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Burnout

Its Relationship to Stress and Individual Susceptibilities

Graduate thesis in Clinical Psychology
Supervisor: Alexander Olsen

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Preface

During my studies I developed an interest in theories of stress because I thought they clearly illustrated how our emotions affect our bodies, thus integrating psychology and biology. Since then I have met several patients with symptoms of burnout who said that they have had a high stress-level over many years. I have also met stressed young patients who put very high demands on themselves. I wanted to learn more about individual differences in the appraisal and coping with stress, hence, the topic of this thesis.

I would like to thank Jørgen for all the support.

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Abstract

Burnout is a clinical phenomenon characterized by the symptoms of emotional exhaustion, depersonalization towards work and clients, as well as diminished professional efficacy. It is considered a consequence of long-term work-related stress. Most research have revealed the influence of contextual factors in burnout, such as workload, time pressure, client contact, shift work etc. In addition, is has been recognized that individuals in helping professions in particular, are at risk for experiencing burnout. However, not everyone becomes burned out under similar conditions. If the size and type of external stressors are constant, then the variance in stress responses must be explained by individual differences in stress susceptibility. In the present thesis, the overarching aim was to review the etiology of burnout, with regard to its relationship to stress and individual susceptibilities. To this end, I searched the literature for relevant data sources. The data was categorized into meaningful components which allowed me to evaluate the major trends in the data set. Here, I found three major determinants in the stress response and the subsequent risk for burnout, that is, physiological differences in stress reactivity and differences in appraisal and coping. These determinants were found to be in large part dependent upon the individual´s interpretation of what is at stake, their bio-psycho-social resources (e.g., good health, problem-solving skills, emotional intelligence, self-esteem, social support) and how well these resources can be implemented in a sustainable manner over time. Resources that contribute to perceived control, meaning and mastery can protect against burnout.

1. INTRODUCTION

"If you own a car, you have it inspected each year and you check the oil regularly. Burnout-syndrome patients never bring their 'cars' in for inspection. They drive thousands of miles at full speed and then are shocked when the motor suddenly fails. They have been neglecting routine maintenance." - Psychiatrist Juergen Staedt

The term "burnout" was coined by Freudenberger in the 1970s. It was conceptualized as a work-related depletion of energy in individuals working in helping professions (i.e., a profession that nurtures an individual's physical, psychological, intellectual or spiritual well-being, e.g., physicians, therapists, nurses, teachers, priests, etc.). Since then, the term has evolved and been redefined by others. Cherniss was among the first to see burnout as a process that evolves over time. He defined burnout as "a process in which the professional`s attitudes and behavior change in negative ways in response to job strain" (Cherniss, 1980, p. 5). Moreover, he considered excessive job demands combined with unfavorable coping characterized by withdrawal and avoidance as the cause of professional burnout (Cherniss, 1980).

Maslach and co-workers expanded the definition further and developed a psychometric instrument for measuring burnout in the 1980s, the Maslach Burnout Inventory (MBI) (Maslach, Jackson & Leiter, 1996), which became the most frequently used inventory (Maslach, Schaufeli & Leiter, 2001). They also provided the most influential definition of burnout, i.e., "a prolonged response to chronic emotional and interpersonal stressors on the job", characterized by the symptoms of emotional exhaustion, depersonalization and reduced professional efficacy (Maslach et al., 2001, pg. 1). *Emotional exhaustion*, which is considered to be the core component of burnout (Maslach et al., 2001), refers to the depletion of positive emotions towards the recipients of one's services. *Depersonalization* entails a distancing of oneself cognitively and emotionally from tasks and clients. Whereas *Reduced professional efficacy* refers to the tendency to evaluate oneself and one's work in a negative way, including self-appraisals of being ineffective, incompetent or inadequate for the job.

The development of psychometric instruments, the MBI in particular, made it possible to study burnout systematically, which resulted in an increased number of published articles. The majority of research has focused on contextual risk factors that may contribute to burnout in everyone (Kremer, Hayon, & Kurtz, 1985; Leiter & Maslach, 1999; Skaalvik, & Skaalvik, 2009). For instance, Demerouti and co-workers, developed the job demands-resources (JD-R)

model which suggests that job demands (e.g., physical workload, time pressure, client contact, physical environment, shift work) and job resources (e.g. feedback, rewards, job control, participation, job security, supervisor support) are related to different components of burnout. They stated that high demands lead to constant overtaxing and eventually to exhaustion, whereas limited resources make it difficult to meet the demands and lead to withdrawal and eventually disengagement from work, perhaps in order to limit the drainage of energy. Accordingly, they found that burnout occurs in environments characterized by both high demands and limited resources (Demerouti, Nachreiner, Bakker & Schaufeli, 2001), a result also previously found by others (Leiter, 1991).

The interaction between individual and contextual factors has also been studied. Maslach and co-workers looked at misalignment between the individual and their work in six different domains: workload, the experience of control over their work, economic and social rewards, belonging to and connection with a social community, experience of fairness and values. They found that burnout arises from a chronic mismatch between individuals and their work environments in terms of some or all of these domains, and that the greater the mismatch, the greater the likelihood of burnout (Maslach et al., 2001). In accordance with Maslach and co-workers, burnout has been studied as the relationship between chronic demands at work and the individuals' ability to handle these demands. A misalignment between effort and expected gains from the effort was revealed as central for the development of burnout (Richardsen, 2002).

If the size and type of external stressors are constant, then the variance in stress responses must be explained by individual differences in stress susceptibility. In fact, studies of burnout have consistently found substantial inter-individual variations in experienced burnout within a particular work setting (Leiter and Maslach, 1988; Golembiewski and Munzenrider, 1988). For instance, Pines observed that burnout mainly affected highly motivated, idealistic individuals working in helping professions (Pines, 2002). Pines argued that motivated individuals who expect their work to be significant are more susceptible to burnout. In comparison, individuals without these expectations could experience job stress as well, yet not become burned out. The individual thus interacts with the environment in unique ways depending on the individual's appraisal, their personality, their views on the world, coping strategies, and other factors. These unique interactions likely account for the some of the variation in burnout among individuals in similar professional circumstances. Hence, as

formulated by Lazarus and Launier: "A situation will be reacted to as a threat by one person, a challenge by another, and mostly irrelevant by a third" (Lazarus & Launier, 1978, pg. 294).

Moreover, the fact that burnout is more prevalent in helping professions, indicates that it is a relational phenomenon. The relationship between the provider and the client is the core of the work. Pupils, patients and customers of different kinds, often require ongoing close emotional and personal contact. This type of interpersonal closeness and emotional intensity can be demanding and stressful for the provider. For instance, the customer-oriented view that "the client is always right" is influential within the field of health care. At least, the patients must be respected, understood and cared for, even the obnoxious ones. Thus, helping professionals are expected to be emotionally present, yet professional, which places high demands on the individual's ability to regulate emotions constructively (Tei et al., 2014). In fact, Jackson and colleagues observed that burnout occurs when helping professionals become overly emotionally involved in interactions with clients (Jackson et al, 1986). Buunk and Schaufeli (Buunk & Schaufeli, 1993) noted that caregivers often feel as though they invest more in relationships with clients than is reciprocated, and suggested that feelings of inequity in social exchange relationships may be associated with burnout. This, was, in fact, confirmed in later studies (Van Dierendonck, Schaufeli & Buunk, 2001; Bakker, Schaufeli, Sixma, Bosveld, & van Dierendonck, 2000). Perhaps, in helping professions, in particular, it is felt more difficult (perhaps even unethical) to set personal health-promoting boundaries when the recipient of one's service is a suffering person. The stress helping professionals experience is also indicated in elevated suicide rates (Physicians: Schernhammer & Colditz, 2004, Psychologists: Steppacher & Mausner, 1974, Social workers: Stack, 2001).

Although the term "burnout" was coined in the 1970s, similar cases where exhaustion is a key component of a syndrome have been observed earlier, such as in neurasthenia. Beard described neurasthenia in 1869, as a disease of profound fatigability of both body and mind. He understood it as an illness caused by the accelerated pace of modern life in the USA (Beard, 1869). Similarly, in Europe Kraeplin ascribed neurasthenia to "rapid, irregular and extravagant manner of living… in individuals actively engaged in business" (Wessely, 1990, pg. 43). Beard thought that this fast-paced lifestyle put excessive demands on peoples' brains, causing a weakening and depletion of their nerve force. This manifested itself in a severe debilitating mental and physical fatigue arising after minimal effort. Similar to burnout, neurasthenia has been understood as resulting from "overload" when "demand exceed

supply" (Wessely, 1990, pg. 43). Rabinbach observed that fatigue occurred in professions demanding a lot of devotion to the task or where a high degree of emotional pressure was put on the worker. He thought the main cause of fatigue was the drive to succeed (Wessely, 1990).

The interest in neurasthenia began to decline after it shifted from being viewed as having a medical origin to having a psychological origin. It proved to be too comprehensive to be divided into more specific categories (Wessely, 1990). Its causes were also unclear, because in addition to mental overload (such as having a demanding job), neurasthenia was also seen as the result of physical overload, such as a prolonged viral infection, as proposed by Beard. Fatigue related to work was later placed within the psychological, environmental and organizational field, where it crystallized into the term burnout. Meanwhile, fatigue related to somatic causes, was placed within the field of immunology and virology, where it crystallized into the term Chronic Fatigue Syndrome (CFS).

CFS is conceptualized as a serious long-term illness characterized by an experience of extreme fatigue, that is described as different from general tiredness and fatigue. The symptoms worsen after physical and mental exertion, and are not relieved by rest (Centers for Disease Control and Prevention, 2018). In comparison to burnout, the exhaustion in CFS transcends any stress-related domain and an inflicts any type of activity. The proposed link between Epstein-Barr virus and CFS captured widespread attention from researchers and patients. However, the very same researchers who introduced this also later said that the link accounts for only a small minority of these patients (Wessely, 1990). Wessely proclaimed that "future research is likely to shift from the virus to the role of the host, including such risk factors as genetics, immune function and psychological vulnerability, and post- morbid variables as coping strategies, attributions and appropriate treatment" (Wessely, 1990, pg. 49). In other words, he concluded that there was a need for future studies to disclose individual susceptibilities in order to expand our knowledge of fatigue related disorders.

Although theories of burnout have followed a psychological path and CFS has followed a medical path, there seems to be similarities in the processes leading up to these two conditions. They both share a history of stressful events leading to overload. In both cases there is a lack of energy that needs to be restored. Individuals who are affected also compensate for this overload by withdrawing. Individuals who become burned out withdraw mentally by distancing themselves emotionally and attaining a cynical attitude towards clients and work, while CFS patients withdraw physically by reducing their activity (Leone,

Wessely, Huibers, Knotterus & Kant, 2011). Fatigue-related syndromes can be complex to untangle and understand, and there is likely to be some overlap between them. Accordingly, Lewis and Wessley have suggested that fatigue is best viewed as a continuum, with CFS not being a discrete disorder, but instead lies at the far end of this continuum (Lewis & Wessely, 1992).

