the Summon (a division of ProQuest), EBSCO Host, psychINFO, psychARTICLES, and MEDLINE databases. Both books and journals were used, though journal articles were limited to those obtained from peer-reviewed sources. No time constraints were used during the searches in order to gather extensive information on the primary concepts, including their histories and recent developments. This choice was made due to the limited availability of previous studies

combining burnout and TDP. In addition, some of the works cited by these authors were reviewed for relevance to the current research. The information obtained will be detailed throughout the current chapter.

Stress – A Precursor of Burnout

All individuals experience stress, whether temporary or long-lasting, at some point in their lives. Stress is not necessarily negative, though. Temporary or acute stress lasts a brief time, but often prompts individuals to react to stimuli (Dallman & Hellhammer, 2011). However, chronic stress, which has extended durations, can impact the health of an individual (Dallman & Hellhammer, 2011). One possible outcome is burnout, which by definition is a prolonged response to chronic stress (Maslach et al, 2001).

Stress in the Workplace

Individuals with demanding responsibilities in the workplace frequently experience chronic stress (Richardson & Rothstein, 2008). There are a variety of factors in the occupational environment that may contribute to the development of stress. Deadlines and time constraints for the completion of tasks, procedures and policies to which a person is required to adhere, and interpersonal interaction may be some of the sources of workplace stress. Increased hours and more strenuous tasks are among other factors that may result in an increase of stress (Richardson & Rothstein, 2008). Any of the aforementioned situations may elicit stressful reactions in an individual.

There are numerous health-related problems that are associated with stress in working adults. Greater amounts of sick leave and burnout are among the consequences of higher levels of stress in this population (Ahola et al., 2009). Cardiovascular disease and hypertension are

among some of the illnesses that can result from exposure to chronic stress (Klatt, Buckworth, & Malarkey, 2009), in addition to conditions such as anxiety and depression (Cooley et al., 2009). Between 1997 and 2001, there were three times as many individuals using sick leave because of stress as compared to the previous 4 years (Richardson & Rothstein, 2008). Workplace injuries also appear to increase with stress, as noted by Atkinson (2004), who estimated that stress was a precipitating agent in 80% of these incidents. This statistic means that the more stress an individual experiences, the more likely he or she is to be injured while working.

The physical health of individuals can also be at risk because of stress. Immune system functioning and the ability to fight off infections are compromised with extended exposure to stress over time (Amadori, Stefanon, Sgorlon, & Farinacci, 2009). Such dysfunction of the immune system has been associated with the duration and severity of infections (Godbout & Glaser, 2006). That is, as the level of stress increases, an individual experiences longer bouts of illness with worse symptoms.

Burnout

First introduced by Freudenberger (1975), burnout is a construct used to describe the responses of individuals to chronic stressors. Burnout is a phenomenon characterized by a lack of interest and exhaustion, typically in association with the workplace (Maslach et al., 2001). There is a general depletion of the resources that would enable an individual to adequately function. Fatigue, lack of energy, and mental strain are symptoms associated with burnout (Melamed et al., 2006). Individuals diagnosed with burnout have prolonged reactions to persistent interpersonal and emotional workplace stressors (Maslach et al., 2001). These reactions result in reduced abilities to thrive in the workplace. People suffering from burnout are less committed to their job

responsibilities, have lower levels of productivity and effectiveness, and are more frequently absent from work (Golembiewski, Hilles, & Daly, 1987).

Burnout is most commonly applied to workplace settings and is related to a number of workplace factors. First, too much work to be performed in a limited amount of time leads to overload, which has been determined to be a contributor to burnout (Maslach et al., 2001). This finding has been consistent across research, regardless of the type of occupation being investigated. Another factor is the structure of the organization and the accompanying policies, which may be referred to as "office politics." These organizational characteristics often mandate that employees dedicate more time, effort, and skills to their positions, while they receive fewer opportunities for advancement and less job security (Maslach et al., 2001). The uneven exchange of work and remuneration has been noted as a contributor to burnout (Angerer, 2003).

Concise statistics documenting the prevalence of burnout are difficult to present. Most existing research regarding burnout centers on specific populations, whether those are based on nationalities, occupations, academics, gender, or other characteristics. For example, studies of various samples from multiple countries yielded a wide range of results. In a review of different samples of North American employees, Golembiewski, Boudreau, Munzenrider, & Luo, (1996) indicated that between 1% and 25% of employees experience burnout. In a study of samples taken from 12 countries that were primarily Asian or Eastern European, Golembiewski et al., provided a range of 12 to 69% of employees suffering from burnout. In 2005, more than 10% of individuals in Denmark suffered from burnout (Kristensen, Borritz, Villadsen, & Christensen, 2005). These percentages indicate the wide variability in burnout statistics, depending on the population being studied.

Nationality is not the only criterion that leads to variability in burnout statistics. Practicing physicians have burnout rates that range from 25 to 60% (Timoshin, 2012). Parents who had children who were chronically ill experienced burnout 36% of the time, as compared with 20% for parents with healthy children (Lindstrom, Aman, & Norberg, 2010). The plethora of population-specific statistics on burnout impedes the ability of a researcher to provide a finite value that can be applied generally. That is, there is no single percentage that can be assigned to indicate the total number of people with burnout.

There were multiple phases of burnout research that led to the current levels of understanding of this disorder. This construct was first introduced in literature during the 1970s. Freudenberger (1975) and Maslach (1976) explored the demands on individuals in different work environments. Referred to as the pioneering phase of research into burnout, this information relied on qualitative measures, including interviews, observations, and case studies (Maslach et al., 2001). Following the pioneering phase of burnout research came the empirical phase. These researchers used quantitative approaches, including survey and questionnaires (Maslach et al., 2001). Accurate assessment of burnout was also emphasized during the empirical phase. One of the measures that was developed for the assessment of burnout will be summarized in Chapter 3.

Dimensions of Burnout

Early researchers introduced the three dimensions that continue to define burnout: exhaustion, cynicism, and inefficacy. Researchers have proposed models that indicate these dimensions occur in phases (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). Exhaustion occurs first. As levels of exhaustion increase over time, individuals become more cynical, which can

actually further increase levels of exhaustion (Taris et al., 2005). As cynicism increases, so does inefficacy.

Exhaustion

Exhaustion is considered the primary characteristic of burnout and is generally the most recognizable manifestation (Maslach et al., 2001). The term exhaustion may be used as a description of being tired. However, when associated with burnout, exhaustion has a more detailed description. In the context of burnout, exhaustion refers to a lack of ability to invest further in the job due to having nothing left to give (Maslach et al., 2001). These individuals generally have a lack of mental energy as well as physical energy, memory impairments, unstable emotions, and a manifestation of physical ailments (Hallsten, Voss, Stark, Josephson, & Vingard, 2011).

As previously noted, exhaustion in burnout is both physical and mental. Exhausted individuals have difficulty sleeping and poor sleep quality (Grossi, Perski, Evengard, Blomkvist, & Orth-Gomer, 2003). These individuals are more fatigued and have increased episodes of sleepiness during daytime hours. In addition, there are feelings of being overextended, as well as having depleted resources (Rubino et al., 2013).

Cynicism

While the other two components of burnout essentially reflect the view an individual has of herself or himself, cynicism is considered to be the interpersonal facet of burnout (Breso et al., 2007). Originally termed depersonalization, cynicism occurs when an individual attempts to distance himself or herself from the interpersonal interaction and emotional demands of the work

(Maslach et al., 2001). This is viewed as a coping mechanism designed to better manage the demands associated with the work.

Inefficacy

Inefficacy is the component of burnout in which individuals evaluate themselves and their accomplishments (Breso et al., 2007). An individual with high inefficacy feels as though the work performance lacks adequate effectiveness. Unlike exhaustion and cynicism, this dimension appears to partially arise from a lack of adequate external resources (Maslach et al., 2001). The individual no longer feels effective due to exhaustion, cynicism, and inadequate resources to complete duties.

Demographics of Burnout

Burnout can affect anyone at any time. However, according to some studies, there are members of certain demographic groups that may be more susceptible. There is some variability in data describing the ages at which individuals are most likely to experience burnout. Some researchers suggest that in the general population, burnout appears to impact younger individuals more frequently than individuals in their thirties and forties (Maslach et al., 2001). However, older individuals who have worked in their fields for an extended time may also have a high susceptibility to burnout (Stanetic & Tesanovic, 2013). Some information of whether one or both of these conclusions could be applied to individuals with TDP was provided in the current study.

Data are also inconsistent regarding whether gender is of significance in the development of burnout. Some researchers posit that women are more likely to develop burnout, while others indicate men have higher frequencies (Rubino et al., 2013). One reason for these contradictory findings may be the differences in prevalence of different components of burnout. Women have

been noted as experiencing exhaustion more frequently (Rubino et al., 2013), whereas, men have consistently rated higher in cynicism (Maslach et al., 2001). A goal of the current study was to determine if there was an impact of gender on burnout in individuals with TDP.

Other demographic variables have also been linked to the development of burnout. Marital status and education levels also appear to have roles in the development of burnout. Unmarried individuals – whether never married or divorced – are more likely to experience burnout than married individuals (Maslach et al., 2001). In addition, employees with higher levels of education also appear more susceptible to burnout than individuals with less education (Maslach et al., 2001). Exploration of these variables was beyond the scope of the current study.

Physical Health Implications of Burnout

Mental symptoms are often emphasized when discussing burnout Maslach et al., 2001). However, burnout can cause multiple adverse effects on physical wellbeing, as well, further supporting the negative effects on quality of life. The effects of burnout can result in the compromised immune system of an individual (Kudielka et al., 2008). Burnout is also linked to an increased risk of developing cardiovascular disease and metabolic disorders (Melamed et al., 2006).

One way in which immune functioning is compromised in individuals with burnout is due to an alteration in cytokine levels. Cytokines are proteins that aid in the reaction to foreign agents entering the body (Jost et al., 2011). There are two general categories of cytokines: 1) proinflammatory – cytokines that worsen diseases and 2) anti-inflammatory – cytokines that reduce inflammation and initiate healing (Dinarello, 2000). Burnout has been associated with higher levels of circulating proinflammatory cytokines and lower circulating levels of anti-

inflammatory cytokines (Kudielka et al., 2008). Thus, individuals are more frequently afflicted with illnesses due to their reduced immune functioning.

Metabolic syndrome has also been linked to burnout. Metabolic syndrome consists of several co-occurring components: obesity, high levels of bad cholesterol along with low levels of good cholesterol, elevated glucose levels, and high blood pressure (Melamed et al., 2006). Individuals with metabolic syndrome are at greater risk for the development of cardiovascular disease, diabetes, and even some forms of cancer (Melamed et al., 2006).

As previously mentioned, the HPA axis is important in the regulation of homeostasis and responses to stress (Ben-Zvi et al., 2009). Like TDP, dysregulation of the HPA axis can result from burnout (Melamed et al., 2006). Disruption of this system can also result in complications with immune responses, leading to increased bouts with illness. Sleep patterns and responses to insulin have also been compromised with disruptions to HPA axis function due to burnout (Tsai et al., 2013).

Personality

Individuals are often categorized by their personalities, which are distinctly different from one person to the next. Personality can be defined as the innate characteristics or traits that influence how an individual behaves and interacts with others (Widiger, 2011). These traits influence how individuals think and feel. There is also an impact of personality traits on reactions to environmental stimuli and how a person is perceived by others.

Understanding Personality

In 1937, Gordon Allport listed fifty different definitions for the term personality. This was done in an effort to formulate parameters upon which personality could be based.

An accepted definition of personality is the totality of behavioral and emotional characteristics present in an individual.

The foundations and development of personality can be explained by various paradigms. Classic paradigms include psychoanalytic, trait, behaviorist, and humanistic approaches (Funder, 2001). More recent approaches include the social-cognitive, biological, and evolutionary views of personality (Funder, 2001).

Throughout history, many researchers have investigated personality. There is general agreement that personality is a combination of temperament and character. Temperament is the inborn or genetic predisposition to an emotional state, whereas character is the evolving element of personality (Steen, 1996). Some researchers have described a finite number of general personality characteristics that are presumably applicable to all individuals. Models describing three, five, seven, and nine factors of personality have been described. There is often adherence to the five factor model as presented by Costa and McCrae (1992). Two of these five factors – neuroticism and introversion – serve as the foundations for negative affectivity and social inhibition, the components of TDP.

Neuroticism

Neuroticism is the extent to which an individual views the world as problematic and threatening (Watson, Clark, & Harkness, 1994). According to the personality theory posited by Eysenck (1967), individuals with high levels of neuroticism are more susceptible to stress, with resulting agitation and distress. Numerous physical and personality problems have been linked to high levels of neuroticism. Substance use and abuse, mood and anxiety disorders, conduct

disorders, somatoform disorders, and schizophrenia have all been linked to individuals with elevated neuroticism (Watson, 2001).

Neuroticism has been found to contribute significantly to the presence of more negativity in the mood and outlook of an individual (Gomez, Gomez, & Cooper, 2002). This negativity impacts most facets of life. For example, people with high levels of neuroticism have significant difficulty sustaining healthy relationships. Relationship instability and increased divorce risks have been noted in these individuals (Karney & Bradbury, 1995). They are extremely critical of themselves and very sensitive to criticism by others (Gomez et al., 2002). In addition, individuals high in neuroticism are also more argumentative than individuals low in these traits (Cote & Moskowitz, 1998). These findings are similar to information discussed later in the review of negative affectivity. Neuroticism and negative affectivity have a positive correlation; as the level of neuroticism increases, so does the level of negative affectivity (De Fruyt & Denollet, 2002). This seems logical when considering the similarities of the characteristics indicative of each trait.

Introversion

Some, though not necessarily all individuals who are introverts have historically had a tendency to withdraw from social settings and are reluctant to express themselves (Gray, 1970; Kagan, 1989). In addition, introverted individuals are presumed to avoid elevated levels of arousal (Eysenck, 1967). Such traits can lead to the use of descriptive terms such as shy or antisocial. These people attempt to establish their autonomy, unlike extraverts who thrive in the company of others (Hills & Argyle, 2001).

Introversion is positively correlated with social inhibition (Robinson, Meier, Wilkowski, & Ode, 2007). Individuals high in introversion are also high in social inhibition. Introverts are

more likely to be reserved and refrain from freely expressing themselves. According to some evidence, there are levels of introversion. Researchers have noted that some introverts are in constant states of fear and anxiety regarding interactions, whereas other introverts are not (Robinson et al., 2007). However, there does not appear to be any dispute that introverts are more socially inhibited than extraverts.

Precursors to TDP

Type A, which was the precursor for TDP, and Type B personalities are constructs originally described in 1959 by Friedman and Rosenman. These physicians were examining the link between chronic emotional duress and heart disease, dividing individuals into three groups based on their behavioral patterns. Some of the variables measured in their work were anger, irritation, and impatience.

Friedman and Rosenman (1959) posited that individuals who were more driven, competitive, aggressive and impatient were at greater risk for coronary disease. These individuals were categorized as Type A, reflecting the group label of individuals exhibiting the aforementioned characteristics. Completion of activities at an accelerated pace, in addition to rapid and emphatic vocals, are characteristics of this personality type (Johnsen, Espnes, & Gillard, 1998). Type B individuals were identified as those without the characteristics exhibited in Type A personality (Friedman & Rosenman, 1959).

Individuals exhibiting Type A behavior were believed to have multiple physical and psychological problems. Among the presumed complications was coronary heart disease (Mittleman et al., 1995). However, these findings proved to be controversial, as the results of these studies could not be replicated (Julkunen, Idanpaan-Heikkila, & Saarinen, 1993; Ragland

& Brand, 1988). Because of the uncertainty regarding the health implications of a Type A personality, some of these results were discounted. Such ambiguities may have provided the impetus to investigate more sound correlations between health and personality, some of which have become apparent in the exploration of TDP. Research of TDP firmly established the links between health risks and personality.

Type D Personality

TDP was first introduced in 1995 by researchers investigating the role of personality in mortality rates after episodes of myocardial infarction (Denollet et al., 1995). They found that there was a significantly higher risk of death in patients exhibiting a distressed personality type. Of the 105 patients studied, 39% of TDP patients died, as compared with 5% of patients with other personality types (Denollet et al., 1995). Thus, researchers concluded that TDP could be used to predict morbidity and mortality rates in heart patients. According to additional studies, identifying TDP can aid in the assessment of health risks, particularly cardiovascular disease, in individuals without histories of heart problems (Martin et al., 2011).

As noted, TDP is defined by the presence of negative affectivity and social inhibition. Both traits must be present in high levels before an individual is classified as TDP. Below is a more detailed description of negative affectivity and social inhibition. Understanding these terms can provide improved insight into the characteristics of TDP.

