

A Factor Analytic Examination of Burnout

by

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Abstract

With the challenges associated with the COVID-19 pandemic, burnout is an increasingly popular topic in the public discourse. However, scientific research displays a lack of consensus about burnout's underlying factor structure. This study seeks to establish burnout's factor structure using exploratory and confirmatory factor analysis with data from six major burnout measures: the Maslach Burnout Inventory-General Survey (MBI-GS), Shirom-Melamed Burnout Measure (SMBM), the Oldenburg Burnout Inventory (OLBI), the Burnout Measure, Short Version (BMS), the Copenhagen Burnout Inventory (CBI), and the Burnout Assessment Tool (BAT). Results of exploratory and confirmatory factor analysis indicate a four-factor structure for the burnout construct comprised of exhaustion, cognitive weariness, disengagement/decreased professional efficacy, and emotional impairment.

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List of Abbreviations

| | |
|--------|---|
| BAT | Burnout Assessment Tool |
| BMS | Burnout Measure-Short Version |
| CBI | Copenhagen Burnout Inventory |
| COR | Conservation of Resources Theory |
| ICD-11 | International Classification of Diseases 11 th Edition |
| JD-R | Job Demands-Resources Theory |
| MBI-GS | Maslach Burnout Inventory-General Survey |
| OLBI | Oldenburg Burnout Inventory |
| SMBM | Shirom-Melamed Burnout Measure |

A Factor Analytic Examination of Burnout

Burnout has been an increasingly prevalent topic in industrial-organizational psychology since its introduction in the 1970s and has become a prominent subject in public discourse. In 2019, the World Health Organization added workplace burnout to its International Classification of Diseases (ICD-11), defined as “a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed” (World Health Organization, 2019). Challenges associated with the COVID-19 pandemic have made burnout even more central to conversations about health, well-being, and job performance outcomes.

The recruitment network company Indeed found in its January 2021 surveys that 59% of millennials, 58% of Gen Z, 31% of Baby Boomers, and 24% of Gen X reported experiencing burnout, all of which were higher than pre-pandemic levels (Threlkeld, 2021). According to the survey, 67% of workers indicated that the pandemic had exacerbated employee burnout. The same report found that remote workers were more likely to report job burnout than those who attended work in person. With workers leaving their jobs in large numbers in the “Great Resignation,” career experts have identified burnout as one of the possible contributing causes (Stahl, 2021).

While the concept of burnout is well known, a consistently agreed-upon definition of burnout is illusive, particularly in terms of its key dimensions. On one side of this debate, burnout is conceptualized as an extreme form of exhaustion (Pines et al., 1981). From another perspective, burnout is a syndrome composed of emotional exhaustion, depersonalization, and reduced sense of personal accomplishment (Maslach & Jackson, 1981). From these and other divergent conceptualizations, several reliable burnout measures have been developed; however, very few studies have compared the underlying dimensions of the various measures (Qiao &

Schaufeli, 2011). Consequently, whereas burnout has been studied extensively, consensus on burnout's core dimensions or factors has yet to be reached. Most of the various theoretical approaches agree that burnout consists of general, emotional, cognitive, or physical exhaustion. For the purposes of the current research, burnout is also defined as exhaustion that is a response to sustained work-related stress (Shirom, 2010).

Studies have been conducted to compare the psychometric properties (e.g., reliability and validity) of various burnout measures; however, few have compared the underlying factor structure proposed by different researchers. Two notable studies have examined this question. First, Schaufeli and Van Dierendonck (1993) conducted analyses that supported the MBI's proposed three-factor structure and also a three-factor structure for the BM in independent samples. Qiao and Schaufeli (2011) conducted a series of confirmatory factor analyses with the MBI, SMBM, BM, and OLBI. According to their research, the best-fitting model for burnout was a two-factor structure consisting of exhaustion and withdrawal.

Since the study by Qiao and Schaufeli mentioned above, the BAT has been developed (also by Schaufeli and colleagues; 2020) and the CBI has gained some traction in the research literature. The present study includes the Qiao and Schaufeli (2011) measures as well as the BAT and CBI, aiming to provide a more complete analysis to conclusively establish burnout's underlying factor structure. As reflected in the ICD-11 definition, burnout research has agreed upon exhaustion as a key element of burnout, but without a unified definition based on clear factor structure or cohesive theoretical framework conclusions will continue to be drawn about burnout that may refer to disparate constructs. If, for example, this research sheds light on what kind or kinds of exhaustion (general, emotional, physical, or cognitive) comprise burnout, this would represent a significant clarification for the construct for applied and theoretical research to

build upon. A potential benefit of this research is the consolidation of overlapping terms, such as cynicism, disengagement, and mental distance. Considering there are currently numerous proposed dimensions, a more parsimonious burnout definition would contribute to the efficiency of future research.

Lacking a definitive answer regarding the number of dimensions that comprise the burnout concept, researchers have frequently chosen to use the MBI-GS subscale of emotional exhaustion, whereas others use the emotional exhaustion and depersonalization scales and still others use the first two along with the personal accomplishment subscale (Cox et al., 2005). Discovering the underlying factor structure of the burnout construct would allow such research decisions to be guided by data. Moreover, understanding burnout's underlying factor structure will clarify whether exhaustion should be a single or multi-faceted constituent of the burnout construct. Specifically, should burnout be thought of as all-encompassing exhaustion, emotional exhaustion alone, or do cognitive and physical forms of exhaustion have distinct roles as well?