Burnout today is a well-known clinical phenomenon, but it is not yet an internationally acknowledged diagnosis (neither in the diagnostic manuals DSM-V nor ICD-10). Thus, it has had limited application in clinical practice, and instead been classified in the ICD-10 diagnostic manual (World Health Organization, 1994) as a "State of vital exhaustion" (Z73.0) under "Problems related to life-management difficulty". It thus has not the formal status as a disorder. Holmelin has pointed to a failure to distinguish and treat burnout. In Norway, patients are often sent between NAV, the general practitioner, DPS or "Raskere tilbake". He also stated that doctors and psychologists do not have sufficient knowledge about the effect of serious chronic stress (Holmelin, 2018). Meanwhile, the establishment of burnout as a clinically applicable diagnosis has been a work in progress. Eventually, in the upcoming ICD-11, burnout will be listed and defined in accordance with Maslach's definition: 1) a sense of energy-emptiness or fatigue, 2) increased mental distance or negativism/cynicism related to the job, 3) reduced efficiency/performance in the job. In addition, it will be clearly stated that burnout refers specifically to phenomena in the working context and should not be used to describe experiences in other areas of life (Holmelin, 2018).

One could, however, question this strict limitation of the cause of burnout. Bianchi and co-workers (Bianchi, Truchot, Laurent, Brisson, & Schonfeld, 2014) have argued that chronic unresolvable stress - the presumed cause of burnout - is not limited to work. The authors argue that theories of burnout should abandon the "groundless idea" that burnout is a specifically job-related phenomenon and rather define burnout as a multi-domain syndrome. Accordingly, in Sweden, they coined the local term "exhaustion disorder" (ED) in 2005, which represents a broader construct than burnout. The background was a tremendous rise in long-term sickness in connection with cuts forced by the economic crisis between the years 1997-2003. It was believed that many of these cases were stress-related and they saw the need to develop a new diagnosis. ED is conceptualized as being a reaction to long-term exposure to stress without adequate rest and recovery that can occur in both work and private life. Those who are affected report that the main source of stress comes from work, but also that a combination between factors at work and in their private lives stress them (Holmelin, 2018).

In the Swedish diagnostic manual, ED is defined as physical and mental symptoms of exhaustion that have developed as a result of one or more identifiable stressors that have been present for at least six months. There is a markedly reduction in mental energy, which is manifested by reduced initiative, lack of endurance, or increased need for recovery after mental effort (For a full description of the criteria, see Glise, 2014, pg. 14).

As with ED, Burnout and neurasthenia are thought to be the result of societal changes (Leone et al., 2011). Individuals are affected by the environment and, thus, environmental changes over time may produce new illnesses. Diagnoses are constructions that are made to try to capture observed constellations of symptoms. They change and develop through time and context. In order to fully understand the etiology of burnout, the environment in which it evolved must be considered. It is thus interesting that neurasthenia first appeared among business men; the icons of the industrial era, while burnout first appeared within helping professionals; the icons of the new service area. During the last quarter of the past century there has been a rapid transformation from an industrial society into a service economy (Schaufeli, Leiter & Maslach, 2009). Perhaps for the pioneering professions within a respective era, there will be a significant discrepancy between the ideals of the current culture (or the ideals of the individual) and the individuals' resources and capacity. In this regard, it may be a distressful task to be the pioneers of a civilization.

Perhaps recently, these ideals have spread to other domains, as it has been reported that the burnout rates have risen and been extended into other occupations than helping professions, such as police, prison guards and librarians, in addition to non-occupational domains such as sports and political activism, as well as within the family (Schaufeli, Maslach & Marek, 1993; Maslach & Leiter, 2016). One cause is believed to be the development towards more customer service across many occupations (Maslach & Leiter, 2016). In fact, the definition of burnout tells us that the etiological stressors are interpersonal and emotional. Thus, contemporary work-life may involve more demanding and stressful human encounters than before.

Moreover, there has been an increasingly blurring line between work and leisure the last decades, a development that includes more accessibility both in terms of time and space. With technical aids like mobile phones, PCs and the internet, it is possible to perform job-related tasks anywhere and at all times of the day. Also, flexible working hours have become more common. The opportunity for home office is common both in the private and the public

sector. The requirement to be available can interfere with our time to rest. It has been claimed, in fact, that "stress has become almost normal in today's business world," (Kraft, 2006, pg. 33). When a phenomenon is perceived as normal, it becomes more challenging to address it as a problematic issue.

In sum, burnout is characterized by the symptoms of emotional exhaustion, depersonalization, and reduced personal accomplishment. It is thought to be caused by a complex interaction between society, the working environment and individual susceptibilities. The central element is chronic emotional and interpersonal stressors at work and a subsequent depletion of resources over time.

The relationship between job stressors and burnout is well established in the literature (Maslach et al., 2001). However, the perception of stress is subjective and individual differences in appraisal and coping with stress can ameliorate or aggravate the stress response, and, thus, respectively, decrease or increase the risk for burnout. This is a topic which has received less scientific attention. Hence, the purpose of this thesis is to discuss the burnout phenomenon and its relationship to stress, as well as individual susceptibilities. To this end, I will first review different theories of stress and discuss their contribution in the process of becoming burned out. Then I will discuss individual susceptibilities to burnout.

In the period from July 2018 to June 2019 I searched "Google Scholar" and "PubMed", for scientific sources relevant for the present thesis, using search words such as "burnout", "stress", "appraisal", "coping", "individual differences", etc., and a combination of these. I started with general theories of stress, and progressively moved into factors that could explain individual differences in responding to stress and their possible contributions to burnout. The search was not conducted systematically, neither was the source selection. The sources were selected in accordance to my best judgement and understanding, which also evolved during the writing of this thesis. The data, however, was categorized into meaningful units (stress, appraisal, coping, resources, personality, tolerance of uncertainty, experienced meaning, emotional intelligence and attachment style) which enabled me to evaluate the main tendencies in the data-material.

2. THEORIES OF STRESS AND THEIR IMPLICATION IN BURNOUT

Stress has been defined in different ways. In the dictionary, it is defined as "a bodily or mental tension resulting from factors that tend to alter an existent equilibrium" (Merriam

Websters Dictionary, n.d.). Freberg defines stress as "an unpleasant and disruptive state resulting from the perception of danger or threat" (Freberg, 2010, pg. 425). The word *perception* is central here because it tells us that stress is highly subjective. A stress response may occur to present, imagined, remembered or anticipated events (Lovallo, 2005). A stressor is defined as "a stimulus that causes stress" (Merriam Websters Dictionary, n.d.) or "the source of stress" (Freberg, 2010, pg. 425). Examples of stressors include significant life changes, catastrophic events or daily hassles. The stress response is understood as our compensatory reaction to stressors.

Importantly, stress, or tension, is normal in limited periods, alternating with periods of relaxation. This is what Poore, in the 19th century, referred to as a "vital vibration", which is characteristic for any organs (such as the heart) and for humans as a whole. Furthermore, he stated that fatigue occurs when we try to "alter the rhythm of our vital vibration by prolonging the periods of tension at the expense of the periods of relaxation" (Poore, 1875, pg. 163). He viewed this as violating the laws of nature. He gave examples of athletes who over-train or people who are unable to sleep and said that persisting such violations is likely to result in some form of "break-down".

Stress may also be beneficial in limited amounts. In the first decade of the 20th century, Yerkes and Dodson described the "inverted-U" relationship between arousal and performance, suggesting that increased arousal steadily improves performance up to a certain point, where further increases in arousal begin to aggravate performance (Kiely, 2016), highlighting the difference between a helpful challenge and a harmful threat. A stressor initiates the stress response by increasing arousal. Arousal is part of the stress response (Lloyd, King, & Chenoweth, 2002). Hence, moderate arousal levels can increase performance, whereas too much can cause strain. The tipping-point in the inverted U-shaped curve is the point at which a healthy challenge becomes a progressively unhealthy stressor. Within the body, this is the point at which stressor exposure begins to compromise physiological systems (Ganzel, Morris & Wethington, 2010).

The formative works in stress theories during the first half of the 20th century, particularly those by Walter Canon and Hans Selye, have played an important role in the understanding of stress. However, key aspects of this conventional understanding have shifted in recent decades. Whereas stress was initially seen as a prototypical physiological reaction in everyone exposed to given stressors, it is now clear that stress has important psychological and

emotional components, making the stress response more individualized and difficult to predict (Kiely, 2016). This will be delineated in the following sections.

2.1 The stimulus model

The stimulus model is based on the work of Cannon who was among the first to study stress. He argued that the body resists change in order to maintain a relatively stable and constant internal environment, or homeostasis. Any event that disrupts this balance would initiate a process to restore it. In response to stress, the body would initiate the "fight-or-flight" response, which mobilizes energy resources in order to get away from danger and maintain homeostasis. The "fight-or-flight" response activates the sympathetic nervous system which releases hormones (e.g., epinephrine, norepinephrine and cortisol) that increases heart rate, blood pressure and respiration. Stored energy is released, blood flow is directed to the skeletal muscles and digestion is inhibited. Cannon viewed these processes as occurring locally in the body, independent on Central Nervous System (CNS) control (Ganzel et al., 2010).

Modern research indicates that individuals who are suffering from burnout are in a chronic "fight-or-flight" mode, or at least in a state of prolonged heightened sympathetic arousal, in accordance with Cannon's model. This is indicated by the fact that burnout is associated with dysregulation of the Hypothalamic-Pituitary-Adrenal (HPA) axis (explained below), metabolic syndrome, sleep disturbances, systemic inflammation, impaired immunity functions, blood coagulation and poor health behaviors (Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Grossi, Perski, Osika, & Savic, 2015).

Also, other studies have found that burnout is associated with disturbances in cortisol levels (Morgan, Cho, Hazlett, Coric, & Morgan, 2002), a finding that has also been described in individuals suffering from chronic stress (Yehuda, Giller, Southwick, Lowy & Mason 1991). Disturbed variations in cortisol levels point to abnormalities in HPA axis functioning (Yehuda et al., 1991). The HPA axis is the body's control center for stress responses as it connects the brain with the endocrine system. It regulates many of the body's functions, such as digestion and the immune system. The HPA axis helps the individual to adapt to increased demands and to maintain homeostasis. Furthermore, research has shown that stress over time can lead to persistent changes in the HPA axis. Dysregulation of the HPA axis, observed in burned out individuals may among other things, contribute to an increased risk for cardiovascular disease (Melamed et al., 2006). It is today well established that long-term exposure to stress can lead

to serious health problems. It can be an antecedent for a myriad of diseases and a factor causing worsening in an already existing disease (McEven & Stellar, 1993; McEven, 2008).

Cannon's model has been criticized for being too simplistic and to not fully explain the complexity of the stress process. It explains the physiological reaction to stress, but does not take into account psychological and emotional aspects that moderate the stress response (Hobfoll, 1989). Also, the "fight-or-flight" response does not apply equally to both sexes. The female response to non-life-threatening stress has been characterized as "tend-and-befriend", not "fight-or-flight" (McEven, 2005).

2.2 The response model

Like Cannon, Selye believed that the stress response is adaptive, as it preserves the life of the organism. However, it has its limitations. Building on Cannons emphasis as stress as a response, Selye created a model that included Cannons sympathetic response to a stressor and a generalized physiological syndrome that occurs as a response to exposure to any kind of severe stressor over time. He observed a set of prototypical responses, including decrease in the size of the thymus gland and other immune organs, ulcers in the gastrointestinal tract, and enlargement of the adrenal glands. Because of the observation that severe stressors always produced this set of responses, Selye argued that he had found the universal core of the stress response pattern and termed it the General Adaptation Syndrome (GAS) (Lovallo, 2005). He observed that it occurred in three stages. During the first stage, the *alarm stage*, the stress reaction kicks in. It is characterized by a dramatic increase in the activity of the HPA axis. The heart starts beating faster and resources are mobilized. During the *resistance stage*, the individual's body is filled with stress hormones. We have the capacity to handle acute stressors for a limited amount of time. However, if the resistance stage is not followed by recovery, the body's resources get depleted and that may lead us to *exhaustion*, which is the third stage. During this stage, the resources have been pushed past their limit. This has taken a toll on the various systems included in the stress response. The immune system is suppressed, leaving us vulnerable to illness (Freberg, 2010).