Negative Affectivity

Negative affectivity is noted as a dimension of dissatisfaction and distress (Watson & Clark, 1992). This term describes the poor outlook individual have on the world. This concept is the successor of neuroticism as described by Hans Eysenck and refined by Warren Norman

(Watson & Clark, 1992). Individuals who measure high in neuroticism, negative affectivity, or both are vulnerable to psychological distress (McLennan, Buchanan, & Bates, 1994). High levels of negative affectivity prevent individuals from being able to effectively cope with stressful events in their lives (Denollet, 1991).

The term negative affectivity was coined by Watson and Clark (1984) to describe how individuals experience certain events. Individuals with low levels of negative affectivity are generally calmer and more relaxed in demeanor (Watson & Tellegen, 1985). However, individuals with high levels of negative affectivity exhibit characteristics at the opposite end of the spectrum. Watson and Clark (1984) posited that there are defining characteristics to the negative moods of these individuals. These individuals have propensities to be extremely nervous and tense. In addition, individuals with high negative affectivity tend to worry excessively. The presence of these emotions leads to the individuals displaying high anxiety, one of the symptoms associated with TDP.

Individuals with high negative affectivity have poor moods and pessimistic views regarding life and themselves. There are other adverse emotions associated with negative affectivity, as well. These individuals frequently display such emotions as anger and scorn (Watson & Clark, 1984). Negative affectivity also causes individuals to experience dissatisfaction with themselves, accompanied by some sadness and feelings of rejection. They typically have very low self-esteem (Watson & Pennebaker, 1989). These various emotional states have been found to occur together in all individuals with high levels of negative affectivity (Watson & Clark, 1992). This co-occurrence indicates that an individual with negative affectivity

who is experiencing sadness will also have feelings of anger, fear, and other associated negative emotions.

Social Inhibition

Emotions are part of how individuals assign meaning to various stimuli. The expression of emotions enables an individual to process those stimuli and convey their reactions to others. Social inhibition is exhibited when an individual actively represses emotions and behaviors to reduce the possibility of disapproval by others (Denollet, 2005). Individuals who exhibit high levels of social inhibition have a greater propensity for insecurity and tension during social interactions (Gest, 1997).

There can be numerous factors that lead to the development of social inhibition. In children, a common trigger is a lack of familiarity with other individuals (Denollet, 2013). When in the presence of strangers, children are less likely to express their true emotions. Instead, they are more reserved and seek the comfort of individuals with whom they are more familiar. Such inhibition can impact the social cognition and personality development of a child, increasing susceptibility to stress-related problems (Rapee, Schniering, & Hudson, 2009). As people age, the triggers are more related to threats of negative social evaluations (Denollet, 2013).

People who are socially inhibited during childhood often experience lingering effects in various facets of their adult lives. Researchers have indicated that there are some common components in adults who experienced early social inhibition. These individuals have less active social lives and are less likely to live far from their immediate family (Gest, 1997). In addition, both males and females who experience this behavioral inhibition are more prone to negative emotionality and distress, with men exhibiting these traits more frequently (Gest, 1997).

Other Characteristics of TDP

Anger. As noted, anger is a symptom of TDP. There is no single specific cause universal to all individuals that results in angry responses. Causes can include genetic factors, hormonal changes, and environmental stimuli (Wilkowski & Robinson, 2010).

Individuals with propensities for anger generally perceive stimuli negatively and possess an angry affect (Suls & Bunde, 2005). Although identified as a single emotion, there are different types of anger. State anger is characterized by subjective emotions ranging from mild irritation to intense rage, whereas trait anger is the overall intensity, frequency and duration of state anger occurrences (Spielberger, 1988). TDP individuals have a tendency to be high in trait anger, which has health implications. These individuals have been found to possess four times more suppressed anger as individuals without TDP (Denollet, Gidron, Vrints, & Conraads, 2010).

Anxiety. The primary characteristic of anxiety is a feeling of uncomfortable anticipation or sense of dread (McGrandles & McCaig, 2010). These feelings arise in response to both danger and uncertainty (Miller, MacDonald, & Perch, 2011). Anxiety occurs due to the abnormal processing of stimuli that evoke emotions (Murphy, 2010). These individuals generally perceive situations as threatening, known as processing bias, and are more cognizant of stimuli that are related to threats (Murphy, 2010). Numerous factors can increase the risk an individual has for developing anxiety. There are no age or sex constraints for anxiety, although females are more apt to experience anxiety than males (Dickstein, 2000).

Researchers have shown a significant link between anxiety and TDP. Kupper and Denollet (2013) focused on testing individuals with TDP, who had not been diagnosed with some form of anxiety disorder. The results of the study were that anxiety is 6 to 8 times more

common in this population than individuals without TDP. In addition, social inhibition appears to be highly correlated with all facets of anxiety, whereas negative affectivity is primarily associated with the individual feeling a complete lack of control in situations (Kupper & Denollet, 2013).

Predisposition to Development of TDP

Prevalence. As previously noted, researchers suggest that as much as 39% of all people can be classified as having TDP. There is a disparity in data regarding the frequency of TDP among males and females. Numerous studies in which this construct was examined have involved samples that were predominantly male (Denollet, 1998; Denollet, 2005). This has resulted in a clearer understanding of the implications of TDP among males than females.

Heritability. Heritability describes how much of specific characteristics can be attributed to genetics. TDP has a 52% heritability (Kupper, Denollet, de Geus, Boomsma, & Willemsen, 2007), meaning more than half of the traits associated with this personality type may be inherited from the parents. The individual components that define TDP are also heritable, independent of each other. Kupper et al. (2007) noted the heritability of social inhibition as 50%, while negative affectivity was found to be 46% heritable. However, there are still numerous characteristics that are not attributable to the genetic composition of an individual.

Attachment. Attachment theory is a concept developed by John Bowlby and later refined by Mary Ainsworth to explain social development and personality (Blatt & Levy, 2003). Bowlby (1969) posited that attachment was based on protection from possible harm and regulation of negative affect in the aftermath of harmful or threatening occurrences. There is the potential for detrimental consequences if attachment is either disrupted or insecure. According to Bowlby

(1977) various issues, including personality disorders and emotional distress, can be due to disturbances in attachment. For this reason, attachment theory appears to be an important component in explaining the development of TDP.

Researchers have shown that neuroticism, one of the foundations for the negative affectivity hallmark of TDP, is heavily influenced by unhealthy parental attachment. Individuals with both overprotective parents and those who experienced a lack of caring have been shown to exhibit high levels of neuroticism during their adult lives (Reti et al., 2002). Assessment of adults with TDP yielded individuals who recalled numerous deficiencies in their childhood relationships with their parents (Van den Broek, Smolderen, Pedersen, & Denollet, 2010).

TDP in the Workplace

The personality of an individual was found to aid in predicting both the performance and productivity of workers (Barrick & Mount, 1991; Hough & Oswald, 2000). In addition, models generated from various studies show that work-related stress is due to a combination of how the individuals perceive events in the workplace and their respective dispositions (Fortunato & Harsh, 2006). Stressors experienced by working individuals include deadlines for task completion, company policies, and interpersonal interaction. Ambiguous job responsibilities, workload, and conflict between employees are among the workplace stressors upon which researchers commonly focus (Fortunato & Harsh, 2006).

Individuals with TDP potentially have several negative outcomes in the workplace. Possible outcomes include increased absences due to physical illness, disability leave, and mental health disorders, such as anxiety or depression (Mommersteeg et al., 2012). Burnout, which was the focus of this work, is another possible outcome of TDP in the workplace.

Of note is the fact that the components of TDP can also result in adverse workplace situations. Negative affectivity is a personality variable that is commonly considered when examining stress in the workplace. According to one perspective, individuals who are high in negative affectivity have a tendency to inflate the less desirable aspects of their environments (Fortunato, 2004). These individuals frequently report aversive conditions and interpersonal slights, even when none are present (Fortunato, 2004). Individuals with high levels of social inhibition in the workplace have a lack of assertiveness, particularly in the workplace (Grande, Romppel, Michal, & Brahler, 2013). They do not routinely voice their opinions or object to the course of action being taken. Instead, they suppress their emotions due to the fear of being ostracized or disciplined.

Burnout and TDP

Burnout is not just a response to stimuli in the workplace environment; individual characteristics, such as personality type, contribute to burnout development (Maslach et al., 2001). Individuals with TDP may be more susceptible to the development of burnout. The perceptions an individual with TDP has about the environment can contribute to the development of exhaustion, cynicism and inefficacy (Polman, Borkoles, & Nicholls, 2010).

Existing Research

The search for existing research was performed by combining the two primary terms, *burnout* and *TDP*. Although there were multiple studies combining burnout and personality in general, there was a paucity of research that specifically addresses TDP and burnout. Only four previous studies could be located combining TDP and burnout, with working adults used as the

sample in just two. The limited availability of information is a strong rationale for the necessity of the current work. Summaries of studies found are presented below.

Oginska-Bulik (2006) investigated the role of TDP in the perception of stress at work and the development of subsequent adverse outcomes. The study group consisted of 79 healthcare nurses and psychiatrists employed at a mental hospital, with 22 classified as having TDP. The mean age of participants was 39.71 years. The DS14 was used to measure TDP status, while the Maslach Burnout Inventory was used to assess burnout. The results of the study were that participants with TDP were more likely to perceive their workplaces as stressful. Scores on the measures of exhaustion, cynicism, and inefficacy were also higher among TDP individuals. Efficacy was described as personal accomplishment in this study. Therefore, a lower score in personal accomplishment was equivalent to a higher level of inefficacy. Here, too, individuals with TDP scored worse than those without TDP.

Polman and colleagues (2010) studied TDP and burnout among undergraduate college students. One of their research goals was to determine if TDP was a moderator between perceptions of stress and burnout symptoms. Participants consisted of 334 male and female students, ranging in age from 18 to 41, who were in their first year of college. Polman et al., used the Oldenburg Burnout Inventory to measure symptoms of burnout and the DS14 to assess TDP status. For the purpose of this work, cynicism was termed as disengagement. Of the participants, 83 (24.9%) were classified as having TDP. Researchers found that TDP was a moderator in the relationship between burnout symptoms and perceived stress.

Mommersteeg and colleagues (2012) explored TDP and depression in relation to burnout and other work-related health outcomes. They wanted to establish the role of personality in the

perception of stress in the work environment. There were 1,172 participants from a Dutch population. Participants had a median age of 41.6 years and had to meet employment standards defined as working more than 12 hours per week. Females comprised the majority of the sample, with 679. The DS-14 was used to assess TDP, while burnout was measured using a Dutch validated version of the Maslach Burnout Inventory. Individuals with TDP met burnout criteria 26.5% of the time as compared with 8.4% among non-TDP participants. TDP was only present in 12.8% of participants, which is less than the overall Dutch and global estimates of 13-39%. Because of this disparity, the results may not be easily generalized across populations.

Armon (2014) investigated the role of exercise as a moderator between TDP and burnout. There were 455 participants in this study, mostly males, who were employees completing routine health examinations. The median age was 42.5 years and gender was controlled. The Shirom-Melamed burnout measure was used to assess burnout and the DS14 was used to establish TDP. This research indicated that TDP was positively correlated with burnout, while documenting exercise as a moderating factor.

The previous studies establish differences in perception of stress and associated coping in individuals with TDP as compared to those without TDP. There is also a relationship between burnout and TDP, though the extent of this relationship requires more documentation. For example, there is no indication of the severity of burnout in these populations, only that burnout does occur. The researchers did not explore the varying levels of TDP to determine if there were differences in outcomes based on the severity as indicated by DS14 scores. Finally, there is no detailed exploration of the potential roles of age and gender in the previous research. A goal of the current study was to provide some of the missing data. In addition, different populations

collectively explored in the existing studies, but, individually, were focused on specific groups. Adults working in any field were considered for the current study, without concentrating on a specific group that may be more prone to stress.

Theoretical Foundation

Social cognitive theory (SCT) as posited by Bandura (1986) will serve as the theoretical foundation for this study. Cognitive facets, both internal and external, that influence the behavior of an individual are the central concepts of SCT. As noted, both TDP and burnout are significantly influenced by the perception an individual has of environmental stimuli. Therefore, a theory that is founded upon cognition was chosen for the current study.

There are three primary components of SCT: human agency, self-efficacy, and behavior modification (Bandura, 1986). Each of these components can be applied to either TDP or burnout, individually. Because of this, one can infer that these components are also applicable to any study that incorporates both TDP and burnout.

Previous Applications of Social Cognitive Theory

SCT has been applied to burnout and personality, respectively. Lemyre et al. (2008) discussed the roles of achievement goals individuals set for themselves as contributing factors to burnout. Using a social cognitive approach, these researchers noted that setting the goals and having a single-minded focus in achieving those goals contributes to the development of burnout. The individual becomes consumed by demonstrating and maintaining a sense of self-worth. The expenditure of resources to maintain these goals contribute to burnout.

Researchers have also presented theories for applying SCT to personality. Two sets of work can be combined to describe this approach. Bandura (2001) described personality as a self-

system, in which the individual interacts with the environment and enacts control by either self-punishment or self-reward. The perception of the environment impacts how the individual perceives himself and whether he meets self-determined standards. A cognitive-affective personality system (CAPS) was posited to describe an integration of variables in cognitive social learning and the response an individual has to these stimuli (Mischel & Shoda, 1995). The CAPS system can be characterized as an "if…then" model; that is, if this stimulus is perceived, then that response will be present (Funder, 2001). These theories are indicative of how people have individualized responses to stimuli and situations, further supporting the use of SCT in the current work.

Application of Social Cognitive Theory to Current Research

The relationship between the individual and the environment is explored in social cognitive theory. The severity and prevalence of burnout in individuals with TDP are examples of this type of relationship. Individuals in the same environment may not have the same outcome, just as individuals with similar personality characteristics may not perceive their environments in the same way. The research questions for the current study addressed the severity and prevalence of burnout in individuals with and without TDP, inquiries about the severity of burnout in relation to the severity of TDP, and incorporated age and gender, respectively, as potential moderators. These questions aided in establishing which factors of the individual, the environment, or both may contribute to the severity and prevalence of burnout.

Summary

The purpose of this chapter was to provide extensive detail into the backgrounds of both TDP and burnout. The constructs can be present in individuals exclusively or together. However,

a thorough investigation of the relationship between the two has not been presented in existing research, which was one purpose of the current study. The lack of data combining TDP and burnout was more apparent when attempting to add age and gender to the searches. The absence of substantial data underscored the need for the research performed in this work. The results have increased significance due to all of the potential health implications each of these constructs may have on an affected individual. The presence of both constructs may increase the deleterious effects. The next chapter will outline the research that was conducted to investigate the relationship between TDP and burnout.

Chapter 3: Research Method

Introduction

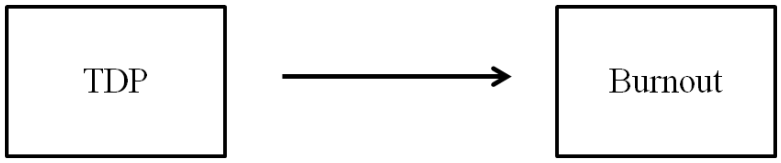
The prevalence and severity of burnout in working adults with TDP were examined in the current study. Detailed information of methods used to assess the connection between burnout and TDP will be provided in this chapter. First, the research design and rationale will be presented. This section will include models to illustrate the hypotheses upon which this research was based. Next, the methodology will be discussed, including information about the sample size and selection, data collection, and instrumentation. Finally, potential threats to validity will be reviewed and ethical considerations will be presented.

Research Design and Rationale

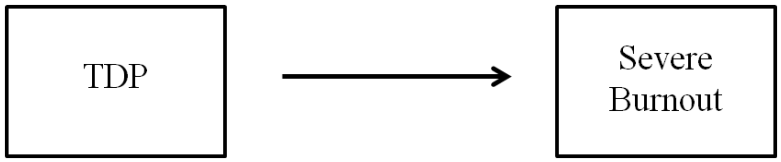
Burnout can be experienced by individuals who have stress in a work environment. However, the impact of TDP in these same situations is unclear. Personality has been shown to be both a coping mechanism and a resource for dealing with workplace stress (Ghorpade, Lackcritz, & Singh, 2007). Such utility of personality is primarily linked to traits that are considered desirable in personality, including agreeableness, extroversion, and openness (Ghorpade et al., 2007). These characteristics have a negative relationship with the exhaustion and cynicism components of burnout (Ghorpade et al., 2007) and are not typically associated with TDP. The current research was used to assess the relationship between burnout and TDP.