This research investigates the ways in which six of the most widely cited burnout measures diverge and overlap, with the purpose of identifying burnout's core dimensions. The measures in the proposed research are the Maslach Burnout Inventory-General Survey (MBI-GS), Shirom-Melamed Burnout Measure (SMBM), the Oldenburg Burnout Inventory (OLBI), the Burnout Measure, Short Version (BMS), the Copenhagen Burnout Inventory (CBI), and the Burnout Assessment Tool (BAT). A comprehensive understanding of burnout's underlying structure will have implications for both theory and practice. Burnout's factor structure may align with some theoretical perspectives better than others, suggesting a framework for conducting research regarding antecedents and outcomes. Perhaps more tangibly, researchers and practitioners can use findings about burnout's factor structure to select the existing burnout

measure that most closely assesses the burnout construct or create a new measure that more accurately assesses the construct. More broadly, a unified definition of burnout will move research forward, as it will allow a more direct comparison of findings and prevent confusion. Additionally, burnout prevention and intervention efforts can be developed, implemented, and evaluated on the basis of burnout’s factors, and for this reason be potentially more targeted and effective.

Theories of Burnout

There are numerous approaches to burnout, each including its own theoretical foundation. Burnout research comparing the theoretical frameworks of burnout is lacking, and the present study seeks to uncover information that would be valuable in indicating support for a theoretical model. Table 1 presents the theoretical approaches of the burnout measures examined in this research.

Table 1
Theoretical Foundations of Burnout Paradigms

| Measure | Theoretical Basis |
|---------|--|
| MBI | Questionnaires, Interviews, and Factor Analysis |
| SMBM | Conservation of Resources Theory (COR) |
| OLBI | Job Demands-Resources Theory (JD-R) |
| BM | Existential and Psychodynamic Theories |
| CBI | Schemata, Causal Attribution, and Situational Models of Disease Theories |
| BAT | “Inability” and “Unwillingness” |

To begin, the origins of the MBI are largely atheoretical. The first version of the MBI, the MBI Human Services Survey (MBI-HSS) was designed to assess burnout in helping professions (Maslach & Jackson, 1981). From interview and questionnaire data, Maslach and Jackson (1981) generated 47 original items, which they administered to 605 individuals in health and service professions. The resulting factor analysis showed that 10 factors accounted for a vast majority of

the variance. From the 25 items that were retained, a four-factor structure emerged, and the three subscales with eigenvalues greater than one became the three original dimensions of the MBI: emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Jackson, 1981). Several subsequent versions of the MBI have been developed, such as the MBI for Educators (MBI-ES), the MBI Human Services Survey for Medical Personnel (MBI-HSS [MP]), the MBI General Survey (MBI-GS), and the MBI General Survey for Students (MBI-GS [S]; Kavan, 2021). Of interest to the present study, the MBI-GS was formed to assess burnout in any employee occupation. For the MBI-GS, 28 items (including items from the MBI-HSS and new items) were administered to an international sample and, after factor analysis, 16 items were retained in three scales: exhaustion, cynicism, and professional efficacy (Kavan, 2021). The methods used to generate the versions of the MBI were inductive and were not tied to a particular psychological theory.

Conservation of resources (COR) theory has been proposed as one of the possible theoretical explanations as to how burnout occurs and is the basis for the SMBM (Shirom, 1989). In COR, it is conceptualized that humans are motivated to gain and to retain resources and that the loss, threat of loss, and lack of replenishment of resources results in psychological stress (Hobfoll, 1989). Resources are objects (e.g., a home), personal characteristics (e.g., resilience), conditions (e.g., seniority in an organization), or energies (e.g., time or knowledge) that allow individuals to further gain or retain advantageous objects, personal characteristics, conditions, or energies. Self-esteem, learned resourcefulness, socioeconomic status, and employment are additional examples of resources. Resources are valuable because of their utility and because of their symbolic meaning: they are often important for how people define themselves (Hobfoll, 1989). When individuals are not in a state of stress, COR postulates that they strategically bank

resources to offset future losses or take steps to prevent resource loss. When individuals are in a state of stress, they allocate the resources they have or draw on resources in the environment to stem the tide of loss and to replace lost resources. It is important to note that an individual's cognitive appraisal of a situation affects whether an event is experienced as a threat or an opportunity. Thus, changing one's interpretation of a stressor is a useful strategy in the prevention of resource loss (Hobfoll, 1989). Resources may be gained or lost in resource spirals.

The Job Demands-Resources (JD-R) model provides a parallel, alternate theoretical framework to explain the occurrence of burnout. The Oldenburg Burnout Inventory (OLBI) is based on the JD-R model (Demerouti et al., 2001). In the JD-R model, conditions of the work environment fall into one of two categories: job demands or job resources. Job demands are aspects of a job that require continued physical or mental effort. Job demands can come from physical, social, or organizational elements of work. Job demands are associated with physical and mental costs, such as exhaustion (Demerouti et al., 2001). Faced with job demands such as a loud work environment or extreme time pressure for completing work tasks, an individual exerts effort to protect themselves. The results are in-the-moment strategy adjustments, after-event fatigue, and long-term state of exhaustion (Demerouti et al., 2001). Job resources, on the other hand, are health-protecting factors and can be physical, psychological, social, or organizational elements of a job. Job resources help the achievement of work goals, reduce job demands, and promote personal growth and development (Demerouti et al., 2001). Examples of organizational resources are job control, participation in decision making, and task variety. Examples of social resources include support from family members, supervisors, colleagues, or peer groups. The JD-R model proposes an interaction between job demands and job resources leads to burnout, such that job demands result in exhaustion and a lack of job resources results in withdrawal and

disengagement from work (Demerouti et al., 2001). More recent research has added that successful self-regulation can mitigate the effects of burnout in the JD-R model (Bakker & de Vries, 2021).