Accordingly, Selye thought that stress should be conceptualized as a process, not as a state like Cannons conceptualization. Selye´s model implied that there was a generalized reaction that could be applied to any kind of stressor, positive or negative, psychosocial or physical. His studies also showed that repeated exposure to moderate and manageable stressors builds

resilience, i.e., the ability to withstand more prolonged and severe exposure to the same stressor. However, he also observed that individuals become more vulnerable during the resistance stage, i.e., the ability to withstand additional challenges was impaired.

Selye´s theory thus illustrates an important point in relation to burnout, namely that stressors may have harmful long-term consequences. In fact, burnout is conceptualized as a process where an individual experiences chronic stress at work, becomes worn down by psychological erosion, is unable to replenish their resources, and, eventually, becomes exhausted (Schaufeli et al., 2009). As such, burnout is comparable to reaching the exhaustion stage in Selye´s theory (McEven, 2005). Also, during the resistance stage the individual becomes more vulnerable to a wide range of other illnesses such as infections and cardiovascular disease (Freberg, 2010; Melamed, Ugarten, Shirom & Kahana, 1999) which may become an additional stressor, adding to the load. Selye thought that it was the exhaustion of resources in the exhaustion stage that led to problems, however, others have suggested that it is the stress mediators themselves (e.g. cortisol) that can turn on the body and cause problems. McEven illustrated that stress mediators can have both protective and damaging effects, depending on the time course of their secretion (McEven, 2005).

Later in his life, Selye noted that he gave little thought to its psychological or sociological implications because he saw stress as a purely physiological and medical phenomenon (Kiely, 2016). Selye paid little attention to the significance of psychological states, perceptions, past experiences, and environmental contexts beyond the specific stressors. Individual differences in response to stress were not identified or accounted for.

2.3 A transactional model of stress

The stress response has evolved to make us equipped to react quickly to life-threatening situations. When the stress response is activated, mediators (e.g. epinephrine, norepinephrine and cortisol) mobilize the autonomic nervous system, which causes us to be alert and prepares us to handle the threat. This is adaptive for encounters that are dangerous or life-threatening. However, the stress system can also overreact to situations that are not life-threatening, based on the subjective assessment of the particular context.

The additive work of Mason, reported a substantial variation in components of the GAS response as a function of the context, the individual, and the individual's history, thus raising questions about the specificity of the generalized GAS response. Mason also found that when

the psychological factors of the stressor were removed, there was no GAS response (Mason 1971). His work demonstrated that the magnitude of the stress response was in large part modulated by the individual's emotional reaction to it, in essence, the individuals set of expectations, anxieties, projections and associations accompanying the given stressor (Ganzel et al., 2010).

Subsequently, Lazarus & Folkman formulated a *transactional model* of stress where they argued that stress does not exist in a situation, but occurs in the relationship, or the transaction between an individual and their environment (Lazarus & Folkman, 1984). As Lazarus put it: "we cannot sensibly consider the stress response as solely dependent on events external to the person, since humans are not passive responders to whatever happens. Rather, they perceive, evaluate, and therefore select and shape their environments to some extent, thus contributing to or preventing certain kinds of stress from ever happening" (Lazarus, 1975, pg. 295).

For the stress response to be activated, the situation must be appraised (or evaluated) as stressful. Accordingly, Lazarus and Mason proposed that the first mediator of stress is psycho-emotional, suggesting that the body's physiological stress response is not triggered directly by the physiological stressor, but by the changing emotional state of the individual, brought on by personal interpretation of their capacity to cope with the stressor (Ganzel et al., 2010).

Lazarus & Folkman divided stress into having three possible directions: harm-loss, threat or challenge. Each of these cannot be described by characteristics of the individual or the environment alone, but as the appraised balance of power between the demands and the resources. This model emphasizes the importance of the evaluations which the individual makes of the situation and of their resources for overcoming it. It also includes the influence of individual attempts to modify or support the situation or themselves (i.e. coping) (Lazarus & Folkman, 1984). Moreover, according to Lazarus & Folkman, an external or internal demand is appraised as threatening if it exceeds the individual's resources (e.g. social, physical, psychological and material assets). If the demands are not met and neutralized somehow, there will be harmful consequences for the individual. As noted in the introduction, burnout is more likely to occur in environments characterized by both high demands and limited resources (Demerouti et al., 2001). Appraisal and coping and their implication in burnout will be reviewed later in this thesis. Factors that contribute to individual differences in appraisal and coping will also be reviewed, including resources.

Hobfoll´s theory of conservation of resources provides an extension to transactional models of stress (Hobfoll 1989). This model suggests that the appraisal of resource loss (rather than an appraisal of resources being exceeded by demands) is central to the stress response. Hobfoll claims that individuals have resources that they try to protect, defend, and conserve. Resources are anything the individual values. They can be personal qualities (e.g., a positive world view, work skills), physical (e.g., house, car), conditions of life (e.g., friends and relatives, stable employment), or other assets (e.g., money, knowledge). From this view, stress occurs when resources are appraised as threatened or lost. In burnout, the individual loses their emotional drive, relational engagements and professional confidence which may be felt as important resources for the individual. Thus, being burned out may become a stressor in itself.

2.4 Allostasis and allostatic load

The term "allostasis" was introduced by Sterling & Eyer (Sterling & Eyer, 1988) to refer to the active process by which the body accommodates to stressors and maintains homeostasis. Allostasis means "achieving stability through change" (McEven, 2008) and refers to short-term accommodation through the activation of neural, neuroendocrine, autonomic nervous system and immune system mechanisms. Sterling and Eyer placed the brain as the central mediator between the environment and the stress response. They proposed that the CNS controls the stress response and that this control allows for the regulatory set points in the organism to vary in response to demand (Sterling & Eyer, 1988). Thus, the brain has supreme regulatory power that overrule the local effects of homeostasis (Ganzel et al., 2010). Meanwhile, when a demand is not removed or neutralized, they described, maintaining homeostasis causes ongoing wear and tear on the system, thus increasing the risk for illness.

Recent stress research found the association between stressful life events and medical disorder to be reliable, yet small. However, the more stressful these life events were for the individuals, and the more they endured over time, better associations were found (Ganzel et al., 2010). This led researchers to take a closer look at the aspect of time. In particular, the accumulating effect of different stressors over time and individual differences in cognitive and emotional responses to the stressor (anticipation, appraisal, coping, learning, and other types of information processing) were found to be key factors in determining outcomes (Ganzel et al., 2010). Thus, the significance of psychosocial factors as well as individual

differences in response and adaptation to stressors over time later became more and more clear (Ganzel et al., 2010).

Allostasis implied that the human physiology continuously evolved and, as such, homeostasis would not reset itself after overcoming as distressful challenge (Sterling & Eyer, 1988), as some previously had believed (e.g., Goldstein, 1995). Rather, it is making wide-ranging physiological changes that results in a new homeostasis that better fits the new circumstances (Sterling & Eyer, 1988). These physiological adaptations may be adaptive short term, but may have negative long-term consequences that result in wear and tear. This inspired McEwen and Stellar (McEvan & Stellar, 1993) to introduce the concept of "allostatic load", i.e., the physiological cost of making long-term adaptive changes in many of the body's systems to match internal functioning to environmental demand (Ganzel et al., 2010). They developed the concept in an attempt to address the accumulating cost of ongoing physiological accommodation to environmental challenge across the lifespan. Here, the CNS was viewed as the central organizing factor in the translation of environmental stimulus into physiological responses (McEven, 2004). McEven stated that adaptation to stressors are mediated by the HPA axis, the autonomic nervous system, the metabolic system, and the immune system and is generally adaptive in the short term. However, over-activity or dysregulated activity of the HPA axis through an overactive or inefficiently managed allostatic response plays a significant role in the cascade of events leading to pathological changes in the brain and body (McEwen, 2004). Thus, the human body cannot maintain allostatic overload over a long time without consequences.

The concept of allostatic load explains how chronic activation leaves the individual susceptible to stress-related illness. In fact, if the allostatic load is massive enough, it can produce symptoms that are severe, or even fatal, as seen in the exhaustion phase in Selye's theory (McEven, 2005). This happens when mediators (e.g., neurotransmitters and hormones) are over-used as a result of cumulative stressors, are not used adequately during stress or when they are not turned off when the stress is over. This causes cumulative degenerative changes in the brain and the body. This load creates ongoing "adaptive" set points, which, for instance, yields a higher circulation of cortisol, making the individual better suited to the challenges presented in the individual's current environment. They can be adaptive in the short term, but may have negative long-term consequences.

As previously mentioned, the brain is the central organ of stress processes and allostatic adaptation, and it is thus a key target of allostatic load. Within the brain, a distributed neural

circuitry is responsible for mediating the stress response in response to internal or external threats to homeostasis. This circuitry includes the hippocampus, amygdala and prefrontal cortex. The hippocampus and amygdala combine and processes information from lower brain structures such as the hypothalamus and brain stem with information from the prefrontal cortex. These processes involve bidirectional signaling between the brain and the body (McEven & Gianaros, 2011). The amygdala and the hippocampus are the two areas in the brain that contain the most glucocorticoid receptors, and thus are most susceptible to stress-related damage (McEven, 2008). In fact, long-term structural and functional changes have been observed in the core emotional regions of the brain in response to chronic stress (Rosen & Schulkin, 1998). Particularly, gray matter reductions in the amygdala, the hippocampus (Ganzel et al., 2010) and the frontal cortex (McEven & Gianaros, 2011) have been observed. Prolonged release of cortisol and damage to the HPA axis can also have a negative effect on many emotional, behavioral and physiological processes in the body and interfere with cognition and future adaptation to stressors (Essex, Klein, Cho & Kalin, 2002).

According to McEwen (McEven, 2006), the hippocampus in particular, plays an important role in interpreting and responding to stressors and therefore determining the level of allostatic load an individual will experience. The hippocampus is part of the HPA axis. The hippocampus has two main functions; supporting aspects of memory and regulating HPA activity. Thus, impairment to the hippocampus may have two important consequences. First, it may debilitate an individual's ability to process information in new situations and to make decisions about how to deal with new challenges or stressors. Secondly, it may impair hippocampal regulation of HPA activity, particularly the termination of the stress response, leading to elevated HPA activity and long-term effects of repeated and chronic stress exposure (McEven & Gianaros, 2011). In fact, it has been proposed that the observed decrease in adult hippocampal neurogenesis in burned out individuals may cause disturbed hippocampal regulation of the HPA axis and lead to a decreased ability to cope with chronic stress (Eriksson & Wallin, 2004).