For this research, burnout was the outcome variable and TDP was the predictor variable. Age and gender were examined as potential moderating variables. Using this arrangement, the study was founded upon five hypotheses: (a) there is a difference in the prevalence of burnout between working adults with and without TDP; (b) there is a difference in the severity of burnout

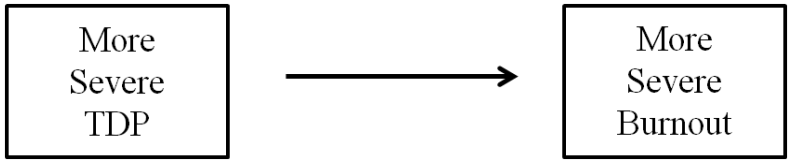
between working adults with and without TDP; (c) there is a positive relationship between the severity of burnout and the severity of TDP, with higher levels of burnout corresponding to greater severity of TDP: (d) age moderates the relationship between burnout and TDP; and (e) gender moderates the relationship between burnout and TDP. The models in Figure 1 illustrate these hypotheses:



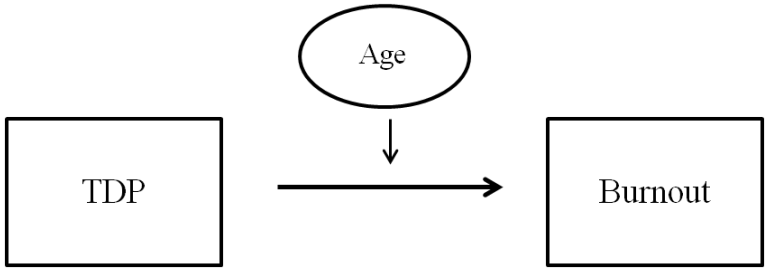
a. Direct effect model: TDP can lead to burnout.



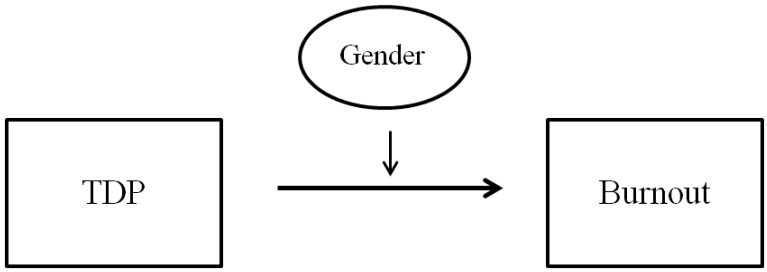
b. A direct effect model, in which burnout is more severe in individuals with TDP.



c. A direct effect model, in which more severe TDP leads to more severe burnout.



d. Age as a moderator between TDP and burnout.



e. Gender as a moderator between TDP and burnout.

Figure 1. Models of hypotheses

A quantitative approach was used to examine the correlations between burnout and TDP. Data were collected using an online survey and evaluated using *t* tests, chi square tests, regressions, and correlations to determine if there was a significant difference between the occurrences of burnout in individuals with and without TDP, as well as the potential moderating roles of age and gender. The approach to gathering participants was cross-sectional in order to gather individuals with and without TDP who may be suffering from burnout. This method also enabled the participation of individuals from varying occupations and different demographic groups, the latter of which was critical to this study.

Methodology

Population, Sampling, and Participation

The target population for this study was individuals who work at least 30 hours per week outside of the home. This parameter was used to ensure that study participants were exposed to the types of external stimuli in the workplace that have been shown to lead to burnout. Although there is the potential for individuals who work in the home to experience burnout, such occurrences did not fall within the scope of this work. In addition, participants were a minimum of 25 years of age. Such individuals presumably had more work experience and, thus, were more

likely to have experienced conditions that lead to burnout. Individuals who did not meet both the age and employment parameters were excluded from the study.

A simple sample of convenience was used for this study, in which all respondents completing the surveys were included. Initially, a statistical calculator was used to determine a minimum required sample size. This number was obtained by using an online multiple regression calculator (danielsoper.com). The desired statistical power level used was 0.8. This value was chosen because, according to Cohen (1992), this is an accepted value for general use during psychological research. The effect size used 0.15 to indicate a small to medium impact of TDP on burnout. Cohen indicated that small (0.10), medium (0.30), and large (0.50) effect sizes can be generalized across studies. Three predictors – TDP, age, and gender – were used for this calculation. The probability for committing a Type I error (α), which is the erroneous rejection of the null hypothesis, was entered as 0.05.

Using these values, the required sample size was determined to be 76 individuals. However, this value was rejected due to consideration of previously documented statistics regarding the general prevalence of TDP and burnout. TDP is estimated to affect as much as 39% of the population (Denollet, 1998). A sample of 76 individuals would yield, at most, 29 participants with TDP. Although there is variability in the statistics of burnout prevalence, a researcher could use an intermediate value of 25% of individuals suffering from burnout. This percentage would yield approximately 19 participants who may have burnout in the sample size. Adhering to these values would reduce the ability of the researcher to adequately test the hypotheses presented. Therefore, a minimum sample size of 300 was designated for this study.

That figure permitted greater opportunity for gathering individuals with TDP who were also experiencing burnout.

Data Collection

Participants from across the United States were recruited using the SurveyMonkey Audience resource. The SurveyMonkey Audience consists of individuals recruited by the site to participate in a variety of surveys. Two recruitment methods are employed to maintain membership within this audience. The first method provides a small charitable donation made to a charity (selected by the individual) on his or her behalf and a sweepstakes entry for each completed response. The second method is use of a Global Partner Network comprised of panels of individuals who have agreed to complete surveys in exchange for sweepstakes entries and point redeemable for consumer goods. Members from the first recruitment method were used for the current study. The small amount of the charitable donation – currently $0.50 – has been previously established as an acceptable incentive in the institutional review board (IRB) review process. This broad expanse of recruitment was an important component of the current research, in order to ensure variability within the participant population.

A statement of informed consent was included at the beginning of the survey. The nature of the study was explained. Individuals were informed that their participation was voluntary and they were free to exit the study at any time. Demographic information, including age and sex, was requested. Although the field in which the individual is employed was not a focus of the current study, this information was requested, in addition to the number of hours per week the participant works.

Participants responded to the 24 questions that comprise the two measures for assessing TDP and burnout, respectively. At the conclusion of the survey, participants were reminded that no personal identifiable information was collected. They were asked to confirm that they responded to all items. There was no need for follow-up with any participants.

Instrumentation

Two instruments were used to conduct this study. The DS14 was used to determine if participants met the criteria for TDP. Permission was obtained from the author and a license for use of the DS14 was obtained from the publisher of the article in which the measure was included. The BMS was used to discern if the participants are suffering from burnout. An open statement of permission for use in research and educational activities is included with the BMS.

DS14. The DS14 is a standard measure for identifying the presence of TDP by assessing the presence of both negative affectivity and social inhibition (Denollet, 2005). This measure contains 14 statements, half of which address negative affectivity, while the other seven address social inhibition. “I am often irritated” and “I am a closed kind of person” are among the statements used on the DS14. (Full measure in Appendix D) A 5-point Likert scale is used for respondents to rate their personality characteristics. Assigning 0 to an item indicates that statement is false and does not apply to that individual, whereas a 4 indicates the statement is completely applicable. Items 2, 4, 5, 7, 9, 12, and 13 are on the negative affectivity subscale, with the remaining items comprising the social inhibition subscale (Denollet, 2005).

The DS14 is scored by adding the values assigned to each statement in the sections for negative affectivity and social inhibition, respectively. The scores on the negative affectivity subscale are a direct reflection of the values assigned by the respondents. However, on the social

inhibition subscale, the values for Items 1 and 3 are reversed. That is, if the respondent assigned a zero to either of these items, a 4 will be the score instead of 0. An assigned value of 4 on either of these items would correspond to a score of 0.

The minimum cutoff values for the DS14 were determined by Denollet (2000), based on a combination of his research and a previously-developed repression and anxiety model. According to that model, individuals were identified as "defensive high-anxious" if they scored above the median on two subscales (Weinberger, Schwartz, & Davidson, 1979). Incorporating these results with his own research into negative affectivity and social inhibition, Denollet determined that a minimum of 10 must be scored on each section of the DS14, with an overall score of at least 20, for an individual to be classified as having TDP. TDP can be measured on a continuum, as higher scores on the accepted measures correspond to more severe levels of distressed personality (Denollet, 2005). The maximum attainable score on the DS14 is 56.

The DS14 meets the standards of content validity, criterion-related validity, and construct validity (Denollet, 2005). Cronbach's α for negative affectivity and social inhibition were 0.88 and 0.86, respectively (Denollet, 2005). These values are indicative of high internal consistency for this measure. This measure accurately assesses the presence of TDP and is applicable across populations (Denollet, 2005; Grande et al., 2013; Svansdottir et al., 2012).

Test-retest correlations were also gathered for the DS14. The measure was given to 121 individuals who had initially completed the DS14 three months earlier. The test-retest correlations were 0.82 for the negative affectivity facet of the measure and 0.72 for social inhibition (Denollet, 2005). These correlations demonstrate the stability of the DS14 scores over time.

BMS. The BMS is a 10-item inventory that measures the presence and severity of burnout (Malach-Pines, 2005). The 10 items consist of words and phrases that are related to burnout symptoms. Examples include: "I've had it", disappointed with people, and worthless/like a failure. Respondents use a 7-point Likert scale to assign values to each item. The values range from 1 to 7, which correspond to "never" and "always," respectively. There are also numerical values for the various degrees between the two extremes.

Scoring the BMS is performed by adding the values of the responses and dividing that total by 10 (Malach-Pines, 2005). The resulting score enables assessors to assign a magnitude to the level of burnout. The cut-off values for the BMS were based on research into the lengthier Burnout Measure, which used a 7-point Likert scale on 21 items to assess the presence of burnout (Pines & Aronson, 1988). Scores were calculated and a minimum value was established to indicate the presence of burnout. Based on additional analysis of these values and the validity of the shorter measure, the instructions provided with the BMS document that 3.5 should be used as the minimum score to indicate the presence of burnout (Malach-Pines, 2005). Scores up to 2.4 indicate a very low, essentially nonexistent level of burnout. There are danger signs of burnout for individuals with scores between 2.5 and 3.4. A score of 3.5 to 4.4 indicates burnout is present. Scoring between 4.5 and 5.4 means the individual has a serious problem with burnout. A score of 5.5 or above indicates the individual needs to seek immediate help from a professional. The maximum attainable score on the BMS is seven.

The BMS has also been shown to meet validity standards. Derived from the original Burnout Measure, the BMS is applicable to individuals in the workforce, as well as groups that are not in occupational settings (Malach-Pines, 2005). As previously noted, samples from

multiple populations were used to confirm the reliability and validity of the BMS. Cronbach's α varied, depending on the population studied. However, all values of α were at least 0.85, indicating high internal consistency (Malach-Pines, 2005).

The test-retest correlation of the BMS was assessed by giving the measure to a population of MBA students 3 months after the original completion date. The resulting correlation coefficient of 0.74 indicates temporal stability of the BMS (Malach-Pines, 2005). Researchers did not indicate that other populations were retested in this manner.

Threats to Validity

The reliability and validity of both measures that were used in this research have been confirmed. There are similarities between two questions on the BMS and two questions on the negative affectivity section of the DS14. These questions assess feelings of unhappiness and depression/"down in the dumps", respectively. Although these similarities exist, the complete measures are different and did not cause concern for overlapping constructs.

Other threats to the validity of this research existed because of the method in which the study was conducted. There were concerns associated with conducting data collection online. The major issues included multiple submissions and lack of serious responses (Reips, 2009). Those who were not serious about participating in the study may have given false answers. Others may have skewed results by participating more than once. Research has indicated that informing individuals of the serious nature of the study and discouraging multiple submissions because of detrimental effects has worked in reducing these trends (Reips, 2002). In fact, asking the question of whether the participant is serious at the beginning of the study has been an effective device (Aust, Diedenhofen, Ullrich, & Musch, 2013). The SurveyMonkey

authentication process, in which user accounts with unique usernames and passwords are utilized, virtually eliminated the possibility of multiple responses and reduced the likelihood of false submissions.

Another threat to validity was the possibility of the Hawthorne effect. The Hawthorne effect occurs when participants change facets of their behavior because they are aware of being in a study (Sedgwick, 2011). Although this trend has most commonly been associated with studies conducted in person, there was still a possibility that participants in the current research could have exhibited the Hawthorne effect. Individuals may have believed they were experiencing burnout and, therefore, answered the questions on the BMS in ways that erroneously reflected that opinion.

Although there appeared to be threats to the validity of this study, they were not expected to have a significant impact on the study. Use of the SurveyMonkey Audience likely yielded few, if any, participants who were not serious. This was due to the methods employed to recruit and maintain membership in the SurveyMonkey Audience. In addition, as previously noted, this resource eliminated the threat of multiple submissions. The scoring methods for the DS14 and BMS were not readily available to participants, which should have reduced any skewed results due to the Hawthorne effect. Therefore, these threats to the validity of the current study were considered minimal.

Statistical Analyses

The following data was collated using the results from the DS14 and BMS, as well as the demographic information provided by study participants. Data from individuals who did not meet the minimum participation requirements were excluded. All data were analyzed using the

Statistical Package for the Social Sciences (SPSS). The first 2 research questions required analysis of all participants in the study, whereas the remaining 3 questions only related to individuals who had both burnout and TDP.

Research Question 1: Is there a difference in the prevalence of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP?

$H_0$1: There is no difference in the prevalence of burnout between working adults with and without TDP.

H_a1: There is a difference in the prevalence of burnout between working adults with and without TDP, such that there is a higher proportion of individuals with burnout among individuals with TDP as compared with individuals without TDP.

Prevalence was analyzed by determining how many individuals had TDP and how many did not, as indicated by scores on the DS14. Once these figures were determined, the proportion of participants in each population with burnout were identified, based on their scores on the BMS. These values were compared to determine if there was a difference in the prevalence of burnout in those with and without TDP. The chi square (χ^2) test was used to conduct this comparison.

Research Question 2: Is there a difference in the severity of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP?

$H_0$2: There is no difference in the severity of burnout for those with and without TDP.

H_a2: There is a difference in the severity of burnout for those with and without TDP.

For severity, the mean of the scores on the BMS for individuals with burnout in each population (i.e., with and without TDP) were calculated. The mean BMS score for those with

TDP was compared to the score of those without TDP. An independent two-sample *t* test was used to determine if there was a significant difference between the two percentages. These results indicated whether there was a difference in the severity of burnout between the populations.

Research Question 3: Does burnout, as measured by the BMS, correlate with TDP, as measured by the DS14?

$H_0$3: There is a no relationship between severity of burnout and severity of TDP.

H_a3: There is a positive relationship between severity of burnout and severity of TDP, such that higher levels of burnout correspond to greater severity of TDP.

Correlation analysis was used to answer research question 3. A coefficient of correlation was generated to examine the relationship between the severity of burnout and the severity of TDP. The result enabled the researcher to determine the strength of the relationship between these two variables and whether that relationship was positive or negative.

Research Question 4: Does age moderate the relationship TDP and burnout?

$H_0$4: There is no moderating effect of age, such that the relationship between TDP and burnout does not differ by age.

H_a4: There is a moderating effect of age, such that the relationship between TDP and burnout differs by age.

Regression analysis was used to examine research question 4. Only individuals with TDP were assessed for this question. Age was the moderating factor used in the analysis of whether burnout varied in this population. Moderators may have one of three effects on the relationship between an independent variable (TDP) and a dependent variable (burnout): (a) enhancement, in

which an increase in the moderator will increase the magnitude to which the predictor affects the outcome; (b) buffering, in which an increase in the moderator will decrease the effect of the independent variable on the dependent variable; and (c) antagonistic, in which increasing the moderator will reverse the effect of the independent variable on the dependent variable (Fairchild & MacKinnon, 2009). The effects of moderating variables can be difficult to determine in small samples (Fairchild & MacKinnon, 2009). This fact further supported the choice of a larger sample size than indicated by the statistical calculator, as noted earlier.

Regression analysis enabled this relationship to be defined. A macro that has been written and tested was used to perform this analysis (Hayes & Matthes, 2009). The macro, designed for specific application to moderating variables, involves selection of a value of the moderator and subsequent estimation of the effect of the independent variable (Hayes & Matthes, 2009). Therefore, if age was a moderator of the relationship between burnout and TDP, there would be differences in the severity and prevalence of burnout, dependent upon the age group.

Research Question 5: Does gender moderate the relationship between TDP and burnout?

$H_0$5: There is no moderating effect of gender, such that the relationship between TDP and burnout does not differ by gender.

H_a5: There is a moderating effect of gender, such that the relationship between TDP and burnout differs by gender.

Research question 5 was also examined using regression analysis and the macro described for use in question 4. There were two levels for the moderating variable in this analysis, corresponding with male and female participants. If gender was a moderator, one would expect differences in prevalence and severity of burnout in males and females.

Ethical Procedures

The APA code of ethics was observed throughout this research. Section 9.02 regarding the application, validity, and reliability of instruments were of particular importance (American Psychological Association, 2002). A statement of informed consent was provided at the beginning of the survey so that individuals were aware that their participation was completely voluntary and they could have quit at any time (Appendix A).