The Burnout Measure (BM) and the Burnout Measure, Short Version (BMS), interestingly, are situated in existential and psychodynamic philosophies (Malach-Pines, 2002). The existential framework posits that, innately, people want to believe that their lives and actions have meaning. From the existential viewpoint, humans have a drive to be the hero in their own life narrative. Whereas religion provides meaning for some, work provides meaning for others. Psychoanalytic theory is used to explain why an individual chooses to derive existential significance from the particular career that they have chosen. Namely, individuals job choices reflect unconscious needs, childhood experiences, and familial expectations (Pines, 2000). Thus, when a person's job does not fulfill their quest for meaning, burnout occurs (Malach-Pines, 2002).

For its part, the CBI perspective is based on schemata, causal attribution, and situational models of disease theories (Kristensen et al., 2005). A schema is “a frames of reference for understanding symptoms, which is typical for the person but influenced by the person's social role and position and by the whole culture of society” (Kristensen et al., 2005, p. 197). Causal attributions fit within schemata in that they provide the mental outline for why an event has occurred (Harvey & Weary, 1984). Symptoms may be attributed to internal vs. external, stable vs. unstable, global vs. specific, and controllable vs. uncontrollable factors, all of which will influence how it is interpreted by the individual (Kristensen et al., 2005). In turn, schemata and causal attribution are circumscribed by situational models of illness. A situational model of illness describes the individual as a social and psychological actor who is located within a social

context (Alonzo, 1979). The situational model includes the degree to which a person is immersed in a situation, power dynamics among the individuals present, available coping resources, symptom meaning, and personal characteristics such as age and gender (Alonzo, 1979). As such, situational model of illness incorporates how the individual copes with and influences an illness (in this case, burnout) over time (Kristensen et al., 2005).

As for the BAT, Schaufeli et al. (2020) followed a qualitative research process. Interviews were conducted with 49 mental health and medical professionals who work with clients experiencing burnout, and qualitative data analysis software was used to group the symptoms, causes, and description of burnout's progression over time into categories. Each of the seven categories identified by this process became one of the BAT's dimensions (Schaufeli et al., 2020). In an earlier work, Schaufeli and Taris (2005) proposed that "burnout is a combination of exhaustion (lack of energy) and withdrawal (lack of motivation)" (p. 260). Schaufeli and Taris used the term "inability" for exhaustion and "unwillingness" for withdrawal, explaining that individuals experiencing burnout are unable and unwilling to exert further effort to accomplish work tasks. The BAT's primary dimensions of exhaustion, mental distancing, and impaired emotional and cognitive control are the core dimensions and fall into the exhaustion and withdrawal categories. The three remaining dimensions (depressed mood, psychological distress, and psychosomatic complaints) are classified as secondary dimensions because they do not fit into this conceptual framework and can also be confounded with other disorders (Schaufeli et al., 2020).

Approaches to Burnout Measurement

The earliest mentions of burnout appear in the psychological literature in the 1970s (Freudenberger, 1974; Maslach, 1976). Since that time, many burnout measures have been

constructed and validated. Exhaustion in some form is a key component to nearly all major measures, but outlier dimensions have been proposed that appear in lone or only a few measures. Shirom (1989) makes the point that, on top of naming a previously unnamed phenomenon, the term burnout is more socially acceptable than terms like depression, anxiety, and ineptitude. Moreover, the beginning of the study of burnout coincided with a steady decrease in funding for helping professions such as healthcare, social work, teaching, and mental health services (Shirom, 1989). Although initially limited to professions oriented to people service, burnout was quickly applied to other areas such as professional athletics (Smith, 1986). The term “burnout” was adopted from participant responses, not created by researchers, which has the advantage of conveying face relevance and promoting acceptance in the greater population (Shirom, 1989). However, a challenge that accompanies taking a term from the public discourse is that the term may be used to include too many or inconsistent constructs, which has been the case with burnout since its introduction into the literature (Freudenberger, 1983). To illustrate this dynamic, writer Anne Helen Petersen recently defined the experience of burnout as “you go until you can’t go anymore and then you keep going [...] the feeling that everything in your life flattens into one long to-do list,” incorporating elements of stress, anxiety and depression; this articulation of burnout tracks with the way it is often used in the public discourse, but it lacks the precision of psychologically validated definitions (Grant, 2018-present). Yet within the research community, there are numerous validated frameworks of burnout and corresponding measures. Table 2 summarizes the dimensions of burnout put forward by the burnout measures discussed in this paper.