The amygdala is also affected by allostatic processes. One function of the amygdala is the rapid assignment of emotional salience to environmental events (McEven & Gianaros, 2011). For instance, it was shown that more than three years after the terrorist attacks on the World Trade Center buildings on September 11, 2001, otherwise healthy adults living near the site of the attacks showed a reduction in gray matter volume in the hippocampus, as well as in anatomically networked areas of the amygdala and prefrontal cortex (Ganzel et al., 2008). It

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has also been shown that chronic stress can cause stress-related amygdala hyper-reactivity (Conrad, Magariños, LeDoux, & McEwen, 1999; Danese & McEven, 2012).

Moreover, Rosen & Schulkin (Rosen & Schulkin,1998) chronic stressor exposure, may result in sensitization of limbic brain regions. And that if this persists, it may lead to mental disorder, particularly anxiety- and trauma-related disorders, as well as depression and learned helplessness. Being exposed to high levels of stress at an early age, without adequate regulation, can result in a high level of cortisol that directly affect gene expression and further development of the neuroendocrine stress response system. This can result in the individual getting a more sensitive stress system and becoming more emotionally reactive (Danese & McEven, 2012). Furtermore, Danese & McEven found that adults that had been subjected to chronic allostatic load during childhood as a result of childhood maltreatment had smaller volume of the prefrontal cortex and hippocampus, greater activation of the HPA axis, and elevated inflammation levels. Also, allostatic load can exhaust the stress response systems. This can result in a compromised immune system which is related to higher levels of infection and vulnerability to cancer (Ganzel et al., 2010).

Juster (Juster et al., 2011) found that that increased allostatic load (as evident in disturbed fluctuations in cortisol levels throughout the day) was associated with increased chronic stress and symptoms of burnout. Some researchers also claim that burnout is associated with higher allostatic load as measured by several physiological indicators (Hintsa et al., 2016), while others have not found this association (Langelaan, Bakker, Schaufeli, van Rhenen, & van Doornen, 2007). Divergent results might be explained by differences in the measurement of allostatic load and sample sizes. For instance, neither Langelaan and co-workers nor Hintsa and co-workers included the measurement of cortisol levels in their assessment of allostatic load. Instead, Hintsa and co-workers found that different components of burnout were related to diastolic blood pressure (professional efficacy) and insulin (cynicism). Furthermore, their regression analysis demonstrated that this effect was mediated by depression. Langelaan and co-workers measured diastolic blood pressure (no result) but not insulin.

In sum, Yerkes and Dodson (1908) described the inverted u-shape relationship between arousal and performance. Cannon (1915) believed that any event that would cause homeostatic imbalance would initiate a physiological stress response to restore it, e.g., the "fight-or-flight" response. Selye (1950) saw the stress response more as a set of prototypical responses occurring in stages, e.g., "alarm", "resistance" and "exhaustion" as a result of

prolonged stress exposure. In their transactional model of stress, Lazarus & Folkman (1984) claimed that stress is not a direct response to a stressor. Rather, the effect of stress is mediated by psychological processes such as the individual´s appraisal of whether their resources are adequate or not to cope with a potentially stressful event. Sterling & Eyer (1988) observed that in response to stressors, the body is not struggling to get back to its initial homeostatic set-points, rather it is creating new homeostatic set-points, leading to adaption to the environment. They claimed that it was the perceived threat posed by the stressor that ultimately decided the extent of the stress defenses mobilized, placing the brain as the central mediator between the environment and the stress response. McEven & Stellar (1993) illustrated that in the long run, allostatic changes may fail to be adaptive as the maintenance of allostatic changes over time may result in wear and tear, such as degenerative changes in the brain and the body which may interfere with future adaptation to stressors.

Importantly, the historical development of the theories of stress led to the contemporary view that the magnitude of the stress response is not directly dependent on the magnitude of the stressor. Rather, it is the appraisal of the context and the emotional resonance attached to the stressor, as well as the neurophysiological sensitivity that ultimately decide the extent of the stress defenses mobilized, and whether this response will be proportionate or disproportionate to the actual challenge.

Furthermore, the theories illustrate that the body must have a relatively stable internal environment in order to function properly. In order to do so, it must have ways to protect itself. However, the physiological protection mechanisms may be damaging if the stressors are severe and prolonged. One consequence may be a depletion of energy, as seen in Selye´s exhaustion stage. The symptom of emotional exhaustion in burnout might be an indication of this. Another burnout symptom, that is, depersonalization, which is a psychological protection mechanism, indicates an effort to insulate further depletion. These theories leave us with the notion that individuals can likely maintain a stressful job with a high degree of pressure as long as they are able to rest and recover. Additionally, it is likely that healthy individuals can tolerate the effects of stress better. As such, any biological factor that contribute to resilience against stress can be considered a resource.

3. INDIVIDUAL SUSCEPTIBILITIES TO STRESS AND BURNOUT

As described in the previous sections, the effect of stress is mediated by appraisal and coping. In the following sections, I will discuss how individual differences in appraisal and coping

may affect the stress response and contribute to burnout. Then I will explore factors that might explain these differences, that is, resources, personality, tolerance of uncertainty, meaning, emotional intelligence and attachment style.

As previously mentioned, studies of burnout have consistently found substantial inter-individual variations in experienced burnout within a particular work setting. Why is it that some individuals get burned out while others do not? Leiter (Leiter, 1991) points to the contribution of coping patterns in predictions of burnout and states that appraisal and coping are personal variables that add variance in experienced burnout.

Burnout is thought to be the result of long-term stress at work that has not been appropriately dealt with. Appraisal processes are important for understanding adaptation or "maladaptation" to stressors because, in addition to biological differences in reactivity to stress, the experience of stress depends on the way individuals evaluate the situation and their personal coping resources (Gomes, Faria & Gonçalves, 2013). Therefore, these processes should be accounted for when determining individual differences in response to prolonged stressor exposure and burnout.

3.1 Appraisal

As previously noted, the brain has been identified as the central mediator between stressors and the stress response. The appraised threat-value of the stressor, (in addition to physiological differences in stress reactivity) is what determines the magnitude of the stress response. By nature and nurture, people are different. Similarly, the appraisal of an event is highly individual.

Appraisals have been divided into two categories: primary and secondary (Lazarus & Folkman, 1984). According to Lazarus and Folkman, we first evaluate an event for its threat value and begin to plan how to overcome it (primary appraisal). We then evaluate our options to cope with the perceived threat (secondary appraisal). Primary appraisal is defined as the initial evaluation of the potential impact of the stressor on the individual's well-being (Monroe & Kelley, 1995). It's a quick and unrefined analysis of certain properties of the stressor, such as its magnitude and whether its effects are most likely to be benign, neutral or negative (Lazarus & Folkman, 1984). Secondary appraisal is defined as an individual's evaluation of their ability to cope with the situation. It is a more complex evaluative process

that includes available coping options, the likelihood that a given coping option will give the desired result and the likelihood that one can implement the coping strategy effectively (Lazarus & Folkman, 1984). Secondary appraisal includes an evaluation of the harm that has already been done, potential for future damage and of how it can be overcome. In this process, individuals take into consideration evaluation of past successes and failures of coping in similar situations (Monroe & Kelley, 1995). Accordingly, many successes can mean either a favorable environment, an abundance of resources that facilitate successful coping, or both.

Furthermore, primary appraisal can be categorized as challenging, harmful or threatening. These relational concepts do not refer to person and environment as separate variables, but refer to the balance between environmental demands and personal resources (Lazarus & Launier, 1978). Harm or loss implies damage that has already occurred and is usually accompanied by negative emotions such as sadness or anger. Threat is the possibility of a harm or loss in the future and tends to be accompanied by negative emotions such as anxiety or fear. Threat appraisals have been related to low coping expectancies and anxiety (Lazarus & Folkman, 1984). In contrast, challenge means events that provide an opportunity to gain a sense of mastery and competence by confronting and overcoming the event. Challenge appraisal tends to be accompanied by positive emotions such as excitement, eagerness, confidence (Folkman & Moskowitz, 2000) and intrinsic motivation (Deci & Ryan, 1985). Appraisal of threat has been shown to be positively related to stress and burnout, whereas appraisal of challenge has been shown to be negatively related to stress and burnout (Gomes et al., 2013).

An appraisal of the capability of being harmed or in danger leads to a feeling of vulnerability. Also, the individual's felt vulnerability in any given situation affects whether the individual will anticipate experiencing harm or benefit. For instance, an individual with the conviction that the setting is hostile or dangerous, and who feels generally inadequate or vulnerable, is far more likely to feel threatened and react with anxiety than one who has high confidence in the available resources for mastery, or who believes the environment is usually benevolent (Lazarus & Launier, 1978). Individuals who often feel vulnerable in many uncertain situations may have adapted through allostasis and developed a more reactive stress-response. One´s coping potential, that is, the extent to which an individual feels able to cope with the demands, and one´s control perception, that is, the extent to which an individual feels powerful enough to address the demands, has been shown to be negatively related to stress (Gomes et al., 2013).

In addition, it has been shown that appraisal of challenge and control in the job was associated with higher personal accomplishment and lower scores of exhaustion and depersonalization, whereas appraisal of stress and workload contributed to more exhaustion at work (Ben-Zur & Michael, 2007).

Habitual patterns of negative appraisals may contribute to repeated experience of unpleasant emotions and accompanying prolonged physiological changes as a result of the stress response. These prolonged physiological changes may become adaptions or "maladaptions" through the process of allostasis and result in enduring traits, such as increased reactivity to stress. The prolonged physiological changes can also, as previously noted take a toll on the body, leaving the individual more susceptible to stress and illness. These antecedent processes may leave the individual vulnerable when faced with a potential burnout-causing process.

3.2 Coping

As previously mentioned, besides biological differences in stress reactivity, adaptation or "maladaptation" to stressors are dependent upon two things; how the event is appraised and how it is coped with. Effective coping decreases the intensity and duration of the stress response. Thus, the negative effects of stress can be buffered by effective coping (Lovallo, 2005).

Coping is defined as an individual's cognitive and behavioral efforts to manage, reduce or control external or internal demands that are appraised as threatening or exceeding the individual's resources (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Secondary appraisals (i.e. evaluation of the ability to cope with the situation), draw our attention to responses that may be employed to manage the event (Lazarus & Folkman, 1984). If the event is evaluated as a threat, adaptive behavioral interventions are initiated in order to minimize the negative effect and harm.

The ultimate goal of the coping process is to reduce the threat-value on an event, reduce the negative emotions in response to the event and therefore reduce the physiological changes associated with the stress response (Lovallo, 2005). Coping has two main functions: to regulate stressful emotions and to alter the person-environment relation that causes the distress. Accordingly, Lazarus and Folkman classified coping responses into problem-focused and emotion-focused and suggested that coping strategies should be defined in terms of the functions they serve, for example, to avoid, confront, or analyze. Problem-focused coping

targets the problem itself, with behaviors targeted to gain information, alter the event, beliefs and commitments. Problem-focused coping can reduce the threat-value by increasing the individual's awareness, knowledge and range of coping options. Emotion-focused coping targets psychological changes to minimize the emotional disruption brought on by an event, without trying to alter the event itself (Lazarus & Folkman, 1984).

How effectively an individual can cope with stressors depends on their available resources and how well they can be implemented. Coping resources include individual characteristics (e.g., problem-solving skills, interpersonal skills, self-esteem) and the social environment (e.g., the availability of a supportive social network), all in which may facilitate successful adaptation to stressors. Coping styles are characteristic ways of coping over time either within a certain type of situation or across different situations. The type of coping strategies individuals prefer depends on their personal values, beliefs, and goals in addition to the nature of the event (e.g., controllable or uncontrollable) (Compas, 1987). Coping is assumed to be consistent across a wide variety of stressful situations, and to be consistent under similar circumstances but possibly vary as features of the environment or cognitive appraisals of the environment change (Compas, 1987).