No deception was used during the course of this research. However, the manner in which the instruments were scored was not presented to participants. This was done in an attempt to exclude biases participants may have had and maintain the integrity of the study.

The privacy of all participants was protected, as no personally identifiable information was requested. Any printed data will be retained in a locked cabinet in the home of the researcher. Access to the raw data will be restricted to the researcher. All data will be destroyed after 5 years. Approval for this research was obtained from the IRB (Approval # 03-31-15-0257735).

Summary

The purpose of this chapter was to explain how the current study will be conducted. Criteria for participation were presented. The rationale for the number of participants was explained. The instruments that were used were presented, along with information regarding their validity and reliability. A minimal threat to validity was noted, although there were no anticipated problems because of this. The methods that were used to analyze data for each research question were identified. The responsibilities of the researcher to conduct an ethical study, protect the privacy of participants, and preserve the integrity of the data were also

presented. The results of this research and discussion of their meaning will be presented in the following chapters.

Chapter 4: Results

Introduction

The purpose of this research was to examine the relationship between burnout and TDP. This relationship was examined by using the responses of participants on the DS14 and the BMS. Analysis was performed on the data gathered from these measures to determine the following: (a) whether there was a difference in prevalence of burnout in individuals with TDP as compared to individuals without TDP; (b) whether there was a difference in severity of burnout in individuals with TDP and those without TDP; (c) if there was a correlation between severity of TDP and severity of burnout; (d) if age was a moderator of the relationship between TDP and burnout; and (e) whether gender was a moderator of the relationship between TDP and burnout. The data and quantitative statistical analysis of the results will be reviewed in this chapter. In addition, questions that arose during review of the data will be discussed and associated analyses will be presented. Finally, the conclusions formulated from the analysis of the research questions and the additional questions, will be presented.

Data Collection

The data for this study were collected using the online resource, SurveyMonkey. As previously noted, SurveyMonkey maintains a participant pool that closely reflects the demographic composition of the United States. A link to the survey, consisting of questions from the DS14 and BMS, was sent to members of this pool who were at least 25 years old. Participants also provided demographic information, which included gender, age, occupation, number of hours worked per week outside of the home, and length of time employed in their current fields. Individuals were required to be employed a minimum of 30 hours per week

outside the home to be eligible for participation in the study. In accordance with SurveyMonkey terms, the first 300 individuals who responded and met the aforementioned criteria were designated as study participants.

Within 48 hours of the study launch, 290 individuals had responded. At that point, demographic information was reviewed to assess participation eligibility. Because individuals who did not meet the age restrictions did not receive the survey, the review consisted of checking employment information. Sixteen individuals were automatically disqualified because they did not meet the work requirement. Twelve additional respondents were removed for one of the following reasons: incomplete surveys (seven), student listed as occupation (two), or responses indicated the respondent was not serious. For example, one respondent listed 33 as the response to age, occupation, and length of time employed. Although this may be an acceptable response for age or length of time employed, 33 was not deemed acceptable as an occupation. Students were excluded because, though there is significant work involved with being a student, individuals who are exposed to employment-related stimuli that may lead to burnout are the focus of the current study. A list of the ineligible respondents was sent to SurveyMonkey. The survey link was then sent to an additional 35 participants. Within 72 hours of the launch, the survey ended with 333 total eligible participants, 33 more than the minimum sample size stated in Chapter 3. Overall, 92% of respondents were used for the current study.

Data were exported from SurveyMonkey in an SPSS format. This eliminated the need for transcription and possible errors that could result from this process. Next, columns were added to enable calculations and coding. Instructions for computing total scale scores were input into SPSS. A column for calculation of BMS scores was added, in which the sum of the responses on

the 10 questions was taken and divided by 10. A coding column for the presence of burnout was added, in which individuals with 3.4 or below were coded N for no burnout present and individuals with 3.5 or above were coded Y for the presence of burnout, as indicated by the BMS scoring instructions (Malach-Pines, 2005).

Columns were also added for the calculation of the negative affectivity and the social inhibition subscales, respectively, of the DS14. The separation of these subscales was important because there must be a minimum score of 10 on each subscale for an individual to be categorized as having TDP. Because Items 1 and 3 on the social inhibition subscale are scored in reverse, instructions were input into SPSS to reflect these changes and for use in the calculations. Two more columns – one for Y (yes) or N (no) to the presence of TDP and one for the overall TDP score as calculated using SPSS by adding the subtotals of the negative affectivity and social inhibition subscales – were also added.

Data Cleaning

Because of the setup of the survey, any participants who did not answer all questions were automatically disqualified and removed from the sample. Therefore, there was no need to discard any incomplete surveys and there were no missing data.

Multicollinearity can occur if variables are found to be closely related, resulting in compromised data analyses (Olivia & Ilie, 2013). TDP, age, and gender were checked for multicollinearity, with each variable taking a turn as the dependent variable in the assessment. None of these variables were found to have high correlations with each other, as the variance inflation factor (VIF) was at 1.01, 1.02, and 1.03, respectively, for each iteration. All of these

VIF values were below the set threshold of 3 (O'Brien, 2007). Corresponding tolerance values were 0.99, 0.98, and 0.97.

The validity of parametric tests is dependent upon whether or not there is a normal distribution of data, as normality is an assumption (Ghasemi & Zahediasl, 2012). Normality of scores on the BMS and DS14 were assessed by inputting instructions for SPSS to perform the Shapiro-Wilk test. The Shapiro-Wilk test is appropriate for determining if data departs from the normal distribution and is useful for various sample sizes (Oztuna, Elhan, & Tuccar, 2006). The normality statistic for the BMS was 0.96, whereas the statistic for the DS14 was 0.98. The distributions for both the BMS and DS14 are shown in Figure 2.

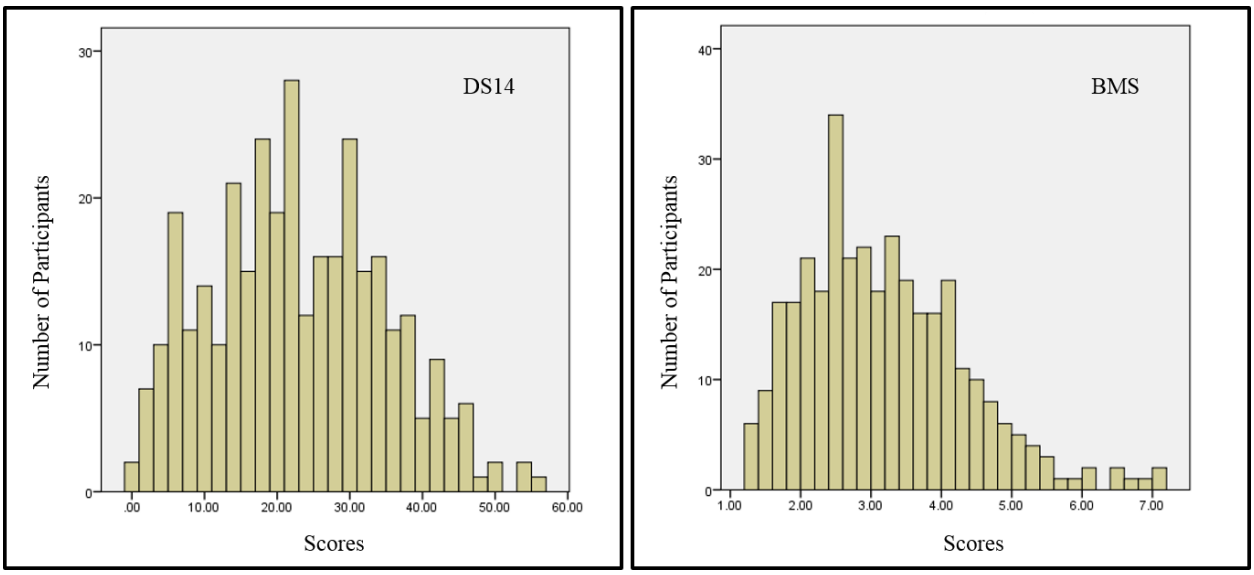


Figure 2. Distributions of DS14 and BMS scores

Skewness, which is a measure of symmetry, and kurtosis, which measures the shape of the distribution, were also examined, as they may impact analyses (Doric, Nikolic-Doric, Jevremovic, & Malisic, 2010). Values of skewness and kurtosis satisfying the inequality $-1 \leq x \leq 1$ are assumed to indicate a normal distribution, with values of 0 denoting an exact normal

distribution (Bao, 2013; Doric et al., 2010). The skewness coefficient for BMS scores was 0.78 (*SE* = 0.13) and was 0.23 (*SE* = 0.13) for the DS14 scores, with both measures positively skewed. Kurtosis coefficients for the BMS and DS14 were 0.57 (*SE* = 0.27) and 0.54 (*SE* = 0.27), respectively. According to the aforementioned parameters, the DS14 and BMS scores were normally distributed. Therefore, parametric tests were used for data analysis.

Outliers, or observations that are substantially different from others, can cause distortions in data analysis (Baragona, Battaglia, & Poli, 2011). These values can lead researchers to the belief that values or results are significant when they are not. For this study, tests for outliers in both DS14 and BMS scores were performed using the outlier labeling method, which incorporates a standard multiplier for outliers (Hoaglin & Iglewicz, 1987; Hoaglin, Iglewicz, & Tukey, 1986). This method entailed using the 25% and 75% quartile values provided by SPSS during the normality tests, along with a standard multiplier of 2.2, to determine upper and lower limits for data. Outliers for the BMS would have been scores below -1.22 or above 7.42. For the DS14, outliers would have been scores below -26.6 or above 70.6. There were no outliers in DS14 or BMS scores.

Descriptives

The demographic distribution of participants is listed in Table 1. Women comprised 59.5% and men 40.5% of study participants. According to the U. S. Census (2011), women made up 50.8% of the population and men make up 49.2%. The U. S. Department of Labor, Bureau of Labor Statistics (2014) indicated that women comprised 47% of the labor force of the United States, with 73% of them employed fulltime. There was a slightly higher representation of females in this study than in the general composition of the United States or the work force.

Table 1

Demographics of Participants

	Number of Participants	Percentage of Sample	Percentage of U.S. Population*	Min Age (yrs)	Max Age (yrs)	Mean Age (yrs)	Std Dev
Female	198	59.5	50.8	25	72	46.88	12.01
Male	135	40.5	49.2	25	75	50.14	12.64
Total Sample	333	100	100	25	75	48.2	12.36

Note. Data obtained from 2010 US Census results (http://www.census.gov)

Using the 22 major groups of the 2014 standard occupational classification as presented by the U. S. Department of Labor Bureau of Labor Statistics (2014), the participants were categorized according to the employment listed on the survey. One group defined by the Bureau of Labor Statistics – farming, fishing and forestry – was not used because no participants listed this occupation. A category titled *other* was included to classify individuals who listed ambiguous job titles (e.g., uncommon abbreviations or acronyms) or groups with fewer than three participants. The number of participants in each field who suffered from TDP, burnout, and both TDP and burnout were also identified. The stratification of participants appears in Table 2. This data also enabled estimates of which field of employment had the most TDP individuals with burnout.

Table 2

Participant Stratification Based on Job Categories, Organized by Mean BMS Scores

	Participants				Scores		
Standard Occupation Classification Major Groups	Total n	Burnout+	TDP+	TDP+ and Burnout+	Mean BMS Score of TDP+	Mean BMS Score of TDP-	Group Mean BMS Score
Food Preparation & Serving Related	6	4	2	2	4.55	3.23	3.67
Arts, Design, Entertainment, Sports, & Media	11	4	7	3	3.83	3.18	3.59
Protective Service	5	2	3	2	4.57	1.95	3.52
Transportation & Material Moving	10	4	4	3	4.70	2.65	3.47
Architecture & Engineering	6	3	2	1	3.25	3.45	3.38
Business & Financial Operations	36	18	17	12	3.99	2.82	3.37
Sales & Related	20	7	9	7	4.62	2.21	3.30
Management	15	7	9	6	3.76	2.45	3.23
Education, Training, & Library	53	18	15	9	3.61	2.94	3.13
Computer & Mathematical	25	10	17	9	3.57	2.14	3.11
Installation, Maintenance, & Repair	14	6	7	5	3.80	2.37	3.09
Life, Physical, & Social Science	9	3	3	2	4.20	2.48	3.06
Legal	11	3	5	3	3.50	2.63	3.03
Office & Administrative Support	22	6	9	4	3.58	2.52	2.95
Personal Care & Service	5	1	3	1	2.97	2.75	2.88
Healthcare	38	9	16	7	3.32	2.51	2.85
Construction & Extraction	8	2	3	2	3.83	2.12	2.76
Community & Social Services	23	3	5	2	3.18	2.48	2.63
Production	4	0	1	0	3.00	2.07	2.30
Other	12	6	6	5	4.45	2.83	3.64
Total	333	116	143	85	3.78	2.63	3.13

Categorization of TDP and Burnout

Because the focus of this study was burnout and TDP, having participants who were members of these groups was critical. Of the 333 participants, 143 individuals met the criteria of

having TDP (i.e., scores of at least 10 on both the social inhibition subscale and the negative affectivity subscale), with 77 females and 66 males meeting the standard as determined by scores on the DS14 (Table 3). Because of the nature of the subscales, there was a possibility that a total DS14 score could be higher than 20 without an individual having TDP. A participant may have had a high score in either social inhibition or negative affectivity, but not have had the minimum score of 10 on the other subscale. Individuals with TDP comprised 42.9% of the sample, which is higher than the estimate of 39% of all individuals based on prior findings (Denollet, 1998).

Table 3

TDP Distribution and DS14 Mean Scores

	TDP+			TDP-		
	Female (n=77)	Male (n=66)	Combined	Female (n=121)	Male (n=69)	Combined
Mean (SD)	33.08 (7.23)	33.30 (7.70)	33.18 (7.43)	14.27 (6.79)	14.19 (7.92)	14.24 (7.20)
Min/Max	20/55	20/54	20/55	1/30	0/33	0/33
Mean Negative Affectivity Score (SD)	16.17 (4.28)	15.77 (4.42)	15..99 (4.34)	7.49 (4.53)	6.26 (5.20)	7.04 (4.81)
Mean Social Inhibition Score (SD)	16.91 (5.03)	17.53 (4.67)	17.20 (4.86)	6.79 (4.94)	7.93 (5.49)	7.20 (5.16)

In order to be categorized as having burnout, individuals had to score at least 3.5 on the BMS, with 7 as the maximum attainable score. There were 116 individuals with burnout in this study sample (Table 4). Seventy-three of those with burnout were female and 43 were male.

Burnout affected 34.8% of the sample population. As previously noted, there is no single statistic that characterizes the prevalence of burnout in society as a whole because previous

research has focused on specific groups. Therefore, this percentage cannot be compared to the overall population.

Table 4

Burnout Distribution and BMS Mean Scores

	BO+			BO-		
	Female (n=73)	Male (n=43)	Combined	Female (n=125)	Male (n=92)	Combined
Mean (SD)	4.39 (0.77)	4.39 (0.88)	4.39 (0.81)	2.54 (0.56)	2.34 (0.59)	2.45 (0.58)
Minimum Score	3.5	3.5	3.5	1.3	1.3	1.3
Maximum Score	6.8	7	7	3.4	3.4	3.4

Results

Having individuals with TDP and individuals with burnout was very important to this study. Just as important was having some of the same individuals with both TDP and burnout. Eighty-five of the 333 participants met had both constructs. The responses of all participants were used in the analyses of Hypotheses 1 and 2. Only the responses given by individuals with TDP (TDP+) were used for Hypotheses 3, 4, and 5. The statistical software package, SPSS, was used to perform all analyses.

Research Question 1

A Chi-Square test was used to answer the question: Is there a difference in the prevalence of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP? First, a cross-tabulation analysis was used to determine the distribution of participants into various groups based on the presence or absence of TDP, combined with the presence or absence of burnout (Table 5).

Table 5

Distribution of TDP and/or Burnout among Participants

		Burnout Present	
		Yes	No
		Number (Sample %)	Number (Sample %)
TDP Present	Yes	85 (25.5%)	58 (17.4%)
	No	31 (9.3%)	159 (47.7%)

Next, the actual Chi-Square analysis was performed, with results of χ^2 (1, n =333) = 66.845, $p < .001$. The level of significance used for this calculation was $\alpha = 0.05$. The p-value was less than α and, therefore, the null hypothesis was rejected. The effect size (b) of 0.448 can be considered medium to large, as it falls between the medium (0.30) and large (0.50) effect sizes for Chi-square noted by Cohen (1992).

Research Question 2

An independent 2-sample *t* test was performed to answer the second research question: Is there a difference in the severity of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP? The mean BMS scores of each group based on the presence or absence of TDP and/or burnout are presented in Table 6, showing the highest scores among individuals with both TDP and burnout.