Table 2
Dimensions of Burnout by Measure

| Burnout Measure | Dimension | | | | | |
|-----------------|--------------------|--|--|---------------------|-----------------------|--|
| | General Exhaustion | Emotional Exhaustion/ Impaired Emotional Control | Cognitive Exhaustion/ Impaired Cognitive Control | Physical Exhaustion | Professional Efficacy | Cynicism/ Disengagement/ Mental Distance/ Withdrawal |
| MBI | | x | | | x | x |
| SMBM | | x | x | x | | |
| OLBI | x | | | | | x |
| BM | | x | x | x | | |
| CBI | | | x | x | | |
| BAT | x | x | x | | | x |

Note: MBI = Maslach Burnout Inventory; SMBM = Shirom-Melamed Burnout Measure; OLBI = Oldenburg Burnout Inventory; BM = Burnout Measure; CBI = Copenhagen Burnout Inventory; BAT = Burnout Assessment Tool

Maslach Burnout Inventory (MBI)

The MBI was created for use specifically within the human services sector and has its basis in questionnaires and interviews, resulting in a factor analytic approach to its items (Maslach & Jackson, 1981). The original MBI subdimensions are emotional exhaustion, personal accomplishment, and depersonalization (Maslach & Jackson, 1981). Emotional exhaustion is defined as a depletion of emotional resources that make it difficult on the psychological level to give of themselves; but some, such as “I feel used up at the end of the workday,” could be interpreted as physical, cognitive, emotional, or a combination of kinds of exhaustion (Maslach & Jackson, 1981). Personal accomplishment is defined as negative self-evaluations of one’s work, and the items reflect one’s attitude toward their success with work-related tasks. Depersonalization is defined as a cynical attitude toward clients, and the items convey a sense of impersonal or calloused interactions. The MBI was adapted for use across occupations (MBI-

GS), and the subdimensions have been recharacterized as emotional exhaustion, cynicism, and professional efficacy (Maslach et al., 1996). Personal accomplishment differs from professional efficacy in that professional efficacy encompasses feelings toward all work tasks and is not limited to those that have to do with clients; similarly, depersonalization and cynicism differ in that cynicism refers to one's attitude toward work broadly (Taris et al., 1999).

Shirom-Melamed Burnout Measure (SMBM)

The SMBM framework for burnout is based on COR theory (Shirom & Melamed, 2006). Energy is the primary resource in the SMBM framework, and when energetic resources decline below a certain level, burnout has occurred. In the SMBM paradigm, resource depletion is the sole mechanism for burnout; other psychological concepts, stress appraisals, or coping behaviors are not part of the SMBM model for burnout. The SMBM subdimensions of burnout are emotional exhaustion, physical fatigue, and cognitive weariness. Physical fatigue encompasses tiredness and low energy levels. Emotional exhaustion refers to lack of interpersonal energy. Cognitive weariness is feeling that one's thinking is slow and mental agility is reduced (Melamed et al., 2006).

Oldenburg Burnout Inventory (OLBI)

The OLBI is based on the JD-R framework, wherein burnout is a result of exposure to strain over time (Demerouti et al., 2002). The two dimensions of the OLBI model are exhaustion and disengagement, where exhaustion includes emotional, physical, and cognitive aspects (Demerouti et al., 2001). Disengagement, similar to the cynicism dimension of the MBI-GS, refers to an individual's negative feelings toward and psychological distancing from work. In contrast to the MBI-GS, the OLBI scales are each composed of both positively and negatively worded items, which prevents the psychometric problem of acquiescence tendencies (Demerouti

et al., 2001). Exhaustion, as defined in the OLBI framework, has been found to be associated with mental fatigue, whereas disengagement has been found to be associated with the experience of monotony (Demerouti et al., 2002).

The Burnout Measure (BM)

Drawing on case studies and interviews, the BM was created for application to any emotionally demanding situation, whether work-related, relational, or otherwise (Antoniou & Cooper, 2005). The theoretical basis for the BM is existential theory, wherein people have an innate drive to derive meaning from their lives and frequently seek this meaning in work or committed relationships (Malach-Pines et al., 2011). Taken a step further, seeking significance in work is a psychological strategy to protect against the fear of death (Yalom, 1980). When expectations for finding significance are not met, the individual loses hope, and this leads to burnout. In contrast to the COR framework of the SMBM, even with extreme demands on one's time and energy, if one believes that what they are doing makes a difference, burnout is not thought to occur (Malach-Pines et al., 2011). The BM and its abbreviated version, the BMS, measure physical exhaustion, emotional exhaustion, and mental exhaustion. Physical exhaustion refers to feelings of weakness or sickness, as well as sleep difficulties. Emotional exhaustion refers to feelings of depression and hopelessness. Mental exhaustion is feelings of worthlessness, failure, and disappointment with others (Malach-Pines, 2005).

Copenhagen Burnout Inventory (CBI)

The CBI is built on the burnout definitions formulated by Schaufeli, Pines, Aronson, and Shirom, with exhaustion that is attributed to specific domains of a person's life as its central tenet (Kristensen et al., 2005). The CBI draws on theoretical themes of causal attributions and situational models of disease (Kristensen et al., 2005). Specifically, when people experience

symptoms of poor health, they try to understand why the symptoms have occurred because of the human tendency to understand, predict, and control as much as possible about our lives. Then, the course of the illness is influenced by the person, their perceptions, and actions. Thus, in the CBI framework, burnout is defined by the individual's attribution of their symptoms and corresponding response. CBI subdimensions are personal burnout, work-related burnout, and client-related burnout. In this framework, personal burnout is defined as levels of physical and psychological fatigue experienced by an individual. Work-related burnout is defined as the level of physical and psychological fatigue, as well as exhaustion, that a person perceives are related to their work. Client-related burnout is defined as the level of physical and psychological fatigue and exhaustion that a person receives to be related to their work with clients.