Folkman and colleagues (Folkman et al.,1986) found that events with satisfactory or unsatisfactory outcomes were distinguished by how the event was coped with. Among cognitive forms of coping, confrontive coping was associated with unsatisfactory outcomes, whereas planful problem-solving was associated with successful outcomes. Among emotion-focused forms of coping, positive reappraisal was associated with successful outcomes and distancing was associated with negative outcomes.

In Lazarus and Folkman's (Lazarus & Folkman, 1984) model of stress, perceived control over one's environment is considered a critical determinant of the impact of stressors. The feeling that no coping option is available may lead to feelings of hopelessness and helplessness which may lead to a greater exhibition of anxiety and fearfulness. Being faced with an uncontrollable aversive event triggers primary threat appraisals, secondary appraisal that no effective coping options are available and negative emotions. These negative emotions, in turn triggers the stress response (Lovallo, 2005). When events are appraised as uncontrollable, the individual learns that their behavior and outcomes are independent. Repeated experiences of this nature may eventually lead to learned helplessness (Maier & Seligman, 1976).

Anisman & Zacharko (Anisman & Zacharko, 2010) found that individuals´ ability to cope with stressful experiences was a major determinant in the neurochemical changes in response to stressors. When behavioral coping was possible, neurochemical systems were not overly taxed. However, when the aversive experience was perceived as uncontrollable and there could be no behavioral control over the stressful stimuli, adaptive regulation was mainly based on internal neurochemical mechanisms, leading to a greater tax on the neurochemical systems involved. Repeated exposure to uncontrollable aversive events may cause sensitization which can lead to over-reacting to later exposure to related stressful stimuli, as previously mentioned. Anisman & Zacharko suggest that either the initial depletion of neurochemicals provoked by aversive experiences, or repeated exposure to related stressful stimuli cause a dysfunction of the adaptive processes, resulting in persistent neurochemical depletion that over time might contribute to depression.

Control can be defined as "the belief that one has at one's disposal a response that can influence the aversiveness of an event" (Thompson, 1981, pg. 89). Thus, confidence in one´s abilities can be an antecedent to perceived control. Accordingly, perceived control over stressors and high self-esteem have consistently been observed to buffer the negative health effects of stress (Thoits, 1995). Schmitz and co-authors (Schmitz, Neumann & Opperman, 2000) found that the degree of perceived control was instrumental in enabling individuals cope with stress and burnout. In fact, research has shown that the stress response is actually more dependent upon perceived control than objective control over stressors (Skinner, 1996). Concepts that are closely related to the perceived control include: locus of control, self-efficacy, mastery, autonomy, probability of success, and outcome expectancy (Skinner, 1996). Logically, a high degree of perceived control may be a reflection of a high self-esteem and many resources.

Bollini and co-authors (Bollini et al., 2004) found that individuals with more external locus of control (i.e., the tendency to attribute personal successes and failures to external events or forces) perceived themselves as having less control, were more susceptible to external influences, and were more responsive to stress. Such individuals tend to perceive problems as uncontrollable and thus engage in emotion-focused coping and ineffective forms of coping (Folkman 1984). Several studies have also found external locus of control to be related to burnout (McIntyre, 1984; Schmitz et al., 2000), adding support to Lazarus´ and Folkman´s results, (Lazarus & Folkman, 1984) that perceived degree of control may be instrumental in enabling individuals to cope with stressful situations.

It has been proposed that resources such as high self-esteem and an internal locus of control (i.e., the tendency to attribute personal successes and failures to themselves) give individuals the confidence or motivation to attempt problem-focused coping (Lazarus &Folkman, 1984). Folkman and co-authors (Folkman et al., 1986) found that events that were appraised as controllable, individuals used coping strategies that kept them focused on the situation: they confronted, did planful problem-solving, accepted responsibility, and selectively attended to the positive aspects of the situation.

In contrast, in events that individuals appraised as uncontrollable where there was nothing they could do but to accept the situation, they used strategies to avoid the situation: they turned to distancing and escape-avoidance. Furthermore, they found that individuals sought less social support in encounters where their self-esteem was at stake. They suggested the reason for this may be due to shame or embarrassment.

Habitual attribution patterns may shape beliefs about influence over time and the accompanying sense of control. Attributing outcomes to uncontrollable causes, undermines beliefs about perceived control over future outcomes whereas attributing outcomes to internal, controllable causes enhances beliefs about perceived control over future outcomes. Furthermore, Haynes and colleagues stated that the more one believes they can influence outcomes (i.e., the stronger the perceived control), the more motivated they will be to engage in goal-directed behavior, making goal attainment more likely (Haynes et al., 2011).

Research has shown that individuals who are burned out cope with stressful events in a rather passive and defensive way. Thornton (Thornton, 1992) found that escape-avoidance was related to all three symptoms of burnout. Inactive coping such as avoidance and medication was positively related to burnout, whereas active coping was negatively related to burnout. Similarly, Leiter (Leiter, 1991) also found that control coping was associated with decreased burnout, while escapist coping was associated with increased burnout. Furthermore, Leiter found escapist coping to be related to greater levels of emotional exhaustion, whereas control coping was related to more positive assessment of personal accomplishments and less exhaustion. The alleged reason for this is because control coping may lead to a greater sense of self-efficacy and control over one's environment, while escape coping does not lead to any resolution and may therefore lead to a diminished sense of control and a feeling of helplessness (Leiter, 1991). Eventually, ineffective coping may lead to lower self-esteem (Thoits, 1995).

Leiter suggested that control coping may increase an individual's capacity to endure stressors by reducing the stress reaction and by enhancing the individual's evaluation of their personal accomplishments when they experience that their coping strategies are effective in managing stressors. Furthermore, addressing work-related stressors in a way that is consistent with personal values, beliefs and goals may enhance the individual's self-appraisal and subsequently their feeling of personal accomplishment (Leiter, 1991).

In fact, confrontive coping is related to the feeling of efficacy (Maslach et al., 2001). Self-efficacy involves beliefs about having the abilities or skills necessary to influence a desired outcome. Having a high self-efficacy may be related to internal locus of control, whereas, low self-efficacy may be related to external locus of control. Similarly, having a high self-esteem is likely to be related to high self-efficacy. These terms seem to share a great deal of overlap. In fact, some researchers have argued that self-esteem, locus of control, neuroticism (emotional stability), and generalized self-efficacy are aspects of the same, underlying construct; core self-evaluations (Judge, Erez & Bono, 2002). The construct of core self-evaluations represents an individual's fundamental beliefs about their own competence and self-worth. Judge and Bono (Judge & Bono, 2001) found that these four traits are significant predictors of both job satisfaction and job performance. Furthermore, these researchers found that self-esteem displayed the highest average correlation with job performance. Similarly, McMullen & Krantz (McMullen & Krantz, 1988) found that the burnout components of emotional exhaustion and depersonalization were related to learned helplessness and low self-esteem, whereas Maslach and co-workers found all three burnout dimensions to be related to lower self-esteem (Maslach et al., 2001).

It is, however, important to note that no single form of coping is adaptive across all situations (Compas, 1987) and that adaptive (control) coping mechanisms are only salient in addressing occupational stress if they are supported by coworkers and supervisors (Leiter, 1991). Lazarus and Folkman point to the value of escapist coping when no other solution can be found. In this sense, the fact that actually no ways of managing the work-related problem exists may be the actual problem, and not the way the individual responds (Lazarus & Folkman, 1984). Individuals generally want a meaningful involvement in their work. When they feel that they don't have any options for affecting their work, they are vulnerable to experiencing stress (Leiter, 1991).

When considering coping strategies and their contribution to burnout, both their outcome and the frequency of use should be considered. The coping strategies chosen depends on the balance between demands and resources. Individuals are more likely to use maladaptive coping strategies when demands are high and resources are lacking. Thornton (Thornton, 1992) examined the frequency of use of coping strategies and their relation to the level of experienced burnout. She found that when the level of burnout rose from moderate to high, the use of escape-avoidance increased. Hobfoll stated that strain occurs when the workers feel they no longer have sufficient resources to handle the interpersonal stressors (Hobfoll, 1989). Instead, many adopt the defensive strategy of withdrawal (rather than engagement) through depersonalization (Lee & Ashforth, 1993). Thus, burnout and coping strategies may influence each other in a bi-directional relationship.

Importantly, good coping (regardless of whether it is emotion-focused or problem-focused) depends on the context. For instance, since many of the stressors involved in helping professions are not amenable to change, such as the never-ending stream of suffering patients, emotion-focused strategies may form an important part of coping for these professionals (Boyle, Grap, Younger & Thornby, 1991). In fact, several studies have failed to find a relationship between problem-focused coping and burnout in helping professions (Boyle et al. 1991; Duquette et al. 1995). Meanwhile, problem-focused coping has been found to be more adequate in many other contexts. Therefore, general associations between coping and burnout only provide rough estimates as to which strategies may be more or less productive, and, ultimately, a good coper uses different strategies adaptively depending on the situation.

In sum, the subjectively appraised threat-value of an event (and the subsequent negative emotional state) is what activates the stress response. Habitual patterns of appraisals may cause prolonged physiological changes that may become adaptions or "maladaptions" through the process of allostasis and result in enduring traits, such as increased reactivity to stress.

If coping strategies are ineffective, the stress response will be prolonged and thus have prolonged damaging effects. In addition, when individuals experience again and again that their efforts to cope with stressors have limited effects they may start to feel helpless and over time their self-esteem may get impaired. When coping strategies are effective, they shorten the duration of the stress response. Repeated experiences of successful coping may increase the perception of mastery and control, which is negatively related to stress. Over time, this may boost self-esteem. Additionally, successfully coping with stressors may make the

environment seem more predictable to the individual which may contribute to a feeling of order and safety. In comparison, repeated experiences with failures in overcoming stressors can leave the individual more vulnerable, with a perception of less control over the environment, and with a lowered self-esteem.

3.3 Resources

All assets of bio-psycho-social origin (e.g., good health, problem-solving skills, emotional intelligence, self-esteem, social support) that an individual brings with them into a stressful situation can be considered as resources. As previously mentioned, resources have also been defined as anything the individual values. They can be personal qualities (e.g., a positive world view, work skills), physical (e.g., house, car), conditions of life (e.g., friends and relatives, stable employment), or other assets (e.g., money, knowledge) (Hobfoll, 1989). In addition, stress occurs when work demands exceed employee resources. Having more resources available can mitigate the strain produced by stressors (Pithers, 1995). In fact, the availability of personal and social resources for coping have been shown to be important in managing or overcoming stress (Compas, 1987). Furthermore, Karasek & Theorell found that individuals with high job demands, low control, and low social support were at risk for burnout (Karasek & Theorell, 1990).

Resources that contribute to control and predictability are of particular importance in order to prevent burnout (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). For instance, Leiter (Leiter 1991) found that co-worker support and participation was associated with personal accomplishment. Leiter suggested that support from co-workers may provide individuals with a sense of competence and positive self-appraisal. He also suggested that participation leads to greater felt mastery and control over the work environment, in addition to enhanced self-efficacy (Leiter, 1991). Here, Van Yperen and Snijders (Van Yperen & Snijders, 2000) found that self-efficacy, in particular, moderates the relationship between job demands and psychological health symptoms, while Xanthopolou and co-authors (Xanthopoulou et al., 2007) found that autonomy, social support from colleagues, a high-quality relationship with the supervisor, and performance feedback reduced the risk of developing burnout. Guidance from a supervisor can have a dampening effect on stress reactions such as burnout, particularly in inexperienced employees (Teasdale, Brocklehurst & Thom 2001).