Table 6

Mean BMS Scores of Groups with or without TDP and/or Burnout

	BO+	**BO-**	Combined
	Score (SD)	Score (SD)	Score (SD)
TDP+	4.5 (0.87)	2.73 (0.5)	3.78 (1.15)
Min/Max	3.5/7.5	1.3/3.4	1.3/7.0
TDP-	4.08 (0.48)	2.35 (0.58)	2.63 (0.85)
Min/Max	3.5/5.4	1.3/3.4	1.3/5.4

The independent sample *t* test was performed to compare the BMS mean scores of individuals with TDP and those without TDP. As predicted, individuals with TDP ($M = 3.78$, $SD = 1.15$, $n = 143$) had more severe burnout than those without TDP ($M = 2.63$, $SD = 0.85$, $n = 190$), $t(251.79) = 10.11$, $p < .001$, 95% CI [0.93, 1.38]. Cohen's *d* was calculated by using an online effect size calculator (danielsoper.com). Using the respective means and the corresponding standard deviations, Cohen's *d* was found to be 1.15. According to Cohen (1992), when examining the means between independent samples, an effect size of 0.20 is small, 0.50 is medium, and 0.80 is large. Although perhaps not commonly presented, effect sizes can be greater than 1, as the difference between means may be greater than one unit of standard deviation (Plonsky & Oswald, 2014). For this test, Cohen's $d = 1.15$ represents a large effect size; that is, not only was there a higher BMS score for individuals with TDP, but there was a statistically significant difference in the mean scores. Therefore, the null hypothesis that there was no difference in severity of burnout between individuals with and without TDP was rejected.

Research Question 3

Correlation analysis was used to answer the third research question: Does burnout, as measured by the BMS, correlate with TDP, as measured by the DS14? To perform this analysis only BMS scores and DS14 scores from individuals who had TDP were used. Pearson's correlation was used for this analysis because of normal distribution of scores for both measures.

The result of the analysis was a value of Pearson's $r(143) = 0.449$ and $p < .001$. The correlation coefficient means that there was a positive correlation between BMS scores and DS14 scores in individuals with TDP. That is, as scores on the DS14 increased, the BMS scores

also increased. Because the *p*-value was less than .05 (α), the correlation between these variables was considered statistically significant.

Research Question 4

Regression analysis was used to answer the fourth research question: Does age moderate the relationship between TDP and burnout? Version 2.13 of the 'Process Macro' officially released in 2013 (Hayes, 2013) was incorporated in this analysis. The macro incorporates 76 different models, each of which is applicable to a different type of interaction. Model 1 specifically deals with moderation (Figure 3) and can be used for logistic and multiple regression analyses (Hayes & Matthes, 2009). This model was developed based on research into two methods – the pick-a-point approach and the Johnson-Neyman approach – for examining moderation (Hayes & Matthes, 2009). Researchers found that conducting analysis with either of these methods involved complicated computations and errors associated with categorizing variables as either dichotomous or continuous. In response, they developed the MODPROBE macro as a computational aide that can perform the same tasks as these methods in an automated manner (Hayes & Matthes, 2009). The calculations are performed automatically and the macro automatically detects the type of variables used (Hayes & Matthes, 2009). The need for the creation of dummy variables, which is usually included with regression analysis, is eliminated with use of the models.

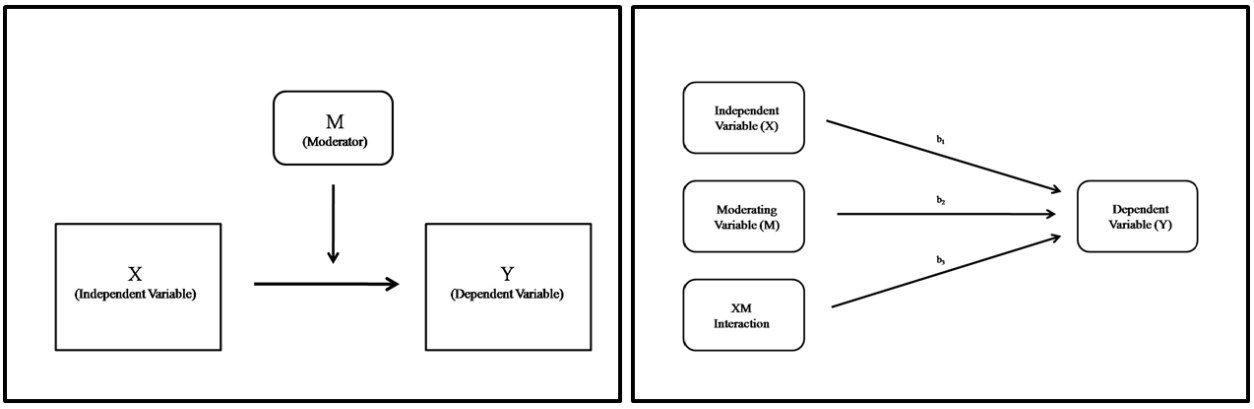


Figure 3. Representation of pathways used in moderation model of Process macro.

Model 1 is appropriate for use with dichotomous or continuous variables (Hayes, 2015). For this question, both types of variables were used. As illustrated, the effect of the predictor variable, X, and the moderating variable, M, on the dependent variable (Y), are all taken into account in the model. For this question, TDP was the predictor or independent variable, age was the moderator, and burnout was the dependent variable. The age ranges of individuals with TDP are shown in Table 7.

Table 7

Age Statistics for Individuals with TDP

	N	Min Age (yrs)	Max Age (yrs)	Mean Age (yrs)	Median Age (yrs)	Std Dev
Participants with TDP	143	25	69	45.9	46	12.11

Of interest in this question is whether age moderated the relationship between burnout and TDP with regard to the prevalence of burnout, the severity of burnout, or both prevalence and severity. To assess the impact of age on the prevalence, respondents without TDP were

excluded using commands in SPSS. For individuals with TDP, burnout was used as a dichotomous variable; that is, whether or not the participants had burnout based on their BMS scores. Logistic regression was performed to determine whether age moderates the relationship between TDP and burnout with regard to prevalence. The interaction between age and TDP was not statistically significant, as the effect (*b*) = 0.0007, 95% CI [-0.04, 0.04], *p* = .9754. Because *p* > .05, the null hypothesis could not be rejected. That is, there was apparently no significant impact of age on the relationship between burnout and TDP with regard to prevalence.

The second part of examining this relationship entailed determining if age moderates the relationship between burnout and TDP with regard to severity. Again, model 1 of the Process macro was used, though for multiple regression analysis in this instance. The result of the analysis was that age did moderate the severity of burnout in individuals with TDP *b* = 0.004, 95% CI [0.002, 0.006], *p* = .0001. The model accounted for 54% of the variance (R^2 = 0.29, $F(3,139) = 18.83$, $p < .001$). The relationship between TDP and burnout severity increased with age (Table 8). Of those presented, the late fifties age group was shown to have the strongest relationship with severe BMS scores.

Table 8

Conditional Effect of TDP on BMS Scores at Different Ages

Age (yrs)	b	Std Err	t	p	95% CI	
					LL	UL
33.8	0.02	0.02	1.34	0.18	-0.10	0.05
45.9	0.07	0.01	6.24	0.00	0.05	0.09
58	0.12	0.02	7.31	0.00	0.09	0.15

Research Question 5

The same macro and model as described above were used for the regression analysis performed to answer the question: Does gender moderate the relationship TDP and burnout? Also, as with research question 4, there were two parts to this research question: determining whether gender moderates the relationship between burnout and TDP with regard to prevalence and determining whether gender moderates this relationship with regard to severity. The distribution of burnout among males and females, all of whom had TDP, is listed in Table 9. The calculations for question both parts of question 5 were based on this subpopulation.

Table 9

Distribution of TDP and Burnout by Gender

	Female	Male	Total
TDP/ Burnout	48	37	85
TDP/ No Burnout	29	29	58
Total	77	66	143

To assess the impact of gender on this relationship with regard to prevalence, respondents without TDP were again excluded using commands in SPSS and burnout was used as a dichotomous variable. Logistic regression using model 1 was performed to determine whether gender moderates the relationship between TDP and burnout with regard to prevalence. The interaction between gender and TDP was not statistically significant, as $b = 0.75$, 95% CI [-0.41, 1.9], $p = .21$. Because $p > .05$, the null hypothesis could not be rejected. This means that there was apparently no significant impact of gender on the relationship between burnout and TDP with regard to prevalence.

Model 1 was used again to determine whether gender moderates the relationship between burnout and TDP with regard to severity. The mean BMS scores for males and females with TDP are listed below (Table 10). The result of the analysis showed that gender did not moderate the relationship between burnout and TDP with regard to severity, as b = 0.019, 95% CI [-0.027, 0.064], p = .42. The model accounted for 47% of the variance (R^2 =0.22, F(3,139)=13.11, p < .001). Because p > .05, the null hypothesis could not be rejected, meaning there was no statistically significant impact of gender on the relationship between TDP and burnout.

Table 10

Mean BMS Scores of Participants with TDP

	BMS Scores		
	BO+	BO-	Combined
	Score (SD)	Score (SD)	Score (SD)
Female	4.59 (0.85)	2.77 (0.52)	3.91 (1.16)
Male	4.38 (0.90)	2.69 (0.49)	3.64 (1.13)

Exploratory Analysis

There were clear differences in burnout severity and prevalence between individuals with and without TDP. However, additional analysis was performed after review of some of the initial results led to new questions. The lack of moderating influence by gender on the relationship between TDP and burnout led to an investigation of whether other demographic factors, such as length of time employed, may have an impact on this relationship. Also, there were questions of whether gender or age had moderating effects on burnout in individuals without TDP, as opposed to just individuals with TDP. Another point of interest was whether the scores on the

DS14 and BMS were correlated in participants without TDP, as was seen in individuals with TDP. Therefore, additional analyses were performed.

Gender as a Moderator of Burnout in Individuals without TDP. Gender was found to have no statistically significant moderating effect on burnout in individuals with TDP. For this reason, additional analysis was performed to determine if gender moderated severity of burnout in individuals without TDP. The same moderation macro and model used for questions 4 and 5 was used for this analysis. This analysis showed that there was no statistically significant moderation effect of gender, as $b = 0.007$, 95% CI [-0.02, 0.04], $p = .64$.

Age as a Moderator of Burnout in Individuals without TDP. Age was found to have a statistically significant moderating effect on the severity of burnout in individuals with TDP. Therefore, individuals without TDP were examined to determine whether this moderating effect still occurred. As with previous regression analyses, the Process macro was used. The results, $b = 0.001$, 95% CI [-0.0001, 0.0024], $p = .072$, indicated that age does not moderate the relationship between burnout and TDP with regard to severity in individuals without TDP, as $p > .05$.

Length of Employment and Burnout Severity in TDP. One of the demographic questions asked during the survey was how long the individual had been in the occupation listed. Because this information was available, a question arose of whether the length of time employed impacted the severity of burnout in individuals with TDP. Analysis was run to determine if there was a correlation between the severity of burnout, as determined by BMS scores, and the length of employment.

As with other BMS and DS14 scores, the length of time employed was checked for normality to determine whether parametric or non-parametric testing should be used. The

distribution was not normal, so non-parametric correlation analysis was performed. A Spearman's rho correlation coefficient was generated, resulting in $r = -0.051$. The p-value for this calculation was .547; therefore, length of employment did not correlate with burnout.

BMS and DS14 Scores for Individuals without TDP. A positive correlation between BMS and DS14 scores was found in participants with TDP. This prompted an examination of the correlation between these scores of individuals in the sample without TDP. Correlation analysis yielded a value of Pearson's $r(190) = 0.455$ and $p < .001$. This coefficient indicated that there was a similar positive correlation between these scores for individuals without TDP as seen in those with TDP, meaning that as scores on the DS14 increased, the BMS scores also increased. Because the p-value was less than .05 (α), the correlation between these variables was considered statistically significant.

Summary

The purpose of this chapter was to determine the extent of the relationship between TDP and burnout. Five research questions were posited to investigate this relationship. There was a difference in severity and prevalence of burnout in individuals with TDP. There was a correlation between severity of burnout and severity of TDP, as indicated by scores on the BMS and DS14. There was also a correlation found between these scores in participants who did not have TDP. Age did not moderate the relationship between burnout and TDP with regard to prevalence, but did moderate this relationship with regard to severity. There was no effect of age on burnout in individuals without TDP. Gender had no effect on the relationship between burnout and TDP with regard to severity or prevalence. Length of time employed in the current

field had no significant correlation with the severity of burnout. All of the aforementioned results will be discussed in greater detail in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this research was to examine the relationship between burnout and Type D personality (TDP). Separately, burnout and TDP have been associated with health problems. The presence of both together could increase risks of developing and potentially exacerbating these problems in affected individuals. Personality influences how individuals behave and perform in the workplace (Fortunato & Harsh, 2006). Most people are aware that there are differences in the personalities of individuals. However, they may not be aware of the implications of these differences. Some may wonder why they are having a more adverse reactions to the same environment that others seem to handle with ease. Others may wonder why a group of individuals appear to be having a difficult time, while they handle their job responsibilities with ease. The presence of TDP may be a reason, as the results of this research showed.

In general, individuals with TDP have been shown to have different outlooks and process stimuli differently (Denollet et al., 1995). These trends are also apparent in the workplace. Individuals with TDP are more likely to have, and to have more severe burnout than those without TDP, according to the results of this study. Among individuals with TDP, those with more serious symptoms of the disorder experience burnout more often and with greater severity. Furthermore, severity of burnout worsens with age in individuals with TDP.

Interpretation of Results

Prior to beginning the testing of the research hypotheses, the sample had to be evaluated for descriptive statistics. In order for an individual to be classified as having TDP, minimum

scores must be obtained on both the negative affectivity and social inhibition subscales of the DS14 (Denollet, 2005). Of the 333 participants, 143 (42.9%) had TDP. This is higher than the estimates of 13 to 39% of the population previously posited (Denollet, 1998). As the sample population for the current study was a random sampling, TDP appears to be more widespread than initially believed.

In order for an individual to have burnout, the score obtained on the Burnout Measure, Short Version (BMS) had to be at least 3.5 (Malach-Pines, 2005). The sample consisted of 116 participants (34.8%) suffering from burnout. Because previous researchers of burnout have primarily focused on specific groups, there is no ready comparison for this percentage.

Primary Hypotheses

Alternative Hypothesis 1. There was a significant difference in the prevalence of burnout in individuals with TDP as compared with individuals without TDP. Of the 143 participants with TDP, 25.5% (85) had burnout. Conversely, only 9.3% (31) of the 190 participants without TDP suffered from burnout. According to the chi-square analysis, the difference in these percentages was statistically significant.

Other researchers have reached similar conclusions. Mommersteeg et al. (2012) found similar results regarding burnout in individuals with TDP, though they used depression as a mediator between TDP and work-related health outcomes. Therefore, there was the possibility that the results of their study were due to the presence of depression. However, no additional factors were included in the analysis of this question in the present study. Therefore, a significant difference in the prevalence of burnout in individuals with TDP as compared to those without

was confirmed by the results of the current study. There were 116 individuals in the current study with burnout, and the overwhelming majority of those (85) had TDP.

The results of the study by Oginska-Bulik (2006) support the result of the current study of increased prevalence of burnout in individuals with TDP. Oginska-Bulik noted that individuals with TDP were more likely to perceive their workplace environments as stressful. If individuals with TDP are more likely to succumb to stress, they are more likely to develop burnout, which was found to be the case in this study.

The current results, in conjunction with previous studies, offer an explanation for some of the aforementioned differences in workplace outcomes. An individual with TDP may be more impacted by the stress in the workplace than those without TDP. Stimuli that have little impact on an individual without TDP could cause more severe reactions up to and including burnout in a person with TDP. An individual with TDP may process a benign occurrence as a personal slight (Fortunato, 2004). In a work environment, an example of this could be one person being asked to help on a project, while another individual is otherwise engaged. If the individual with TDP is not asked to help with the project, he or she may believe there is an unjustified lack of confidence in his or her abilities when there is simply an issue of availability. Therefore, when attempting to figure out why two employees who experience the same stimuli have markedly different outcomes, the answer is likely their personality type.

Individuals with TDP innately have more adverse outcomes, which may factor into the differences in the workplace. Aside from the potential health consequences that have been discussed, individuals with TDP experience higher levels of anxiety and anger than those without TDP (Denollet et al., 2010; Kupper & Denollet, 2013). These characteristics may be causative

factors in why individuals with TDP process workplace stimuli in such a negative manner. The current sample indicated that there are likely more individuals with TDP than previously thought, which may also offer some explanation for increased burnout statistics.