Burnout Assessment Tool (BAT)

The BAT was generated from interviews with general practice physicians, psychologists, and occupational physicians, followed by a factor analytic process (Schaufeli et al., 2020). The BAT views burnout as the inability and unwillingness to expend any further effort on a work task. Inability is the proposed energetic component of burnout and relates to decreased drive. Unwillingness is a motivational dimension and relates to increased resistance or disengagement. The BAT measures both core dimensions (exhaustion, mental distance, impaired emotional control, and impaired cognitive control) and secondary dimensions of burnout (psychological complaints and psychosomatic complaints). In this framework, exhaustion is analogous to extreme tiredness. Mental distance is an individual's level of mental detachment from work. Impaired emotional control refers to reduced emotional regulation ability. Impaired cognitive control refers to reduced mental functioning. Psychological complaints are experiences of

psychological distress, and psychosomatic complaints are physical discomforts that may be exacerbated by psychological influences (Schaufeli et al., 2020).

While the MBI has been used in approximately 88% of published research on burnout, it has received criticism for its item wording, interpretability, and construct definitions (Schaufeli et al., 2020). All the items on the MBI-GS scales of exhaustion and cynicism are phrased negatively, whereas the all the items on the professional efficacy scale are phrased positively, artefacts of which can cause psychometric issues. To rectify this, Demerouti and colleagues (2003) have proposed that the positively worded items from the OLBI be added to the MBI-GS; however, this solution is cumbersome and has not been widely adopted. MBI subscales are meant to be interpreted separately. As a result, no overall burnout score can be computed from the three subscales, which makes subsequent analyses or recommendations unnecessarily complex. However, researchers have developed cutoff scores from the subscales to differentiate “burned out” from “non-burned out” groups (Schaufeli et al., 2001). While burnout has been linked to cognitive and physical outcomes such as reduced mental functioning and sleep problems, the MBI does not account for or address these (Schaufeli et al., 2020). Others have criticized the MBI’s subdimensions, describing them as a non-cohesive set including an individual state (emotional exhaustion), a coping strategy (cynicism), and an effect (professional efficacy) (Kristensen et al., 2005). Nonetheless, it has been argued that other psychological constructs, such as anxiety, include both states and coping strategies, so this is not necessarily a problem for the MBI (Schaufeli et al., 2001). Studies that have explored the psychometric properties of the MBI have found that a five-factor structure (where two of its dimensions are divided in two) presents a clearer picture of the factor structure of burnout, which is inconsistent with the original formulation (Densten, 2001). Moreover, the general version of the MBI (MBI-

GS) is applicable across job domains, but its use is still limited to work contexts (Kristensen et al., 2005). For these reasons, questions persist as to whether the MBI should continue as the principal measure in the burnout literature and whether it is psychometrically valid to use the emotional exhaustion subscale as a stand-alone burnout measure.

It is clear that exhaustion in some form is burnout's defining feature. Emotional exhaustion appears in each of the burnout frameworks discussed except for the OLBI and CBI. Physical and cognitive exhaustion of some kind are part of the SMBM, BM, and BAT frameworks. Given the interrelatedness of physical, mental, and emotional exhaustion, a key question is whether exhaustion in burnout should be separated into distinct types or thought of as a single entity. Moreover, other dimensions of burnout appear in only one measure, such as the MBI-GS's professional efficacy or the BAT's psychological and psychosomatic complaints.

Another question relates to the contexts in which burnout measures are best used. For example, the BM was designed for use in any demanding situation, and the CBI has a personal burnout subscale. Evidently, these burnout scales and subscales would be appropriate for use in non-work domains. However, the CBI also has a scale that focuses on client-related burnout, which is less appropriate than the other measures for work that is not client facing. It will be beneficial to discover whether general or domain-specific burnout measures assess the same overall construct. This information would meaningfully contribute to the conversation as to whether burnout can truly be applied to any situation or remain a work-related construct.

Dimensionality of Burnout

Qualitative research has indicated that people with burnout report 12 themes of their experience: exhaustion, anxiety/stress, indifference, depression, irritability, sleep disturbances, lack of motivation, issues with executive functioning, reduced performance, withdrawal from

others, physical symptoms, and emotional fragility (Tavella & Parker, 2020). While burnout is expected to have fewer than 12 dimensions, this data provides a broad picture of burnout's indicators. To date, few studies have compared the factor structure of multiple burnout measures. In a study that compared the MBI and BM using confirmatory factor analysis (CFA), a two-dimensional structure was identified, with emotional exhaustion and negative attitude towards others and one's job performance as the constituent factors (Schaufeli & Van Dierendonck, 1993). In a study examining the MBI-GS, BM, SMBM, and OLBI, the results of CFA indicated that burnout is a two-dimensional construct, with exhaustion and withdrawal factors (Qiao & Schaufeli, 2011). Similarly, Demerouti et al. (2001) found that the MBI-GS's cynicism and the OLBI's disengagement loaded on a single factor which they termed negative attitudes, and the MBI-GS's emotional exhaustion and OLBI's exhaustion loaded on a single factor which they termed exhaustion. These results are consistent with all major burnout definitions, which propose exhaustion as its primary feature.