Work experience is also negatively related to burnout. It has been found younger, less

experienced individuals consistently report higher levels of burnout (Cordes & Dougherty, 1993) and that longer work experience is related to less experience of stress (Huberty & Huebner, 1988). An explanation for this may be that younger individuals may be more eager to perform to prove their value, and may thus show more dedication and commitment, which are traits that Freudenberger identified as antecedents to burnout (Freudenberger, 1974). This view was also shared by other scholars, that is, highly motivated, dedicated and emotionally involved workers, perhaps in in human service professions in particular, are more vulnerable to burnout (Pines, 1993; Tei et al., 2014). Less experienced workers may harbor more unrealistic self-demands and goals and, thus, strive harder with less gain than expected. This includes their expectations about the profession, the organization, and their own personal efficacy. Typically, overachievers put unrealistic expectations upon themselves (Cordes & Dougherty, 1993). Thus, unmet expectations may, over time, yield disillusionment, cynicism and exhaustion. In comparison, older, and more experienced individuals know more about their own limitations and manage their resources with greater wisdom.

Personal resources and social support outside of the work-related domain can support and strengthen individuals' ability to cope with the demands and reactions to the job. Individuals who are married, for example, report lower levels of burnout than their single counterparts (Cordes & Dougherty, 1993). Here, a spouse may function as a source of support, providing a buffer between the stressful work environment and adverse reactions to it. Being married or being in a secure relationship may also take the individual´s focus off work when being at home and provide a balance of perspective between work and home. Individuals who have children also report lower levels of burnout than do their childless peers. Cordes & Dougherty suggested that these individuals are older and more mature, and thus more resistant to burnout as explained above, and that a family may offer a source of comfort and support. The family may also fill the individual's need for affection and approval, which may or may not be fulfilled through work (Cordes & Dougherty, 1993). This may also reduce the individual´s need for work-related approval.

How individuals perceive and cope with stressors might influence how others will respond and what type of support that will be given (e.g. nobody likes a whiner). Individuals´ reports of low perceived support may reflect either the absence of supportive ties or a way of responding to stressors that others may have difficulty dealing with, which is an important distinction to make (Thoits, 1995). Lack of support, that is, the feeling of standing alone in a stressful situation may function as an additional stressor (Leiter, 1991). Furthermore, stressors

from other domains in life than work, such as difficulties in the marriage or within the family may add to the experienced load and make it easier to reach the threshold for burnout.

In sum, limited autonomy, lack of social support, limited work experience and young age are related to burnout. The common denominator between these factors is a lack of mastery and perceived control.

3.4 Personality

Maslach and co-workers pointed out that people do not simply respond to their work environment, but that they bring their unique qualities into the relationship. Thus, it is likely that individual characteristics such as personality may play an important role in the development of burnout (Maslach et al., 2001), as they influence how individuals appraise and cope with stressors over time. Accordingly, several personality traits have been studied in an attempt to discover who may be more vulnerable to experiencing burnout.

Hardiness reflects an ability to endure stressors without experiencing the associated negative effects. Hardy individuals tend to believe that they can control stressors and generally perceive stressors as challenges rather than threats (Alarcon, Eschleman & Bowling, 2009). In fact, hardiness yielded strong negative relationships with all three dimensions of burnout (Alarcon et al., 2009). Furthermore, Sandvik and co-authors (Sandvik et al., 2013) found that individuals with high scores of hardiness had a healthier immune- and neuroendocrine response to stress.

Burnout has also been linked to the big-5 personality dimensions, mainly to the personality dimension of neuroticism (Maslach et al. 2001), in particular, which includes traits of anxiety, hostility, depression, self-consciousness, and vulnerability. It has been found that individuals that have high scores on this dimension have a heightened sensitivity to stress (Suls, 2001). Zwider & Zimmerman (Zwider & Zimmerman, 2010) found neuroticism to be strongly related to job burnout, and that individuals who had higher scores on neuroticism combined with lower scores on extraversion, conscientiousness, and agreeableness were even more prone to experience burnout. Conscientiousness may be related to a sense of control, whereas neuroticism may lower the threshold for what will be experienced as stressful and be related to a sense of lack of control. Also, Alarcon and co-authors found lower scores on agreeableness was related to burnout (Alarcon et al., 2009). Their explanation for this finding is that agreeableness reflects a positive appraisal of people in general, and that this view

makes it more unlikely for these individuals to experience negative responses (such as depersonalization) towards people.

Alarcon and co-authors also revealed a negative relationship between burnout and self-esteem, self-efficacy, internal locus of control, emotional stability, extraversion, conscientiousness, agreeableness, positive affectivity, optimism, proactive personality and hardiness. And a positive relationship between negative affectivity and burnout (Alarcon et al, 2009). Furthermore, they found that especially emotional stability, positive and negative affectivity had strong relationships with emotional exhaustion and depersonalization. Their explanation for this finding are that these are all affect-oriented variables, and thus their relationship with the affect oriented variables of burnout is not very surprising. They found Type-A personality to be related to the personal accomplishment dimension of burnout, but not to emotional exhaustion or depersonalization. Type-A personality includes traits of competition, hostility, and an excessive need for control and a time-pressured lifestyle.

Somewhat similar to type-A personalities, adaptive perfectionism is a personality trait characterized by a strive to maximize one's potential, whereas maladaptive perfectionism is the avoidance of failure. It has been suggested that the distinction between adaptive and maladaptive perfectionism is acceptance. The difference is using perfectionism as an asset rather than feeling a constant pressure to be perfect (Lundh, 2004). The self-critical dimension in the perfectionist makes them vulnerable during stressful conditions and is therefore a potential risk factor in burnout (Lemyre, Hall, & Roberts, 2007).

In fact, researchers have differentiated between perfectionistic striving and perfectionistic concerns. Perfectionistic strivings are aspects of perfectionism associated with self-oriented striving for perfection and having very high standards for personal performance, whereas perfectionistic concerns are described as "aspects associated with concerns over making mistakes, fear of negative social evaluation, feelings of discrepancy between one's expectations and performance, and negative reactions to imperfection" (Gotwals, Stoeber, Dunn, & Stoll, 2012, p. 264). Perfectionistic concerns have been found to be related to stress and burnout. Perfectionistic concerns imply doubting one's performance. This makes it harder to handle setbacks because they are viewed as failures, as opposed to an opportunity to learn and grow. Many individuals with perfectionistic concerns have unrealistic expectations. Accordingly, Stoeber (Stoeber, 2008) found that perfectionistic striving was positively related to appraising events as challenges and active coping, and inversely related to appraising

events as a threat, avoidant coping, and burnout. In comparison, perfectionistic concern was positively related to appraising events as threats, avoidant coping, and burnout. Thus, perfectionistic concerns may heighten the experienced threat-value of events and lower the threshold for what the individual will be able to control.

Intuitively, it is plausible that burnout is related a diminished ability to set boundaries and to self-defeating personality (Schill, 1990). To my knowledge, self-defeating personality has not been investigated in relation to burnout. However, one could argue that helping professionals, in general, are a bit self-defeating considering their high level of emotional involvement with patients, unidirectional relationships, and high suicide rates, as previously mentioned.

In sum, low levels of hardiness, neuroticism, low extraversion, low conscientiousness & agreeableness, type-A behavior, low self-esteem, perfectionistic concern, low self-efficacy and negative affectivity are all related to burnout.

3.5 Tolerance of uncertainty

Research has found uncertainty to be a powerful stressor (Greco & Roger, 2003). Grupe & Nitschke defines *intolerance of uncertainty* as "the inability to accept the possibility that a negative event may occur in the future, irrespective of the probability of its occurrence" (Grupe & Nitschke, 2013, pg. 9). The authors describe that environmental cues indicating the unambiguous presence of immediate threat gives rise to intense fearful defensive behaviors ("fight-or-flight"), whereas more diffuse, unpredictable or uncertain threat cues produce "anxious" risk assessment behavior that is likely to persist until the uncertainty is resolved.

Individuals who have a low tolerance of uncertainty may be more vulnerable to stress, because the threshold for experiencing stress is lower for these individuals. In order to compensate for this feeling of uncertainty, they may feel the need to control their environment. Worrying is a way of trying to feel more in control by preparing for potentially aversive events.

Grupe & Nitschke (Grupe & Nitschke, 2013) proposed five processes that cause uncertainty to be so disruptive: inflated estimates of threat probability and cost, increased hypervigilance and threat attention, deficient safety learning, behavioral and cognitive avoidance, and heightened reactivity to threat uncertainty. According to the authors, uncertainty about a possible future threat may lead to avoidance, which deprives the individual of positive coping experiences and thus enforces the uncertainty, as well as the vulnerability, for the avoided

domain. Intolerance of uncertainty has been shown to be related to worry (Buhr & Dugas, 2006).

What is it that contributes to poor tolerance of uncertainty? Knowing from past experience that one is able to handle and overcome stressful events, the individual may develop a greater self-esteem and perceived control over their environment. However, having had the experience that such events have been very difficult to get through may cause the opposite when faced with new similar experiences, in addition to heightened sensitivity to stress through allostasis. Instead of feeling confident that they will get through it, they may feel vulnerable, insecure and anxious.

Takayesu and colleagues (Takayesu et al., 2014) found that emergency physicians with burnout were significantly less tolerant of uncertainty. Cooke and co-workers (Cooke, Doust & Steele, 2013) found that the same was true for general practitioners. Moreover, Kuhn and co-authors (Kuhn, Goldberg & Compton, 2009) found intolerance for uncertainty in the form of anxiety from concern for bad outcomes was strongly related to the emotional exhaustion dimension of burnout in emergency physicians. In addition, they found anxiety for bad outcomes to be more strongly related to emotional exhaustion than factors related to the practice environment, age and training.

In sum, uncertainty is a powerful stressor that can cause increased hypervigilance and threat attention. It is also likely to lead to avoidance, which will enforce the uncertainty. Individuals vary in their ability to tolerate uncertainty. Low tolerance of uncertainty has been linked to burnout, and especially the emotional exhaustion dimension.

3.6 Experienced meaning

Coping, as defined earlier, is an individual's cognitive and behavioral efforts to manage external or internal demands that are appraised as threatening or exceeding the individual's resources (Folkman et al., 1986). Lazarus later commented that this definition did not include the most important part of the coping process, namely the meaning behind the individual's thoughts and actions. Lazarus writes that the relational meaning that an individual constructs about an encounter with a stressful situation is the key influence on coping and its outcomes (Lazarus, 2000).

Folkman & Moskowitz describe global meaning as abstract, generalized meaning related to

individuals' fundamental assumptions, beliefs and expectations about themselves, the world and their place in it. Appraised or situational meaning refers to the evaluation of personal significance of a stressful situation in relation to the individual´s beliefs, goals, commitments and values (Folkman & Moskowitz, 2000). This appraised or situational meaning shapes the emotions the individual experiences in the stressful encounter and influences subsequent coping behavior (Lazarus & Folkman, 1984). Hence, a better specification of the stressors' meanings to individuals might help to explain the physical and psychological damage (or benefits) that can follow from stressful experiences. As Lazarus stated: "deep personal commitments to achievement and success may leave an individual threatened by the prospect of poor performance or failure in an evaluative situation, while lack of such commitment makes threat less likely or weaker" (Lazarus & Launier, 1978, pg. 295).