Alternative Hypothesis 2. There was a significant difference in the severity of burnout between individuals with and without TDP. The mean BMS score of individuals with TDP and burnout was 4.5 as compared with the 4.08 mean score of individuals without TDP. The difference between these means was statistically significant. Thus, individuals with TDP experienced more severe burnout than those without TDP. Referring back to the comparison of individuals in the same workplace, even if both perceived stimuli that led to burnout in a similar fashion, the individual with TDP would be more severely impacted than the other employee.

A project deadline is an example of a stimulus evoking the different levels of responses seen in these individuals. As previously reported, time constraints for the completion of a large amount of work can lead to burnout (Maslach et al., 2001). An individual without TDP may consider the deadline stressful and display a low level of burnout. However, an individual with TDP would consider the same situation extremely stressful and exhibit a higher level of burnout.

This trend was apparent among individuals who did not have the minimum 3.5 on the BMS to indicate the presence of burnout. The BMS scores were generally higher among individuals with TDP. The mean scores of individuals with TDP were 2.73 as compared with 2.35 among the remaining participants. This may be indicative of a greater risk for burnout for individuals with TDP, as a difference in prevalence of burnout has already been established.

Noting the higher BMS scores was important because of the potential health implications. Malach-Pines (2005) indicated specific problems with higher levels of burnout based on BMS

scores. Individuals with scores between 4.5 and 5.4 were categorized as having a "very serious" burnout problem, while individuals with scores above 5.5 were advised to seek immediate professional help (Malach-Pines, 2005). Because individuals with TDP have been shown to have higher BMS scores, monitoring may be required to determine if and when they require intervention.

Alternative Hypothesis 3. There was a correlation between severity of burnout and severity of TDP. The correlation was moderate and positive. As scores on the DS14 increased, so did scores on the BMS.

The potential need for monitoring of individuals with TDP is again underscored by this result. Certain levels of burnout require immediate assistance. If an individual has a higher score on the DS14 indicating more severe TDP, he or she likely also has a higher score on the BMS. Therefore, this individual would be at greater risk of developing complications associated with both TDP and burnout. As there are health risks associated with both TDP and burnout, an individual who has increased levels of both may be at a significantly higher risk for either the development or exacerbation of problems. For example, cardiovascular disease is a potential outcome associated with burnout and TDP, individually (Melamed et al., 2006; Martin et al., 2011). The presence of both burnout and TDP may either increase the risk for developing cardiovascular disease or make existing heart problems worse.

Null Hypothesis 4a. There was no statistically significant effect of age on the relationship between burnout and TDP with regard to prevalence. This means that there was no age at which the combination of TDP and burnout was seen at a significantly different frequency than any other. The ages of participants with TDP in the present sample ranged from 25 to 69

years, with a mean of ~46 years of age. None of these groups had a statistically higher percentage of individuals with burnout.

This result was different from the previous opposing theories regarding burnout. Some researchers believed that younger individuals were more susceptible to burnout (Maslach et al., 2001), while others believed that older individuals were more likely to have burnout (Stanetic & Tesanovic, 2013). Although individuals with TDP were the focus of the current study, neither of these scenarios appeared to be accurate for this population. Every age group included in this study had participants with TDP, as well as evidence of burnout. There are no age constraints on high levels of social inhibition and negative affectivity, the components required for TDP to be present. Although there have been inconsistencies in previous studies, collectively researchers have shown that individuals of any age can experience burnout. Therefore, burnout can affect any individual with TDP, regardless of age, which is substantiated by the current study participants.

Alternative Hypothesis 4b. There was a statistically significant effect of age on the relationship between burnout and TDP with regard to severity. So, although there was no difference in the presence of burnout in participants with TDP based on age, there was a difference in severity. As the age of the participant with TDP increased, so did the severity of burnout. The conditional effects of TDP on burnout at different ages were comparisons of groups in their early thirties, mid-forties, and late fifties, indicating that higher ages have an increasing impact on the relationship between burnout and TDP with regard to severity. Individuals in their late fifties had the highest BMS scores. A possible explanation for this trend may be that individuals in their fifties have been in the workforce longer than members of the other age

groups. Therefore, these individuals have been exposed to more stimuli that lead to burnout. Over time, these stimuli may have a cumulative effect, resulting in higher scores as an individual ages.

Null Hypothesis 5. There was no statistically significant effect of gender on the relationship between burnout and TDP. There were 77 female participants with TDP, 48 (62%) of whom suffered from burnout, and 66 male participants with TDP, 37 (56.1%) of whom suffered from burnout. There was no statistically significant difference in the prevalence or severity of burnout in males and females with TDP. Thus, males and females with TDP had approximately the same relationship with burnout and TDP.

Both TDP and burnout were seen in male and female participants in the current study. Differences within the individuals and their perceptions of stimuli were established as determining factors in the development of burnout. Males and females are present in many of the same professional, academic, and social settings, which means they are exposed to the same stimuli. The way in which each individual processes these stimuli, not gender, is what leads to burnout. TDP is an influential factor in this process.

Exploratory Hypotheses

Gender as a Moderator of Burnout in Individuals without TDP. After the acceptance of the null hypothesis that gender did not impact the relationship of burnout in individuals with TDP, the question arose of whether gender was a moderator in participants without TDP. According to results, there was no moderating role of gender in this segment of the sample, either. Thus, the first exploratory null hypothesis that there was no impact of gender on burnout in this sample could not be rejected. This fell in line with the inconsistent results previously

noted, in which researchers were unable to definitively determine whether gender moderated burnout (Rubino et al., 2013).

Age as a Moderator of Burnout in Individuals without TDP. Age was found to have no impact on the prevalence of burnout, but a significant impact on the severity of burnout in individuals with TDP. This prompted the question of whether age was a moderator with regard to severity of burnout in participants of the study without TDP. Age did not moderate the severity of burnout as determined by BMS scores in this sample population. Although individuals without TDP were the focus of this analysis, more valuable information regarding burnout for individuals with TDP is gained from the result. Researchers studying this population will be aided by knowledge that age is not a moderator for burnout, in general, but is for people with TDP. For example, there may be a need to document the exact ages at which burnout severity increases in individuals with TDP. Determining whether the changes in severity are incremental or exponential can be useful in monitoring and treatment options.

Length of Employment and Burnout Severity in TDP. There was no correlation between these two variables; neither longer nor shorter employment times consistently corresponded to higher or lower scores on the BMS. The lack of a correlation in this instance was an interesting result. There are multiple scenarios in which there would seemingly be a correlation. Individuals who work for a longer period of time in a job might be less likely to experience workplace burnout because they have been exposed the same stimuli for an extended period of time. This instance would result in a negative correlation, in which as length of employment increases, burnout severity decreases. However, that was not the case.

There is also the possibility that as individuals remain at a job, their burnout severity increases because they have endured the stressful environment for such an extended time. Although the argument could be made that if individuals experience a great deal of stress, they will change jobs, such a solution is not always viable. Therefore, an individual may be resigned to remaining in the existing environment and be more susceptible to the development of severe burnout. The latter scenario would yield a positive correlation between employment time and burnout severity. The lack of any correlation underscores the fact that there are workplace and individual differences that lead to burnout, even in individuals with TDP.

Workplace influences can be illustrated by the factors previously noted as contributors to burnout. Researchers have shown that organizational characteristics, job demands, and under-compensation lead to burnout (Angerer, 2003; Maslach et al., 2001). Individuals often rely on promotions or raises to receive additional remuneration. Such changes are often accompanied by more job demands, not fewer. Therefore, if an individual remains with a company, his or her environment will be the same. The way in which the individual deals with workplace stimuli will be a determinant of whether or not burnout develops. However, there is a greater likelihood for an individual with TDP to develop burnout in such instances due to his or her perception of the environment; the duration of tenure seems to be essentially irrelevant.

BMS and DS14 Scores for Individuals without TDP. Because the severity of burnout was positively correlated to the severity of TDP, as determined by DS14 scores, there was a question of whether this correlation also applied to individuals without TDP. All participants responded to the DS14 and received scores, regardless of whether they met the criteria for a TDP diagnosis. Thus, there was a possibility that higher DS14 scores among non-TDP individuals

could also have a correlation to higher BMS scores. According to analysis, there was indeed a relationship between scores on the BMS and DS14, regardless of TDP status. In fact, the correlation coefficients were comparable for the individuals without TDP (r=0.455) and for the participants with TDP (r=0.449). Therefore, the null hypothesis that there was no correlation between BMS and DS14 scores for the individuals without TDP was rejected.

General Discussion

There were differences in the experiences of burnout in individuals with TDP as compared to those without TDP. The sample population consisted of individuals in four basic categories: (a) individuals with both TDP and burnout; (b) individuals with TDP but no burnout; (c) individuals with burnout but no TDP; and (d) individuals with neither TDP nor burnout. An individual without TDP was not always free of burnout and in individual with TDP did not necessarily have burnout, although this was frequently the case. This was a confirmation that multiple characteristics of the individual influenced the perception of the environment and processing of stimuli. Had this not been the case, the expectation might be that all individuals with a certain characteristic would have the same outcome. That is, for example, all individuals with TDP would have burnout. The theoretical constructs of social cognitive theory (SCT) can be reviewed to explain these differences.

The general characteristics of an individual (human agency), how an individual feels about himself or herself (self-efficacy), and the changes in the behavior of the individual are the components of SCT (Bandura, 1982, 2001). Thus, SCT describes the cyclical interaction between the individual and the environment. That interaction is what was illustrated in the results of research questions one and two. Individuals with TDP were more likely to develop burnout

than individuals without TDP. As previously noted, participants with and without TDP were present in most occupational groups. Therefore, the individuals were likely exposed to similar stimuli. However, burnout occurred most often in individuals with TDP.

The components of TDP, negative affectivity and social inhibition, can be used to explain this trend. Individuals with high negative affectivity have been found to frequently report aversive conditions and interpersonal slights, even when none are present (Fortunato, 2004). People with high levels of social inhibition suppress their emotions, due to fear of being ostracized or disciplined (Grande et al., 2013). Each of these characteristics would presumably be enough to cause additional stress in an individual. The presence of these characteristics in levels high enough for a TDP classification, likely increases the susceptibility to burnout. This is an example of the innate characteristics (i.e., human agency) of the individual that impact the interaction with the environment noted in SCT and may be an explanation for the increased frequency of burnout in individuals with TDP.

The severity of burnout in individuals with TDP was also more severe than in participants without TDP. As noted before, the environments were likely similar, but the perceptions of stimuli were presumably different between these groups; the most adverse responses to the stimuli occurred in individuals with TDP. The difference in severity may be explained by the self-efficacy component of SCT, which is the view individuals have of themselves and their environment. Self-efficacy is compromised in individuals suffering from burnout, as their ability to perform or to believe themselves capable of functioning has been documented and is characterized by the inefficacy dimension of burnout (Maslach et al., 2001). Researchers have also found reduced levels of self-efficacy in individuals with TDP (Wu, Song, & Moser, 2015).

According to previous results, as self-efficacy decreases, levels of burnout increase (Aloe, Amo, & Shanahan, 2014; Servindi, 2013). Thus, burnout in individuals with TDP may be exacerbated by how they feel about themselves; that is, there is lower self-efficacy in members of this population.

Implications

Risk Assessment. The results of this study have brought forth a method to assess health risks in certain individuals. Aside from the mental problems associated with TDP and burnout, there are physical consequences, as well. TDP has been recognized as a risk factor for various conditions, including heart disease, blood pressure irregularities, and immune dysfunction (Denollet et al., 2003; Kupper & Denollet, 2007). Immune functioning, metabolism, and cardiovascular functioning are all affected by burnout (Kudielka et al., 2008; Melamed et al., 2006). Analysis of these constructs, both of which are primarily associated with mental health, can offer assistance in assessing risks for physical health consequences, as well as the emotional health of individuals.

Preventative Measures and Interventions. The results of this study can also be used in the development of preventative measures and interventions. For example, exercise has been shown to effectively moderate burnout in individuals with TDP (Armon, 2014). In addition, exercise has been shown to improve indicators of burnout (Tsai et al., 2013). Exercise is useful in maintaining both physical and mental wellbeing. Among other benefits, researchers have documented the contributions of exercise in the ability of an individual to cope with stress (Saeed, Antonacci, & Bloch, 2010). Some of the aforementioned physiological complications have also improved with regular exercise (Edenfield & Blumenthal, 2011). The results of the

current study can be used to determine the extent and frequency of exercise to effectively treat individuals with burnout and TDP.

As few as 20 minutes of aerobic exercise and 10 days of exercise have been documented to impact some of the aforementioned symptoms associated with burnout and TDP (Broman-Fulks, Berman, Rabian, & Webster 2004; Knubben et al., 2007). The results of the current study would also be useful in establishing monitoring protocols to determine the success of interventions by continuously applying the measures used and examining outcomes. Combining results of previous studies with the methods and results of the current studies would enable the development of comprehensive preventative measures and interventions for burnout in individuals with TDP.

Limitations

There were certain limitations of this study that should be acknowledged. Minimum age and employment requirements were instituted for participants. The criteria were implemented to ensure that the study population consisted of individuals who were most likely to have been continuously exposed to workplace stimuli that may lead to burnout. However, because of these constraints, the results of the study may not be applicable to individuals who are younger than 25 years of age or to those who work fewer than 30 hours outside of the home.

Recommendations

As expected, the current study results gave rise to some additional questions that may be pursued in future studies. There was also the development of some ideas that can be implemented in various arenas to either reduce the occurrence or provide treatment for burnout in individuals with TDP. Recommendations for these areas are provided in subsequent sections.

Research

Study of Severity. A positive correlation between the severity of burnout and the severity of TDP was seen in the current research, meaning that as DS14 scores increase, so do BMS scores. Determining the exact implications at various stages of severity can offer researchers more insight into individuals with TDP suffering from burnout. As previously noted, BMS scores of 3.5 and higher indicate the presence of burnout, with a need for immediate professional help for those with scores of at least 5.5 (Malach-Pines, 2005). The maximum possible score on the DS14 is 56 (Denollet, 2005). Examples from the existing data set can be used to illustrate why additional research is needed for this population.

Four participants in the current data set had the following respective DS14 and BMS scores: 28 and 3.5; 40 and 4.6; 48 and 5.1; and 55 and 6.8. According to the BMS instructions, the individual with a score of 6.8 requires immediate professional assistance, with scores close to the maximum on the respective measures. However, there are no clear indications of what could or should happen with the other three examples. There is currently no way of determining whether the participant with scores of 40 and 4.6 is in a significantly better state than the person with scores of 48 and 5.1. This distinction could impact health risks and treatment options.

Altering TDP Status. Burnout can be reduced or eliminated; there is also a possibility that TDP may be changeable. Researchers studying patients with TDP before and after heart surgery noted changes in the TDP statuses of these individuals; some patients had TDP before surgery, but not after, while the opposite happened in other patients (Dannemann et al., 2010). While the changes in TDP status were noted, there were no reasons provided for the change.

Future research can investigate how to alter the TDP status of an individual and the implications this change would have on burnout. If the severity of TDP as determined by scores on the DS14 is reduced, the severity of burnout may also be reduced. This may be useful in conjunction with or in lieu of interventions targeting burnout.

Investigation of Individuals Outside of Study Parameters. The current study did not include individuals below 25 years of age. The needs of the researcher were met by the age criteria, but there may be useful information gained from studying burnout in younger individuals with TDP. Individuals who worked fewer than 30 hours outside of the home were also omitted. Therefore, individuals who only worked part-time or worked exclusively from home were not included. Other researchers may investigate these populations, though other factors, such as whether the individual is a student or the specific type of work performed, may need to be incorporated as specific study variables.

Investigation of Females with TDP. The percentage of participants in the current study with TDP was higher than previous estimates. This may be explained, in part, by the sample characteristics in other studies. Previous TDP researchers focused on samples comprised primarily of male participants (Denollet, 1998, 2005). Females represented 59.5% of the current sample population. This could be an indication that TDP among females is widespread. Additional research is needed to determine the extent.

Investigation of individuals with TDP, but without burnout. As previously noted, there were participants in this study who had TDP, but did not have burnout. Because of the characteristics present in individuals with TDP, they are seemingly predisposed to developing burnout. However, this was not the case in some participants. Additional research may be used

to determine why some individuals with TDP did not develop burnout, whether the differences were within the individuals, due to the environment, or a combination of these factors.

Practice

Refining Treatment Options. There are numerous treatments that are employed to address burnout, including psychotherapy (Gilbert, 2008). Therapists have begun incorporating research information about the way in which the mind works into their approaches (Gilbert, 2008). The presence of TDP in an individual may be considered one of the unique mindsets that should be considered. Cognitive therapy and emotion-focused therapy are examples of psychotherapy, in which the mindset of the individual is incorporated.

In cognitive therapy, professionals address the interpretations and thoughts an individual has regarding specific situations, while emotion-focused therapists deals with the exploration and expression of certain feelings (Gilbert, 2008). These methods have been used for treatment of burnout and are also applicable to individuals with TDP, given their negative outlooks and emotional suppression. Understanding that an individual with burnout also has TDP can be valuable to a therapist when trying to find the appropriate treatment, as there is an awareness of more than one issue to be addressed.