Research Questions

Of the burnout paradigms that were created from observations and interviews, both the BM and the MBI include an emotional exhaustion component, as does the SMBM. Interestingly, the BAT separates exhaustion from emotional control. In the CBI, exhaustion is typically physical or psychological. While exhaustion of some kind has been agreed upon as a key facet of burnout, it is unclear as to exactly what kind or kinds of exhaustion burnout entails. Combining the information from qualitative and CFA studies, it can be hypothesized that emotional exhaustion will remain the principal dimension of burnout. Given that the MBI-GS, OLBI, and BAT have concepts of withdrawal (cynicism, disengagement, and mental distance, respectively), withdrawal may constitute another dimension. The following are explored:

Research question 1: Does the factor structure reflect a uni- or multi-dimensional construct?

Research question 2: If a multi-dimensional construct, what are the unique factors of burnout?

Study 1

Methods

Participants and Procedure

Participants, adults living in the U.S. who work at least 35 hours a week, were recruited through Amazon Mechanical Turk (MTurk). Although it depends on specific data characteristics, such as the magnitude of factor loadings (Velicer & Fava, 1998), a general rule for factor analytic studies is that five participants should be included per survey item when the sample exceeds 100 (Streiner, 1994), and others have called for a 10 to one ratio (Everitt, 1975). Combined, the MBI, SMBM, OLBI, BMS, CBI, and BAT have a total of 92 items, which, using the 5:1 ratio prompts a sample size minimum of 460. For analyses conducted using a reduced set of 45 items, the 10:1 ratio is also achieved with the 460 minimum sample size. To meet these thresholds in the case that some data was unusable, 500 participants were recruited. Participants responded to screening questions to ensure that they met study qualifications (over 18 years old, employed more than 35 hours a week, and located in the U.S.). After being qualified for the study, providing consent, and completing the survey, participants were debriefed regarding the research goals and compensated. In total, 514 participants completed the survey and six participants who missed all three attention checks as well as eight participants who missed two attention checks were excluded from the sample, resulting in 500 participants for a retention rate of 97%. For participants who reported their age, the mean was 40.06 years old ($SD = 10.92$).

Regarding gender, 56.0% of participants reported male, 43.3% female, and 0.6% non-binary/other genders. For racial and ethnic background, 70.8% of participants were white, 10.2% Black/African American, 10.0% Asian, 3.9% Latinx/Hispanic, 2.7% multiracial, 1.2% Pacific Islander/Native Hawaiian/Native American, and 0.6% Middle Eastern. Participants reported weekly work hours ($M = 42.12$, $SD = 5.74$) and years of tenure in their current position ($M = 7.33$, $SD = 6.51$). A majority of the sample, 58%, worked remotely at least one hour per week ($M = 26.59$, $SD = 18.04$).

Measures

Burnout. The Maslach Burnout Inventory-General Survey (MBI-GS; Maslach et al., 1996) consists of 16 items that assess burnout along the dimensions of emotional exhaustion, cynicism, and professional efficacy (Schutte et al., 2000). Emotional exhaustion refers to feelings of depleted or drained emotional resources. Cynicism refers to an indifferent, distant attitude toward an individual's work. Professional efficacy refers to an employee's "expectations of continued effectiveness at work" (Schutte et al., 2000, p. 54). Reversed scoring is used for items that assess professional efficacy. Items are scored on a 7-point scale with options from 0 (never) to 6 (daily). An example item is "I have become less enthusiastic about my work."

The Shirom-Melamed Burnout Measure (SMBM; Shirom, 1989) is a 14-item measure whose dimensions are emotional exhaustion, physical fatigue, and cognitive weariness (Melamed et al., 2006). SMBM items are assessed on a 7-point scale (never to always). An example item from the SMBM is "I have no energy for going to work in the morning."

The Oldenburg Burnout Inventory (OLBI; Demerouti et al., 2001) is a 16-item measure whose dimensions are exhaustion (7 items) and disengagement (8 items). OLBI items are assessed on a 4-point scale (totally disagree to totally agree). An example item from the

exhaustion subscale is “After my work, I usually feel worn out and weary.” An example item from the disengagement subscale is “I get more and more engaged in my work” (reverse coded).

The Burnout Measure, Short Version (BMS; Malach-Pines, 2005) is a 10-item measure whose dimensions are physical exhaustion, emotional exhaustion, and mental exhaustion. BMS items are assessed on a 7-point frequency scale (never to always), where a score of 4 higher indicates burnout. An example item from the BMS is “When you think about your work overall, how often do you feel disappointed with people?”

The Copenhagen Burnout Inventory (CBI; Kristensen et al., 2005) is a 19-item scale measuring burnout dimensions of personal burnout, work-related burnout, and client-related burnout. CBI items are assessed on a 5-point scale (always or to a very high degree to never/almost never or to a very low degree). An example item from the CBI is “How often do you think: ‘I can’t take it anymore’?”