Kaplan (Kaplan, 1983) suggests that when individuals are required to behave or experience themselves in a way that is dissonant with their basic view of themselves or the world, that is, in a meaningless manner, they are likely to experience psychological distress. A closely related term to meaning is *sense of coherence*, or way of making sense of the world, defined as viewing the world as comprehensible, manageable and meaningful (Pines & Keinan, 2005). Comprehensibility is the extent to which events are perceived as making logical sense. Manageability is the extent to which a person feels they can cope. Meaningfulness is how much one feels that life makes sense. According to Antonovsky, individuals with a strong sense of coherence generally feel less stress and tension and believe that they can meet demands (Antonovsky, 1979). Research has identified three factors that seem to be particularly important for developing a strong sense of coherence: predictability, balance between under- and over-load and control (Eriksson, 2017). As previously mentioned, these are factors that also seem to protect against burnout. Not surprisingly, Levert and co-workers (Levert, Lucas, & Ortlepp, 2000) found that higher scores of sense of coherence was related to lower levels of burnout.

According to Pines (Pines, 1993), the root cause of burnout is individuals´ need to believe that their lives are meaningful. However, it seems that burnout is not the result of a generalized sense of insignificance, as evident in the fact that one can burn out in one area of life (e.g., work), but not in another (e.g., marriage). Pines & Keinan (Pines & Keinan, 2005) stated that burnout is not the result of viewing the world as meaningless, but to viewing one's contribution to it (or to one particular domain) as meaningless or insignificant. They also suggested that lack of significance reflects an imbalance between job demands and workers

resources. In fact, research has found a negative correlation between burnout and sense of significance at work (Pines, 2002).

One can assume that human health professionals in particular, want a meaningful involvement with their clients and their work. If they feel that what they are doing is insignificant and meaningless and believe that they lack any means of affecting their work, it may cause them significant stress. Individuals who expect to derive a sense of existential significance from their work, enter their careers idealistic and motivated with high goals and expectations. When their work reality fails to meet these expectations, they may feel that what they are doing is insignificant, it seems meaningless, they start feeling helpless and may begin to burn out (Pines & Keinan, 2005). A meaningful involvement with work is incompatible with avoiding work (Leiter, 1991). Perceiving ones work as meaningful may create a positive drive and a motivation to get through challenges. It may also contribute to a sense of direction or order in the individual's life. Perceiving ones work as meaningless may contribute to the opposite.

The ways in which people use meaning as part of the coping process has usually been described in relation to the reconstruction of global meaning (in an effort of making sense of what happened), in the aftermath of trauma (Folkman & Moskowitz, 2000) (e.g., "the earthquake was God´s will"). In relation to burnout, it has been found that certain coping strategies (planful problem-solving and positive reappraisal) can be used to create situational meaning in the ongoing context (Folkman & Moskowitz, 2000). For instance, planful problem-solving involves identifying goals, and thus may generate a sense of efficacy, mastery, and control. This process often requires letting go of previous goals that are no longer tenable and turning to new, realistic goals. Positive reappraisal involves focusing on the value of one´s efforts and appraising them positively (Folkman & Moskowitz, 2000). Restoring meaning may contribute to a greater sense of coherence and increases the individual´s sense of control and order.

In sum, differences in appraisal and coping can be contributed to the fact that events have different meanings to different individuals based on their beliefs (about themselves, the world and their place in it), goals, commitments, and values, as well as resources (as mentioned in previous sections). These factors determine what is at stake for the individual and when they are threatened, it is likely to also pose a threat to the individuals sense of coherence and experienced meaning. Higher sense of coherence, a sense of significance at work and coping-

strategies that recreate meaning (e.g. problem-focused and positive reappraisal) are related to lower levels of burnout. Perceiving one's work as meaningful might spark motivation and contribute to a sense of direction or order in the individual's life.

3.7 Emotional intelligence

As previously mentioned, the stressors in burnout are interpersonal and emotional. Emotions function like an internal compass that tells us what we want and need, what we like and dislike. They amplify our experiences. Although acknowledging our feelings is not always pleasant, it gives us valuable information. The more aware individuals are of the relationship between their thoughts, emotions and behaviors, the more likely they are to see how they contribute to stress and the better opportunity they have to address them.

A basis for effective emotion regulation is emotional intelligence, which comprises the ability to identify, understand, use, and regulate emotions (Mayer & Salovey, 1997). Thus, it could be considered a resource that can facilitate both effective appraisal and coping. Emotion regulation is a form of coping that is aimed at reducing the emotional threat-value of stressors. This is especially useful when working in helping professions, which entails close contact with people in need of help. The stressors that arise in this relationship make demands on the providers energy, their capacity for involvement with others, and their sense of professional efficacy (Maslach & Leiter, 2016). The relationship between provider and client and the emotions that develop in that interaction is a central part of helping professions. In this relationship, identifying and reflecting on emotions, regulating emotions appropriately, and coping with emotions effectively is of central importance.

Gleichgerrcht & Decety (Gleichgerrcht & Decety, 2013) conducted a large-scale study with 7584 physicians. They found that physicians who experienced difficulty identifying, describing emotions and regulating their negative emotions (in essence; emotional intelligence) seemed to be more prone to all the symptoms of burnout, that is, emotional exhaustion, detachment, and a low sense of accomplishment. They also found that emotionally dysregulated physicians showed lower scores on empathy and sympathy and higher scores of personal distress.

Empathy in clinical settings is an effortful task that requires cognitive flexibility and a great deal of self-regulation. People have a limited capacity for cognitive flexibility and self-regulation and depletion of these resources reduces empathic concern. These cognitive

resources may become drained in physicians' due to their demanding and stressful work (Gleichgerrcht & Decety, 2013). In fact, Larson & Yao (Larson & Yao, 2005), found that burnout erodes empathy, whereas Tei and co-authors (Tei et al., 2014) found that burnout severity was related to reduced empathy-related activity in the anterior insula and temporoparietal junction, as measured by fMRI. Not experiencing a certain level of empathy towards clients means losing the positive feeling of helping the clients and the experience of compassion satisfaction, which is an important source of meaning for many helping professionals. Hence, losing one's empathic capabilities may exacerbate burnout.

Lamothe and co-authors found that burnout was associated with lower scores on perspective taking. They suggested that the combination of both high empathic concern and perspective taking could prevent burnout. Their explanation was that the physician's emotional reaction and pro-social behavior (i.e., empathic concern) better regulates stress when physicians are good at adopting the view of the patients (i.e., perspective taking) (Lamothe, Boujut, Zenasni, & Sultan, 2014). Generally, being able to identify and regulate one's emotions and engage in self-other awareness can facilitate effective problem solving, communication, and conflict management. It makes one better equipped to help patients, and, hence, to experience mastery in clinical practice (Gleichgerrcht & Decety, 2013). Relatedly, Platsidou (Platsidou, 2010) found self-reported emotional intelligence to be negatively related to burnout.

Meanwhile, a too elevated level of empathy and sympathy may also lead to personal distress and compassion fatigue. Here, it has previously been found that burnout severity showed a positive correlation with empathic dispositional scores, suggesting that more empathic professionals are at greater risk of burnout (Tei et al., 2014). Over-involvement may also interfere with objectivity in treatment. People in helping professions who work with individuals in distress need to be able to adequately regulate emotions in order to prevent their distress from impairing their ability to help. If they fail to do so, they may experience emotional drainage over time, as demands exceeds resources. This may eventually lead to emotional exhaustion.

Some affective distance between physicians and their patients has therefore been considered desirable in order to maintain both clinical neutrality and the physician's emotional balance. Yet, clinicians need a high level of emotional regulation skills in order to balance being over-involved versus being too detached. In fact, the ability to identify, understand and verbalize emotions contributes to effective emotion regulation in oneself and others (Mayer & Salovey,

1997) and thereby to enhanced performance in jobs requiring interpersonal interaction. Accordingly, Brackett and co-authors (Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010) found that emotion regulation was positively associated with positive affect, principal support, job satisfaction, and one component of burnout, personal accomplishment.

In sum, emotional intelligence can be considered a resource that facilitates both effective appraisal and coping. Being able to identify and regulate emotions contributes to effective self-regulation, problem-solving and personal accomplishment and is likely to lead to a feeling of mastery and control over oneself and one's environment. A capacity for empathy may lead to compassion satisfaction, an important source of meaning, in helping professions. Generally, emotional regulation-skills may help the individual to find a balance between being over-involved and being too detached. On the other hand, low emotional intelligence, low levels of both sympathy and empathy, and high levels of sympathy without adequate emotion regulation skills are related to burnout.

3.8 Attachment style

Our early emotional bonds to our caregivers are referred to as attachment. Attachment can be categorized into secure, ambivalent, avoidant and disorganized. In short, a secure attachment is characterized by a consistent and validating caregiver and a child that feels free to explore, yet turn to its caregiver for support when needed. The other types of attachment have collectively been referred to as insecure, and entail a larger degree of uncertainty, anxiousness and restricted behavior in the child and a caregiver that is more inconsistent, negligent or abusive. According to Ainsworth´s theory (Ainsworth, 1979), attachment processes in early childhood create working models of attachment that function as inner models upon which individuals organize their life experiences. They lead to habitual patterns of interaction, that is, attachment styles, which shape how we appraise and cope with future stressors, including to what degree we use significant others as supportive resources.

Pines suggested that people with different attachment styles value different things in their work and cope differently during potentially burnout-causing situations. In stressful situations, the attachment styles guide how emotions will be regulated, how others' responses will be appraised and how the individual will respond (Pines, 2004). In fact, studies have shown that a secure attachment in childhood helps adults to positively appraise stressful situations and cope with them constructively. On the other hand, insecure attachment in

childhood (avoidant or anxious) leaves the individual more vulnerable to poor coping and maladjustment in adulthood (Pines, 2004). In addition, a positive correlation has been found between insecure attachment styles (avoidant or ambivalent) and burnout (Pines, 2004).

Mikulnincer & Florian (Mikulnincer & Florian, 1995) studied attachment style in young adults exposed to combat training and how it affected how they reacted to this experience. They found that, compared with secure individuals, ambivalent individuals reported more emotion-focused coping, appraised the experience as more threatening and appraised themselves as less capable of coping with the training. Avoidant individuals also appraised the training in more threatening terms, reported more distancing coping and less support seeking.

Schore believed that what a particular individual appraises to be stressful, how the individual (both consciously and unconsciously) responds to stressors, and how efficiently the individual copes with these stressors, is influenced by the attachment style with regard to whether the individual can allow himself to go to others for interpersonal support or not. That is, to allow for interactive regulation within an intimate relationship when their own autoregulatory mechanisms have temporarily failed (Schore, 2001). Also, Schore stated that the major environmental influence on the development of coping and emotion regulation is the attachment relationship. Moreover, early adverse relational experiences may cause permanent physiological reactivity in the limbic system, producing permanent functional impairment in regulating distress (Schore, 2001), as seen in the theories of allostasis and allostatic load.