Company Policies. Understanding the connection between burnout and TDP can enable administrators to develop policies that are more beneficial both to employees and corporations. In 2002, researchers indicated that stress-related problems cost companies approximately 42 billion dollars per year (Kalia, 2002). In addition, practitioners at the American Institute of Stress indicated that the overwhelming majority (75-90%) of physician visits were related to stress (Kalia, 2002). In the years since burnout was first conceptualized, burnout recognition and

research has steadily grown, giving some indication of the magnitude of the problem (Schaufeli, Leiter, & Maslach, 2009). By comparison, TDP is still a relatively new concept. However, the disparity in prevalence statistics between the current study (42.9%) and previous studies (13-39%) means that TDP is also a growing problem.

The reduction or elimination of certain stimuli can result in less stressful work environments. Burnout is associated with increased absences and poor workplace performance (Swider & Zimmerman, 2010). Implementing policies to reduce stimuli that lead to these occurrences would be in the best interest of the individual and the company. Such policies can include increasing the amount of control individuals have over their job responsibilities, making changes to job demands, and providing more effort-based incentives, all of which have been shown to contribute to burnout (Awa, Plaumann, & Walter, 2010). These changes can result in enhanced employee health and performance and reduce the negative economic impact of burnout on the company.

Conclusion

The relationship between burnout and TDP was examined in this study. The presence of either of these can have negative implications for individuals; the presence of both can be detrimental. According to the data, the incidences of burnout in individuals with TDP are significantly higher than in individuals without TDP. Burnout was also more severe in this population. The percentage of participants with TDP in this study was higher than previous population estimates of affected individuals. This means that potential problems may impact more of the population than initially thought. As noted in Chapter 2, there have been few studies

in which researchers have focused on both TDP and burnout. A need to address an issue and a population that appears to be expanding was made apparent by the results of the current study.

References

Ahola, K., Gould, R., Virtanen, M., Honkonen, T., Aromaa, A., & Lonnqvist, J. (2009). Occupational burnout as a predictor of disability pension: A population-based cohort study. *Occupational and Environmental Medicine, 66*(5), 284-290. doi: 10.1136/oem.2008.038935

Ahola, K., Honkonen, T., Isometsa, E., Kalimo, R., Nykyri, E., Koskinen, S.,…Lonnqvist, J. (2006). Burnout in the general population. *Social Psychiatry and Psychiatric Epidemiology, 41*(1), 11-17. doi:10.1007/s00127-005-0011-5

Allport, G. W. (1937). *Personality: A psychological interpretation.* New York, NY: Henry Holt and Company.

Aloe, A. M., Amo, L. C., & Shanahan, M.E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational Psychology Review, 26*(1), 101-126. doi: 10.1007/s10648-013-9244-0

Amadori, M., Stefanon, B., Sgorlon, S., & Farinacci, M. (2009). Immune system response to stress factors. *Italian Journal of Animal Science, 8,* 287-299. doi:10.4081/ijas.2009.s1.287

American Psychological Association (2002). *American Psychological Association ethical principles of psychologists and code of conduct.* Retrieved from http://www.apa.org/ethics/code/

Angerer, J. M. (2003). Job burnout. *Journal of Employment Counseling, 40*(3), 98-107. doi: 10.1002/j.2161-1920.2003.tb00860.x

Atkinson, W. (2004). Stress: Risk management's most serious challenge? *Risk Management, 51*(6), 20-24. Retrieved from www.rmmag.com

Armon, G. (2014). Type D personality and job burnout: The moderating role of physical activity. *Personality and Individual Differences, 58,* 112-115. doi:10.1016/j.paid.2013.10.020

Aust, F., Diedenhofen, B., Ullrich, S., & Musch, J. (2013). Seriousness checks are useful to improve data validity in online research. *Behavioral Research, 45*(2), 527-535. doi: 10.3758/s13428-012-0265-2

Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient Education and Counseling, 78*(2), 184-190. doi:10.1016/j.pec.2009.04.008

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147. doi:10.1037/0003-066X.37.2.122

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*(1), 1-26. doi:10.1146/annurev.psych.52.1.1

Bao, Y. (2013). On sample skewness and kurtosis. *Econometric Reviews, 32*(4), 415-448. doi:10.1080/07474938.2012.69665

Baragona, R., Battaglia, F., & Poli, I. (2011). Outliers. In R. Baragona, F. Battaglia, & I. Poli (Series Eds.), *Evolutionary statistical procedures* (pp. 159-197). doi:10.1007/978-3-642-16218-3_6

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and performance: A meta-analysis. *Personnel Psychology, 44*(1), 1-26. Retrieved from http://onlinelibrary.wiley.com/

Ben-Zvi, A., Vernon, S. D., & Broderick, G. (2009). Model-based therapeutic correction of hypothalamic-pituitary-adrenal axis dysfunction. *PLoS Computational Biology, 5*(1), e1000273. doi:10.1371/journal.pcbi.1000273

Blatt, S. J., & Levy, K. N. (2003). Attachment theory, psychoanalysis, personality development, and psychopathology. *Psychoanalytic Inquiry, 23*(1), 102-150. Retrieved from http://www.tandfonline.com

Bowlby, J. (1969). *Attachment and loss, Vol. 1: Attachment*. New York, NY: Basic Books.

Bowlby, J. (1977). The making and breaking of affectional bonds: I. Aetiology and psychopathology in the light of attachment theory. *The British Journal of Psychiatry, 130*, 201-210. doi:10.1192/bjp.130.3.201

Breso, E., Salanova, M., & Schaufeli, W. B. (2007). In search of the "third dimension" of burnout: Efficacy or inefficacy? *Applied Psychology, 56*(3), 460-478. doi:10.1111/j.1464-0597.2007.00290.x

Broman-Fulks, J. J., Berman, M. E., Rabian, B. A., & Webster, M. J. (2004). Effects of exercise on anxiety sensitivity. *Behaviour Research and Therapy, 42*, 125-136. doi:10.1016/S0005-7967(03)00103-7

Bultmann, U., Christensen, K. B., Burr, H., Lund, T., & Rugulies, R. (2008). Severe depressive symptoms as predictor of disability pension: A 10-year follow-up study in Denmark. *European Journal of Public Health, 18*(3), 232-234. doi: 10.1093/eurpub/ckm132

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159. doi: 10.1037/0033-2909.112.1.155

Cooley, K., Szczurko, O., Perri, D., Mills, E. J., Bernhardt, B., Zhou, Q., & Seely, D. (2009). Naturopathic care for anxiety: A randomized controlled trial ISRCTN78958974. *PLoS ONE, 4*(8), e6628. doi:10.1371/journal.pone.0006628

Cooper, C. L., Dewe, P. J., & O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications.* Thousand Oaks, CA: Sage.

Costa, P., & McCrae, R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five Factor Inventory (NEO-FFI) professional manual.* Odessa, FL: PAR.

Cote, S., & Moskowitz, D. S. (1998). On the dynamic covariation between interpersonal behavior and affect: Prediction from neuroticism, extraversion, and agreeableness. *Journal of Personality and Social Psychology, 75*(4), 1032-1046. doi:10.1037/0022-3514.75.4.1032

Dallman, M. F., & Hellhammer, D. (2011). Regulation of the hypothalamo-pituitary-adrenal axis, chronic stress, and energy: The role of brain networks. In R. J. Contrada & A. Baum (Eds.), *The handbook of stress science: Biology, psychology, and health* (pp. 11–36). New York, NY: Springer Publishing Company.

Dannemann, S., Matschke, K., Einsle, F., Smucker, M. R., Zimmermann, K., Joraschky, P.,…Kollner, V. (2010). Is type-D a stable construct? An examination of type-D personality in patients before and after cardiac surgery. *Journal of Psychosomatic Research, 69*(2), 101-109. doi:10.1016/j.jpsychores.2010.02.008

De Fruyt, F., & Denollet, J. (2002). Type D personality: A five-factor model perspective. *Psychology & Health, 17*(5), 671-683. doi:10.1080/08870440290025858

Denollet, J. (1991). Negative affectivity and repressive coping: Pervasive influence on self-reported mood, health, and coronary-prone behavior. *Psychosomatic Medicine, 53*(5), 538-556. Retrieved from http://www.psychosomaticmedicine.org/

Denollet, J. (1998). Personality and coronary heart disease: The type-D scale-16 (DS16). *Annals of Behavioral Medicine, 20*(3), 209-215. Retrieved from http://www.springer.com

Denollet, J. (2000). Type D personality: A potential risk factor refined. *Journal of Psychosomatic Research, 49*(4), 255-266. doi:10.1016/S0022-3999(00)00177-X

Denollet, J. (2005). DS14: Standard assessment of negative affectivity, social inhibition, and Type D personality. *Psychosomatic Medicine, 67,* 89-97. doi: 10.1097/01.psy.0000149256.81953.49

Denollet, J. (2013). Interpersonal sensitivity, social inhibition, and Type D personality: How and when are they associated with health? Comment on Marin and Miller (2013). *Psychological Bulletin, 139*(5), 991-997. doi:10.1037/a0033537

Denollet, J., Conraads, V. M., Brutsaert, D. L., De Clerck, L. S., Stevens, W. J., & Vrints, C. J. (2003). Cytokines and immune activation in systolic heart failure: The role of Type D personality. *Brain, Behavior, and Immunity, 17*(4), 304-309. doi:10.1016/S0889-1591(03)00060-6

Denollet, J., Gidron, Y., Vrints, C. J., & Conraads, V. M. (2010). Anger, suppressed anger, and risk of adverse events in patients with coronary artery disease. *The American Journal of Cardiology, 105*(11), 1555-1560. doi:10.1016/j.amjcard.2010.01.015

Denollet, J., Sys, S. U., & Brutsaert, D. L. (1995). Personality and mortality after myocardial infarction. *Psychosomatic Medicine, 57*(6), 582-591. Retrieved from http://www.psychosomaticmedicine.org/

Denollet, J., Vaes, J., & Brutsaert, D. L. (2000). Inadequate response to treatment in coronary heart disease: Adverse effects of Type D personality and younger age on 5-year prognosis and quality of life. *Circulation, 102*(6), 630-635. doi: 10.1161/01.CIR.102.6.630

Dickstein, L. (2000). Gender differences in mood and anxiety disorders: From bench to bedside. *The American Journal of Psychiatry, 157*(7), 1186-1187. doi: 10.1176/appi.ajp.157.7.1186

Dinarello, C. A. (2000). Proinflammatory cytokines. *Chest, 118*(2), 503-508. doi:10.1378/chest.118.2.503

Doric, D., Nkiolic-Doric, E., Jevremovic, V., & Malisic, J. (2009). On measuring skewness and kurtosis. *Quality and Quantity, 43*(3), 481-493. doi:10.1007/s11135-007-9128-9

Dubayova, T., Nagyova, I., Havlikova, E., Rosenberger, J., Gdovinova, Z., Middel, B.,…, Groothoff, J. W. (2009). The association of type D personality with quality of life in patients with Parkinson's disease. *Aging & Mental Health, 13*(6), 905-912. doi: 10.1080/13607860903046529

Edenfield, T. M., & Blumenthal, J. A. (2011). Exercise and stress reduction. In E. J. Contrada, & A. Baum (Eds.), *The handbook of stress science: Biology, psychology, and health* (pp. 301-319). New York, NY: Springer Publishing.

Eysenck, H. J. (1967). *The biological basis of personality.* Springfield, IL: Thomas.

Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and moderation effects. *Prevention Science, 10*(2), 87-99. doi: 10.1007/s11121-008-0109-6

Fortunato, V. J. (2004). A comparison of the construct validity of three measures of negative affectivity. *Educational and Psychological Measurement*, *64*(2), 2716-289. doi: 10.1177/0013164403258454

Fortunato, V. J., & Harsh, J. (2006). Stress and sleep quality: The moderating role of negative affectivity. *Personality and Individual Differences, 41*(5), 825-836. doi: 10.1016/j.paid.2006.03.024

Freudenberger, H. J. (1975). The staff burn-out syndrome in alternative institutions. *Psychotherapy: Theory, Research & Practice, 12*(1), 73-82. doi:10.1037/h0086411

Friedman, M., & Rosenman, R. H. (1959). Association of specific overt behavior pattern with blood and cardiovascular findings: Blood cholesterol level, blood clotting time, incidence of arcus senilis, and clinical coronary artery disease. *Journal of American Medical Association, 169*(12), 1286-1296. doi:10.1001/jama.1959.03000290012005

Funder, D. C. (2001). Personality. *Annual Review of Psychology, 52*, 197-221. doi: 10.1146/annurev.psych.52.1.197

Gest, S. D. (1997). Behavioral inhibition: Stability and associations with adaptation from childhood to early adulthood. *Journal of Personality and Social Psychology, 72*(2), 467-475. doi:10.1037/0022-3514.72.2.467

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology Metabolism, 10*(2), 486-489. doi:10.5812/ijem.3505

Ghorpade, J., Lackritz, J., & Singh, G. (2007). Burnout and personality: Evidence from academia. *Journal of Career Assessment, 15*(2), 240-256. doi:10.1177/1069072706298156

Gilbert, P. (2008). Psychotherapies. *Medicine, 36*(9), 496-498. doi:10.1016/j.mpmed.2008.06.013

Godbout, J. P., & Glaser, R. (2006). Stress-induced immune dysregulation: Implication for wound healing, infectious disease and cancer. *Journal of Neuroimmune Pharmacology, 1,* 421-427. doi:10.1007/s11481-006-9036-0

Golembiewski, R. T., Hilles, R., & Daly, R. (1987). Some effects of multiple OD interventions on burnout and work site features. *The Journal of Applied Behavioral Science, 23*(3), 295-313. doi:10.1177/002188638702300302

Golembiewski, R. T., Boudreau, R. A., Munzenrider, R. F., & Luo, H. (1996). *Global burnout: A worldwide pandemic explored by the phase model.* Greenwich, CT: JAI Press.

Gomez, R., Gomez, A., & Cooper, A. (2002). Neuroticism and extraversion as predictors of negative and positive emotional information processing: Comparing Eysenck's, Gray's, and Newman's theories. *European Journal of Personality, 16*(5), 333-350. doi:10.1002/per.459

Grande, G., Romppel, M., Michal, M., & Brahler, E. (2013). The Type D construct: Is social inhibition more than social fear? *European Journal of Psychological Assessment,* Advance online publication. doi:10.1027/1015-5759/a000189

Gray, J. A. (1970). The psychophysiological basis of introversion-extraversion. *Behaviour Research and Therapy, 8*(3), 249-266. doi:10.1016/0005-7967(70)90069-0

Grossi, G., Perski, A., Evengard, B., Blomkvist, V., & Orth-Gomer, K. (2003). Physiological correlates of burnout among women. *Journal of Psychosomatic Research, 55*(4), 309-316. doi:10.1016/S0022-3999(02)00633-5

Hallsten, L., Voss, M., Stark, S., Josephson, M., & Vingard, E. (2011). Job burnout and job wornout as risk factors for long-term sickness absence. *Work, 38*(2), 181-192. doi: 10.3233/WOR-2011-01120

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis.* New York, NY: Guilford Press.

Hayes, A. F. (2015). *Hacking PROCESS to estimate a simple moderation model with a three-category moderator*. Unpublished white paper, Department of Psychology, The Ohio State University, Columbus, OH.

Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods, 41*(3), 924-936. doi:10.3758/BRM.41.3.924

Hills, P., & Argyle, M. (2001). Happiness, introversion-extraversion and happy introverts. *Personality and Individual Differences, 30*(4), 595-608. doi:10.1016/S0191-8869(00)00058-1

Hoaglin, D. C., & Iglewicz, B. (1987). Fine-tuning some resistant rules for outlier labeling. *Journal of the American Statistical Association, 82*(400), 1147-1149. doi:10.2307/2289392

Hoaglin, D. C., Iglewicz, B., & Tukey, J. W. (1986). Performance of some resistant rules for outlier labeling. *Journal of the American Statistical Association, 81*(396), 991-999. doi:10.2307/2289073

Hough, L. M., & Oswald, F. L. (2000). Personnel selection: Looking toward the future – remembering the past. *Annual Review of Psychology, 51,* 631-664. doi: 10.1146/annurev.psych.51.1.631

Johnsen, K., Espnes, G. A., & Gillard, S. (1998). The associations between Type AB behavioural dimension and Type 2/4 personality patterns. *Personality and Individual Differences, 25,* 937-945. doi:10.1016/S0191-8869(98)00092-0

Jost, S., Quillay, H., Reardon, J., Peterson, E., Simmons, R. P., Parry, B. A.,…, Altfeld, M. (2011). Changes in cytokine levels and NK cell activation associated with influenza. *PLoS One, 6*(9), 1-9. doi:10.1371/journal.pone.0025060

Julkunen, J., Idanpaan-Heikkila, U., & Saarinen, T. (1993). Components of Type A behavior and the first-year prognosis of a myocardial infarction. *Journal of Psychosomatic Research, 37*(1), 11-18. doi:10.1016/0022-3999(93)90119-Z

Kagan, J. (1989). Temperamental contributions to social behavior. *American Psychologist, 44*(4), 668-674. doi: 10.1037/0003-066X.44.4.668

Kalia, M. (2002). Assessing the economic impact of stress: The modern day hidden epidemic. *Metabolism, 51*(6), 49-53. doi:10.1053/meta.2002.33193

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin, 118*(1), 3-34. doi:10.1037/0033-2909.118.1.3

Klatt, M. D., Buckworth, J., & Malarkey, W. B. (2009). Effects of low-dose mindfulness-based stress reduction (MBSR-Id) on working adults. *Health Education & Behavior, 36*(3), 601-614. doi: 10.1177/1090198108317627

Knubben, K., Reischies, F.M., Adli, M., Schlatmann, P., Bauer, M., & Dimeo, F. (2007). QA randomized, controlled study of the effects of a short-term endurance training programme in patients with major depression. *British Journal of Sports Medicine, 41*, 29-33. doi:10.1136/bjsm.2006.030130

Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192-207. doi:10.1080/02678370500297720

Kudielka, B. M., Bellingrath, S., & Von Kanel, R. (2008). Circulating fibrinogen but not D-dimer level is associated with vital exhaustion in school teachers. *Stress, 11*(4), 250-258. doi: 10.1080/10253890701714831

Kupper, N., & Denollet, J. (2007). Type D personality as a prognostic factor in heart disease: Assessment and mediating mechanisms. *Journal of Personality Assessment, 89*(3), 265-276. doi: 10.1080/00223890701629797

Kupper, N., & Denollet, J. (2013). Type D personality is associated with social anxiety in the general population. *International Journal of Behavioral Medicine.* Advance online publication. doi:10.1007/s12529-013-9350-x

Kupper, N., Denollet, J., de Geus, E.J.C., Boomsma, D. I., & Willemsen, G. (2007). Heritability of Type-D personality. *Psychosomatic Medicine, 69*(7), 675-681. doi:10.1097/PSY.0b013e318149f4a7

Lemyre, P., Hall, H. K., & Roberts, G. C. (2008). A social cognitive approach to burnout in elite athletes. *Scandinavian Journal of Medicine & Science in Sports, 18*(2), 221-234. doi:10.1111/j.1600-0838.2007.00671.x

Lindblom, K. M., Linton, S. J., Fedeli, C., & Bryngelsson, I. (2006). Burnout in the working population: Relations to psychosocial work factors. *International Journal of Behavioral Medicine, 13*(1), 51-59. doi:10.1207/s15327558ijbm1301_7

Lindstrom, C., Aman, J., & Norberg, A. L. (2010). Increased prevalence of burnout symptoms in parents of chronically ill children. *Acta Paediatrica, 99*(3), 427-432. doi: 10.1111/j.1651-2227.2009.01586.x

Lisha, N. E., Martens, M., & Leventhal, A. M. (2011). Age and gender as moderators of the relationship between physical activity and alcohol use. *Addictive Behaviors, 36*(9), 933-936. doi: 10.1016/j.addbeh.2011.04.003

Malach-Pines, A. (2005). The Burnout Measure, Short Version. *International Journal of Stress Management, 12*(1), 78-88. doi:10.1037/1072-5245.12.1.78

Martin, L. A., Doster, J. A., Critelli, J. W., Purdum, M., Powers, C., Lambert, P. L., & Miranda, V. (2011). The 'distressed' personality, coping and cardiovascular risk. *Stress & Health, 27*(1), 64-72. doi:10.1002/smi.1320

Maslach, C. (1976). Burned-out. *Human Behavior, 5*(9), 16-22.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52,* 397-422. doi:10.1146/annurev.psych.52.1.397

McGrandles, A., & McCaig, M. (2010). Diagnosis and management of anxiety in primary care. *Nurse Prescribing, 8*(7), 310-318. Retrieved from http://www.internurse.com

McLennan, J., Buchanan, J. I., & Bates, G. W. (1994). Neuroticism and negative affect measures as predictors of psychological distress. *Psychological Reports, 75*(1), 305-306. doi: 10.2466/pr0.1994.75.1.305

Meier, S. T. (1983). Toward a theory of burnout. *Human Relations*, *36*(10), 899-910. doi: 10.1177/001872678303601003

Melamed, S., Shirom, A., Toker,, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin, 132*(3), 327-353. doi:10.1037/0033-2909.132.3.327

Miller, M. C., MacDonald, A., & Perch, K. (2011). Generalized anxiety disorder: People who worry about everything – and nothing in particular – have several treatment options. *Harvard Mental Health Letter, 27*(12), 1-4. Retrieved from http://www.health.harvard.edu

Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review, 102*(2), 246-268. doi:10.1037/0033-295X.102.2.246

Mittleman, M. A., Maclure, M., Sherwood, J. B., Mulry, R. P., Tofleer, G. H., Jacobs, S. C.,…Muller, J. E. (1995). Triggering of acute myocardial infarction onset by episodes of anger. *Circulation, 92*, 1720-1725. doi:10.1161/01.CIR.92.7.1720

Moksnes, U. K., & Espnes, G. A. (2012). Self-esteem and emotional health in adolescents-gender and age as a potential moderators. *Scandinavian Journal of Psychology*, *53*(6), 483-489. doi: 10.1111/sjop.12021

Mommersteeg, P. M. C., Denollet, J., & Martens, E. J. (2012). Type D personality, depressive symptoms, and work-related health outcomes. *Scandinavian Journal of Public Health, 40*, 35-42. doi: 10.1177/1403494811421533

Murphy, S. E. (2010). Using functional neuroimaging to investigate the mechanisms of selective serotonin reuptake inhibitors (SSRIs). *Current Pharmaceutical Design, 16,* 1990-1997. doi: 10.2174/138161210791293051

O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity, 41*(5), 673-690. doi:10.1007/s11135-006-9018-6

Oginska-Bulik, N. (2006). Occupational stress and its consequences in healthcare professionals: The role of Type D personality. *International Journal of Occupational Medicine & Environmental Health, 19*(2), 113-122. doi:10.2478/v10001-006-0016-7

Olivia, B., & Ilie, P. (2013). A model to minimize multicollinearity effects. *Annals of the University of Oradea, Economic Science Series, 22*(1), 699-706. Retrieved from www.anale.steconomiceuoradea.ro/en

Oztuna, D., Elhan, A. H., & Tuccar, E. (2006). Investigation of four different normality tests in terms of type I error rate and power under different distributions. *Turkish Journal of Medical Sciences, 36*(3), 171-176. Retrieved from www.journals.tubitak.gov/tr/medical

Pines, A. M., & Aronson, E. (1998). *Career burnout*. New York, NY: Free Press.

Plonsky, L., & Oswald, F. L. (2014). How big is "big"? Interpreting effect sizes in L2 research. *Language Learning, 64*(4), 878-912. doi:10.1111/lang.12079

Polman, R., Borkoles, E., & Nicholls, A. R. (2010). Type D personality, stress, and symptoms of burnout: The influence of avoidance coping and social support. *British Journal of Health Psychology, 15*, 681-696. doi: 10.1348/135910709X479069

Ragland, D. R., & Brand, R. J. (1988). Type a behavior and mortality from coronary heart disease. *New England Journal of Medicine, 318*, 65-69. doi: 10.1056/NEJM198801143180201

Rapee, R. M., Schniering, C. A., & Hudson, J. L. (2009). Anxiety disorders during childhood and adolescence: Origins and treatment. *Annual Review of Clinical Psychology, 5*, 311-341. doi:10.1146/annurev.clinpsy.032408.153628

Reips, U. (2002). Standards for internet-based experimenting. *Experimental Psychology, 49*(4), 243-256. doi: 10.1027//1618-3169.49.4.243

Reips, U. (2009). Internet experiments: Methods, guidelines, meta-data. *Human Vision and Electronic Imaging XIV, Proceedings of SPIE, 7240*, 724008.

Reti, I. M., Samuels, J. F., Eaton, W. W., Bienvenu III, O. J., Costa Jr., P. T., & Nestadt, G. (2002). Influences of parenting on normal personality traits. *Psychiatry Research, 111*(1), 55-64. doi:10.1016/S0165-1781(02)00128-2

Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: A meta-analysis. *Journal of Occupational Health Psychology, 13*(1), 69-93. doi:10.1037/1076-8998.13.1.69

Robinson, M. D., Meier, B. P., Wilkowski, B. M., & Ode, S. (2007). Introversion, inhibition, and displayed anxiety: The role of error reactivity processes. *Journal of Research in Personality, 41*(3), 558-578. doi:10.1016/j.jrp.2006.06.007

Rubino, C., Volpone, S. D., & Avery, D. R. (2013). Burnout on Mars and Venus: Exploring gender differences in emotional exhaustion. *Gender in Management: An International Journal, 28*(2), 74-93. doi:10.1108/17542411311303220

Saeed, S. A., Antonacci, D. J., & Bloch, R. M. (2010). Exercise, yoga, and meditation for depressive and anxiety disorders. *American Family Physician, 81*(8), 981-986. Retrieved from http://www.aafp.org/journals.html

Salmela-Aro, K., & Tynkkynen, L. (2012). Gendered pathways in school burnout among adolescents. *Journal of Adolescence, 35*(4), 929-939. doi:10.1016/j.adolescence.2012.01.001

Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International, 14*(3), 204-220. doi:10.1108/13620430910966406

Sedgwick, P. (2011). The Hawthorne effect. *BMJ, 344*, d8262. doi:10.1136/bmj.d8262

Servindi, T. (2013). The relationship between general self-efficacy belief and burnout level among Turkish academicians. *Educational Research and Reviews, 8*(24), 2255-2259. doi:10.5897/ERR2013.1649

Sharma, P., Chen, I. S. N., & Luk, S. T. K. (2012). Gender and age as moderators in the service evaluation process. *Journal of Services Marketing, 26*(2), 102-114. doi: 10.1108/08876041211215266

Spielberger, C. D. (1988). *Manual for the state trait anger expression inventory*. Odessa, FL: PAR.

Stanetic, K., & Tesanovic, G. (2013). Influence of age and length of service on the level of stress and burnout syndrome. *Medicinski Pregled, 66*(3-4), 153-162. doi:10.2298/MPNS1304153S

Steen, R. G. (1996). *DNA and destiny: Nature and nurture in human behavior.* New York, NY: Plenum Press.

Suls, J., & Bunde, J. (2005). Anger, anxiety, and depression as risk factors for cardiovascular disease: The problems and implications of overlapping affective dispositions. *Psychological Bulletin, 131*(2), 260-300. doi: 10.1037/0033-2909.131.2.260

Svansdottir, E., Karlsson, H. D., Gudnason, T., Olason, D. T., Thorgilsson, H., Sigtryggsdottir, U.,…Denollet, J. (2012). Validity of Type D personality in Iceland: Association with disease severity and risk markers in cardiac patients. *Journal of Behavioral Medicine, 35*(2), 155-166. doi:10.1007/s10865-011-9337-5

Swider, B. W., & Zimmerman, R. D. (2010). Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *Journal of Vocational Behavior, 76*(3), 487-506. doi:10.1016/j.jvb.2010.01.003

Taris, T. W., Le Blanc, P. M., Schaufeli, W. B., & Schreurs, P. J. G. (2005). Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests. *Work & Stress, 19*(3), 238-255. doi: 10.1080/02678370500270453

Taris, T. W., Stoffelsen, J., Bakker, A. B., Schaufeli, W. B., & van Dierendonck, D. (2005). Job control and burnout across occupations. *Psychological Reports, 97*(3), 955-961. doi:10.2466/pr0.97.3.955-961

Timoshin, N. (2012). Tips on avoiding burnout. *Psychiatric Times, 29*(7), 11. Retrieved from www.psychiatrictimes.com

Tsai, H. H., Yeh, C. Y., Su, C. T., Chen, C. J., Peng, S. M., & Chen, R. Y. (2013). The effects of exercise program on burnout and metabolic syndrome components in banking and insurance workers. *Industrial Health, 51*(3), 336-346. doi:10.2486/indhealth.2012-0188

U. S. Department of Labor, Bureau of Labor Statistics. (2014). Labor force statistics from the current population survey. Retrieved from http://www.bls.gov/

U. S. Census Bureau. (2011). *Age and sex composition: 2010.* Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf

Van den Broek, K. C., Smolderen, K. G., Pedersen, S. S., & Denollet, J. (2010). Type D personality mediates the relationship between remembered parenting and perceived health. *Psychosomatics, 51*(3), 216-224. doi:10.1016/S0033-3182(10)70688-5

Watson, D. (2001). Neuroticism. In N. J. Smelser & P. B. Baltes (eds.) *International encyclopedia of the social & behavioral sciences* (pp. 10609-10612). Oxford, England: Elsevier Science, Ltd.

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*(3), 465-490. doi:10.1037/0033-2909.96.3.465

Watson, D., & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five factor model. *Journal of Personality, 60*(2), 441-476. doi:10.1111/j.1467-6494.1992.tb00980.x

Watson, D., Clark, L. A., & Harkness, A. R. (1994). Structures of personality and their relevance to psychopathology. *Journal of Abnormal Psychology, 103*(1), 18-31. doi:10.1037/0021-843X.103.1.18

Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review, 96*(2), 234-254. doi: 10.1037/0033-295X.96.2.234

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*(2), 219-235. doi:10.1037/0033-2909.98.2.219

Weinberger, D. A., Schwartz, G. E., & Davidson, R. J. Low-anxious, high-anxious and repressive coping styles: Psychometric patterns and behavioral and physiological responses to stress. *Journal of Abnormal Psychology*, *88*(4), 369-380. doi:10.1037/0021-843X.88.4.369

Widiger, T. A. (2011). Personality and psychopathology. *World Psychiatry, 10*, 103-106. Retrieved from http://www.world-psychiatry.com/

Wilkowski, B. M., & Robinson, M. D. (2010). The anatomy of anger: An integrative cognitive model of trait anger and reactive aggression. *Journal of Personality, 78*(1), 9-38. doi: 10.1111/j.1467-6494.2009.00607.x

Wu, J., Song, E. K., & Moser, D. K. (2015). Type D personality, self-efficacy, and medication adherence in patients with heart failure – A mediation analysis. *Heart & Lung*, *44*(4), 276-281. doi:10.1016/j.hrtlng.2015.02.006

Appendix A: Informed Consent

CONSENT FORM

You are invited to take part in a research study exploring burnout and Type D Personality, which is a personality type associated with health risks. The researcher, Carla Kelly, is a doctoral student at Walden University. She is inviting a representative sample of adults at least 25 years old who work a minimum of 30 hours per week outside the home to participate in this study. The purpose of this study is to examine whether there are differences in burnout in people with and without this personality type. The minimum age for participation is intended to increase the possibility of obtaining participants who have been employed for an extended period of time. The minimum number of hours worked outside of the home is to ensure that participants have been exposed to workplace stimuli that may potentially lead to burnout. This information may help in future attempts to provide assistance to these individuals.

This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part. This study is a survey design. If you agree to participate, you will be asked to:

- Read 14 statements and rate them on a scale of 0 to 4 to determine if you have Type D Personality.
- Read 10 words/phrases and rate them on a scale of 1 to 7 to determine if you are experiencing burnout.
- Answer demographic questions about yourself.
- The entire survey should take no more than 10 minutes to complete.

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time by simply closing the survey prior to completing it. Participating in this study would not pose any risk to your well-being or safety. By agreeing to be in this study, you will be assisting the researcher in examining the relationship between burnout and Type D Personality. Payment directly from the researcher to be in this specific study is not available. However, it is our understanding that as a member of SurveyMonkey Audience, a charity of your choice will receive a donation from SurveyMonkey in the amount of $0.50 upon completion of this survey.

Any information you provide will be kept anonymous; therefore, no personal information linked to your identity will be collected. There will be no information that could identify you in the study reports. Data will be kept secure by Carla Kelly on a password-protected computer. Again, only statistical information will be retained, with no information identifying individual participants. Data will be kept for a period of at least 5 years, as required by the university.

If you have any questions, you may contact the researcher via email at carla.kelly@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, ext. 3121210. Walden University's approval number for this study is 03-31-15-0257735 and it expires March 30, 2016.

Please print or save this page containing your consent form for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By clicking NEXT, I am stating that I am at least 25 years of age and I work at least 30 hours per week outside the home. I agree to the terms described above and I am agreeing to participate

in this study. (If you do not wish to participate, simply click the X in your browser to close the survey without pressing next.)