The Burnout Assessment Tool (BAT; Schaufeli et al., 2020) is a 23-item scale that consists of core dimensions. The four core dimensions of burnout assessed by the BAT are exhaustion, mental distance, impaired emotional control, and impaired cognitive control. BAT items are assessed on a five-point scale (never to always). An example item from the BAT is “At the end of my working day, I feel mentally exhausted and drained.”

Quality Checks. Embedded within the survey were three attention check questions (e.g., “To ensure data quality, please select ‘Often’ for this item.”). Research has found that including one attention check per 50-100 response items, and no more than three attention checks total, has benefits for identifying careless responding (Meade & Craig, 2012). Data from participants who responded correctly to at least two of the three attention checks was retained for analysis.

Analyses & Results

The exploratory phase of this factor analysis used maximum likelihood factor extraction with direct oblimin rotation to determine the number and distinctiveness of factors. Direct oblimin rotation was chosen because it is expected that the factors will correlate (Costello & Osborne, 2005). In total the six burnout measures included in this research have 92 items, but factor structure based on this many items would be sprawling and difficult to interpret. To address this concern and render a more interpretable solution, we analyzed each burnout measure's subscales to arrive at a smaller set of items. To do so, maximum likelihood extraction was conducted for each subscale, and the three highest loading items for each subscale were retained for subsequent analysis. Because the burnout measures included in this study have a total of 15 subscales, this resulted in 45 items. Factor loadings for the top three highest loading items per scale ranged from .62 to 1.00 ($M = .87$, $SD = .08$).

Table 3
EFA of Burnout Subscales

| Scale/ Subscale | Item Text | Factor |
|---------------------------------|--|--------|
| | | 1 |
| BMS | Helpless | 0.91 |
| | Hopeless | 0.91 |
| | Depressed | 0.90 |
| BAT Exhaustion | At work, I feel mentally exhausted. | 0.87 |
| | After a day at work, I find it hard to recover my energy. | 0.86 |
| | At the end of my working day, I feel mentally exhausted and drained. | 0.85 |
| BAT Mental Distance | I struggle to find any enthusiasm for my work. | 0.89 |
| | I feel a strong aversion towards my job. | 0.82 |
| | At work, I do not think much about what I am doing and I function on autopilot. | 0.79 |
| BAT Cognitive Impairment | At work I struggle to think clearly. | 0.91 |
| | When I'm working, I have trouble concentrating. | 0.90 |
| | At work, I have trouble staying focused. | 0.89 |
| BAT Emotional Impairment | At work, I feel unable to control my emotions. | 0.89 |
| | I do not recognize myself in the way I react emotionally at work. | 0.86 |
| | At work I may overreact unintentionally. | 0.84 |
| OLBI Disengagement | I feel more and more engaged in my work. | 0.82 |
| | I always find new and interesting aspects in my work. | 0.79 |
| | I find my work to be a positive challenge. | 0.73 |
| OLBI Exhaustion | After my work, I usually feel worn out and weary. | 0.91 |
| | After work, I tend to need more time than in the past in order to relax and feel better. | 0.78 |
| | During my work, I often feel emotionally drained. | 0.76 |
| SMBM Physical Fatigue | I feel like my "batteries" are "dead." | 0.94 |
| | I feel burned out. | 0.91 |
| | I feel physically drained. | 0.91 |
| SMBM Cognitive Weariness | I feel I am not focused in my thinking. | 0.95 |
| | I feel I am not thinking clearly. | 0.94 |
| | I have difficulty concentrating. | 0.92 |
| SMBM Emotional Exhaustion | I feel I am not capable of being sympathetic to coworkers and customers. | 0.96 |
| | I feel I am not capable of investing emotionally in coworkers and customers. | 0.90 |
| | I feel I am unable to be sensitive to the needs of coworkers and customers. | 0.87 |
| CBI Personal | How often do you feel worn out? | 0.92 |
| | How often do you feel tired? | 0.87 |
| | How often are you emotionally exhausted? | 0.86 |
| CBI Work | Do you feel burnt out because of your work? | 0.93 |
| | Are you exhausted in the morning at the thought of another day at work? | 0.89 |
| | Do you feel that every working hour is tiring for you? | 0.88 |
| MBI Exhaustion | -- | 0.93 |
| | -- | 0.93 |
| | -- | 0.92 |
| MBI Professional Efficacy | -- | 1.00 |
| | -- | 0.63 |
| | -- | 0.62 |
| MBI Cynicism | -- | 0.89 |
| | -- | 0.89 |
| | -- | 0.88 |

Note: Exploratory factor analysis with maximum likelihood extraction. The three highest factor loadings per subscale are displayed in the table, and these items were retained for the overall burnout EFA. BMS = Burnout Measure-Short Version; BAT = Burnout Assessment Tool; OLBI = Oldenburg Burnout Inventory; SMBM = Shirom-Melamed Burnout Measure; CBI = Copenhagen Burnout Inventory; MBI = Maslach Burnout Inventory. Due to copyright restrictions, only select MBI items may appear. All other MBI items are denoted by --.