While individuals who do not become burned out take care of themselves and seek support from others, individuals who become burned out may ignore stress signals and continue to push through. The individuals who become burned out have ignored signals of being exhausted again and again. In fact, Pines (Pines 2004) found that the more securely attached individuals were, the more likely they were to focus on the positive aspects in the situation and less likely to ignore potential causes of burnout. On the other hand, the more insecurely attached they were (ambivalent or avoidant) the less likely were they to make active attempts to solve the problem and the more likely they were to avoid the problem or to collapse. Ambivalent individuals are more likely to ignore causes of burnout, use drugs and try to distract themselves. They are also less likely to try to find the positive aspects of the situation. Avoidant individuals are less likely to talk about the problem with friends, family and colleagues and more likely to avoid or leave the situation (Pines, 2004).

Pines (Pines, 2004) also suggested that unresolved childhood issues may direct individuals to a particular career and influence their goals and expectations when entering that career, and, furthermore, that individuals with secure attachment styles enter their career with realistic expectations, while individuals with an insecure attachment styles enter their career with unrealistic expectations.

In sum, secure attachment can be considered a resource that facilitates effective coping and protects against burnout. As previously noted, repeated experiences with overcoming stressors may further build their self-esteem and their perceived control over their environment.

With regard to the entire section, the factors that contribute to individual susceptibilities to stress and burnout are as follows: threat appraisals, low perceived control, avoidant coping-style, lack of social support, limited work experience, young age, low levels of hardiness, neuroticism, low extraversion, low conscientiousness, low agreeableness, type-A behavior, external locus of control, low self-esteem, perfectionistic concern, low self-efficacy, negative affectivity, low sense of coherence, low tolerance of uncertainty, viewing ones contribution as insignificant or meaningless, low emotional intelligence, low sympathy and empathy and insecure attachment style. In general, factors that protect against burnout are traits opposite to those described above.

4. DISCUSSION AND CONCLUSION

The relationship between job stressors and burnout is well established in the literature. The purpose of this thesis was to review the possible mechanisms and dynamics of the individual variation in this relationship, which have yet been unclear. I have emphasized the review of general theories of stress, as well as individual factors that might explain the observed variance in burnout-rates within organizations.

The present thesis is not a systematic review but more an in-depth explorative project into a topic of interest. Here, I have, to the best of my capabilities, included and discussed those aspects which I have found to be the most relevant. Yet, the approach may be a limitation for the representativeness of the presented data. The strength of the present thesis, however, is that it encompasses a wide range of factors that may influence stress and burnout. Here, a systematic review would have been too time-consuming for a graduate thesis in psychology.

As I have shown, however, the etiology of burnout follows a complex bio-psycho-social trajectory that is impossible to disentangle completely. Many of the factors involved are

interdepend and should be viewed collectively in context. In fact, during the process of writing this thesis, it has become clear to me that all those above reviewed individual factors can be condensed down to three major determining factors, that is, physiological differences in stress reactivity and differences in appraisal and coping. Each of these three factors seem to be related to each of the three burnout symptoms. A heightened physiological reactivity to stress may facilitate emotional exhaustion, negative appraisals can advance the perception of reduced professional efficacy and ineffective coping can lead to depersonalization. The three determinants are in large part dependent upon what is at stake for the individual, their bio-psycho-social resources (e.g., good health, problem-solving skills, emotional intelligence, self-esteem, social support) and how well these resources can be implemented in a sustainable manner over time. Resources that contribute to perceived control, meaning and mastery can protect against depletion and burnout.

While humans depend on moderate levels of stress within limited periods in order to promote growth and development, high levels of stress over prolonged periods are damaging, both psychologically and biologically. As first described by Selye (Lovallo, 2005) and later by McEwan and Stellar (McEvan & Stellar, 1993), long-term adaptive changes to stress comes with a physiological cost which, in fact, it may increase the susceptibility to additional stress (Eriksson & Wallin, 2004). These adaptive changes entail an increased circulation and metabolism of hormones such as cortisol, which enhances the body's emergency apparatus, but limits regeneration, and leads to a depletion of resources across multiple domains. This includes suppression of the immune system (Ganzel et al., 2010) and degradation of organic brain structures that regulate cognition, emotions and behavior (Danese & McEven, 2012). Thus, burnout may be viewed as an end-stage, where the wear and tear of stress over time degrades and depletes the individual, leading to a collapse and an increased sensitivity for more stress. Important to note however, the described physiological mechanisms are not specific to burnout, but may yield a wide range of health-related issues with both somatic and psychological manifestations.

Thus, in order to further explain burnout, one needs to take into account patterns of appraisal (section 3.1) and coping (section 3.2) in the specific stress-related context, that is, the work place. Similar to physiological patterns, appraisal and coping largely reflect habitual patterns that are developed over time through the individuals' unique encounters with stressors. These patterns can explain some of the individual variance in burnout. As described by Lazarus and Launier (Lazarus & Launier, 1978), a stressful situation can be appraised as a challenge, as

irrelevant or as a threat depending on the individual, which will further determine the degree of the stress responses.

An appraised threat may be highly real, but also a self-fulfilling prophecy if it is overvalued because the stress response in itself may become detrimental. In fact, the stress response is actually more dependent upon perceived control than objective control over stressors (Skinner, 1996). The perception of stressors as controllable may reflect positive self-appraisals, i.e., a confidence in one's ability to overcome stressors, which again may reflect an excess of resources (section 3.3.) and a secure attachment (section 3.8). Such positive self-appraisals are negatively related to burnout (Alarcon et al, 2009). Concepts that are closely related to perceived control include locus of control, self-efficacy and autonomy (Skinner, 1996), which are features that promote adaptive coping (Schmitz, Neumann & Opperman, 2000).

Furthermore, the stress response depends on the appraised relationship between the individual and the current context. For instance, events that exceed or pose a threat to one's resources are highly stressful (Lazarus & Folkman, 1984). Also, differences in appraisal can be contributed to the fact that events have different meanings to different individuals based on their beliefs, goals, commitments, values (Folkman & Moskowitz, 2000) and resources (Hobfoll 1989). These factors determine what is at stake for the individual. When demands exceed resources over a prolonged period of time, the individual becomes depleted by the over-expenditure of biological stress mediators, such as hormones and neurotransmitters, and by the disillusionment upon one's confidence and work engagement (Maslach et al., 2001). Moreover, in a state of disillusionment the individual is prevented from experiencing meaning, control and mastery. This is exactly what is observed in burnout, and is more likely to happen to individuals who are idealistic (Pines, 2002), give too much of themselves (Tei et al., 2014), ignore signals of stress (Pines 2004) and work too hard. Here, it is an advantage for the individual to acknowledge their personal contribution in the process leading to burnout. If the individual is capable of appraising a change-oriented process as a choice, rather than as a forced expression of invalidity, it yields an excellent opportunity for health-promoting change.

This leads us to how individuals cope which such threats, as effective coping decreases the intensity and duration of the stress response, keeping it at manageable levels (Lovallo, 2005). The apparent preventive solution to burnout may to become more cynical and selfish (at least

in helping professions), but not too detached to lose the important asset of having people skills, such as empathy (Lamothe, Boujut, Zenasni, & Sultan, 2014). Finding such a balance demands a certain level of emotional intelligence (Mayer & Salovey, 1997). Moreover, effective coping depends on other available resources (e.g., problem-solving skills, interpersonal skills, social support) and how well they can be implemented in a given context and over time. It is an ever-changing process which develops through experiences with stressful situations. Past successes and failures in similar situations can contribute to feelings of mastery or helplessness. Many successes can point to either a favorable environment, an abundance of resources, or both. Repeated experiences of successful coping, that is, events that are appraised as controllable, may increase positive self-appraisals such as self-esteem. Repeated experiences of unsuccessful coping (events that are perceived as uncontrollable) may cause the opposite (Thompson, 19819).

Which type of coping strategy that is most effective clearly depends on the situation. However, habitual patterns of coping styles and strategies reveal traits and characteristics of the individual that may explain some of the observed variance in the successfulness in responding to stressors. For example, an employee who is mastery-oriented (i.e., who generates alternative solutions to a problem, focuses on task-relevant information, and uses problem-solving strategies) is more likely to adaptively overcome the encountered stressors than employees who become overwhelmed by feelings of helplessness. In addition, an individual with a secure attachment style will more likely seek help and comfort in trusted others in times of need, in comparison to individuals with insecure attachments styles (Pines, 2004). Finally, some coping styles are maladaptive in the sense that they only yield an interim stress-relief, with a subsequent long-term increase of stress. In this regard, a lack of tolerance for uncertainty will often lead to avoidant coping strategies (Grupe & Nitschke, 2013) (e.g., substance abuse, denial, social isolation and detachment) that may render the individual more vulnerable for the avoided domain, which backlashes when avoidance no longer is possible.

In sum, the interplay of susceptibility factors in stress and their contribution in burnout is very complex, but one simplified way of looking at it can be sketched as follows: Individuals with limited bio-psycho-social resources (e.g., heightened stress reactivity, poor health, low emotional intelligence, poor problem-solving skills, insecure attachment, low self-esteem, negative affectivity, low social support) are more likely to appraise stressors as uncontrollable because demands are more likely to exceed their resources. In response, they may feel anxiety and fearfulness, which further heighten their stress response and result in heightened vigilance

and threat attention. Since they appraise stressors as uncontrollable, they are more likely to turn to inactive coping (e.g., avoidance, self-medication), making goal-attainment more unlikely, which in turn leads to further diminished perceived control. Habitual patterns of interactions of this nature can over time lead to heightened stress reactivity through allostatic load. Additionally, these patterns can lead to further diminished perceived control, diminished experienced meaning, lower self-esteem, vulnerability, helplessness and exhaustion, and, thus, a further limitation of their resources.

On the other hand, individuals with many bio-psycho-social resources (e.g., healthy stress-response, good health, high emotional intelligence, good problem-solving skills, secure attachment, high self-esteem, positive affectivity, good social support) are more likely to appraise stressors as controllable. In response, they may feel eagerness and other positive emotions, which dampens the stress response. Since the stressors are not too much for them to handle, they are more likely to engage in active forms of coping (e.g., planful problem-solving, positive reappraisal). Perceiving stressors as controllable spurs motivation and goal-directed behavior, making goal-attainment more likely, which leads to a feeling of mastery and enhanced perceived control. Habitual patterns of interactions of this nature can over time lead to further enhanced mastery and perceived control, enhanced experienced meaning, higher self-esteem and enhanced personal accomplishment, and thus, a further strengthening of their resources.

In conclusion, during the writing of this thesis I have become aware of the fact that individuals in helping professions, in particular, are more prone to burnout, thus, putting myself at risk as a coming psychologist. In addition, I feel eager and idealistic, yet being unexperienced and probably naïve, increasing the risk even more. Hence, I feel that the topic of the present thesis is important, both personally and for my coming patients. In this regard, advises by Maslach & Goldberg may be valuable (Maslach & Goldberg, 1998). They suggested that increasing one's nurturing engagement with work can be done by creating a better "fit" between the individual and their work environment, thus ensuring that one's resources harmonize with work demands. In addition, they have come up with several recommendations for preventing burnout: a) changing work patterns, b) developing adaptive coping skills, c) using social support (both from colleagues and family), d) developing a more relaxed lifestyle, e) improvements in health (nutrition and exercise), and f) developing a better self- understanding. These should be useful initiatives to keep work related stress at manageable levels considering the understanding of burnout presented in the present thesis.

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