A maximum likelihood factor extraction was conducted with oblimin rotation using the reduced set of 45 items. This resulted in a four-factor model, the results of which are presented in Table 4. The criteria that were used to determine the number of factors to retain include Eigenvalues, Kaiser criterion, a scree plot, Bartlett's test of sphericity, and cross-loadings. The Eigenvalue for the four-factor solution was 1.25, exceeding the Kaiser criterion of 1.00 (Kaiser, 1960), and the Eigenvalue for the five-factor solution was .93. A scree plot indicated a levelling off after factor four. Factor one accounted for 57.2% of the variance, factor two accounted for 7.4% of the variance, factor three accounted for 5.6% of the variance, and factor four accounted for 2.8% of the variance, for a cumulative total of 72.9% of the explained variance. Bartlett's test of sphericity produced a statistically significant chi-square ($\chi^2(990, N = 500) = 25895.82, p < .00$), and the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was .95, a "marvelous" value for this statistic (Kaiser, 1974, p. 35). The resulting four factors were interpreted as general exhaustion, cognitive weariness, disengagement/decreased professional efficacy, and emotional impairment. Item classification in the original scales as well as item wording were used to generate these factor labels. Item text is also included in Table 3.

Cross-loadings, average cross-loadings, the ratio of primary factor loading to average cross-loading, and a z-score based on this figure were used to evaluate which items best represented each factor for the purpose of including them in the subsequent confirmatory factor analysis. Factor one was the most challenging for which to select representative items, and the process for determining which factor one items to retain for the CFA is detailed below. For factors two, three, and four, the items with the three highest factor loadings, whose absolute values ranged from .51 to .99, all had cross-loadings below the .32 value as recommended by

Tabachnik and Fidell (2001), with absolute values ranging from .00 to .30. For this reason, for factors two through four the items with the highest factor loading were selected for the CFA.

For factor one, the exhaustion factor, criteria for representative items included that it should have a factor loading above .80, low average cross-loadings, and a comparatively high factor loading to cross-loading ratio. Next, items representing exhaustion needed to be clearly written (i.e., no double-barrel statements) and not include terms that could be confounded with a different factor (i.e., the phrase “mentally exhausted” could conflate with the cognitive weariness factor so items with this wording were not considered). Fortunately, 12 items met these criteria, having factor loadings above .80, average cross-loadings below .13, and factor loading to average cross-loading ratios of 6.46 to 58.73. To further narrow down the items, we considered themes in the phrasing of the items. For example, the SMBM’s “I feel burned out” and the CBI’s “Do you feel burnt out because of your work?” as well as a copyrighted item from the MBI use similar phrases, with factor loadings of .83, .86, and .86 respectively. Another four of the top 12 items, including the highest (.95) and second highest loading (.92) items, refer to feeling “used up,” “drained,” or “worn out and weary” after work, so the concept of weariness after work was also retained. Next, the item with the third highest factor loading, “Are you exhausted in the morning at the thought of another day of work?” was retained because of its high factor loading (.92) and low average cross-loading (.02).

Table 4
EFA Factor Loadings Based on 45 Items

| | | | Factor | | | | Average Cross- Loading |
|---------------------------|--|--------|--------|-------|-------|-------|------------------------------|
| | Item Text | Source | 1 | 2 | 3 | 4 | |
| 1. Exhaustion | --* | MBI | 0.95 | 0.01 | -0.01 | -0.14 | 0.05 |
| | At the end of my working day, I feel mentally exhausted and drained | BAT | 0.92 | 0.07 | -0.06 | -0.01 | 0.05 |
| | Are you exhausted in the morning at the thought of another day at work?* | CBI | 0.88 | 0.01 | 0.02 | -0.01 | 0.02 |
| | -- | MBI | 0.86 | -0.01 | 0.12 | -0.06 | 0.06 |
| | How often do you feel worn out? | CBI | 0.86 | -0.11 | -0.04 | -0.09 | 0.08 |
| | Do you feel burnt out because of your work?* | CBI | 0.86 | 0.02 | 0.11 | 0.05 | 0.06 |
| | Do you feel that every working hour is tiring for you? | CBI | 0.84 | 0.01 | 0.02 | 0.10 | 0.04 |
| | After my work, I usually feel worn out and weary. | OLBI | 0.84 | -0.01 | -0.05 | -0.01 | 0.02 |
| | -- | MBI | 0.84 | -0.10 | 0.02 | -0.06 | 0.06 |
| | I feel burned out | SMBM | 0.83 | -0.03 | 0.10 | 0.03 | 0.05 |
| | At work, I feel mentally exhausted | BAT | 0.83 | -0.01 | -0.01 | 0.07 | 0.03 |
| | I feel like my “batteries” are “dead.” | SMBM | 0.82 | -0.11 | 0.02 | -0.01 | 0.04 |
| | How often do you feel tired? | CBI | 0.81 | -0.14 | -0.11 | -0.13 | 0.13 |
| | I feel physically drained. | SMBM | 0.81 | -0.15 | -0.04 | -0.02 | 0.07 |
| 2. Cognitive Weariness | I have difficulty concentrating* | SMBM | -0.02 | -0.99 | -0.02 | -0.11 | 0.05 |
| | I feel I am not focused in my thinking* | SMBM | -0.00 | -0.97 | -0.01 | -0.04 | 0.02 |
| | I feel I am not thinking clearly* | SMBM | 0.00 | -0.94 | -0.01 | 0.00 | 0.00 |
| | When I'm working I have trouble concentrating | BAT | 0.04 | -0.79 | 0.04 | 0.05 | 0.04 |
| | At work, I have trouble staying focused | BAT | 0.08 | -0.72 | 0.08 | 0.06 | 0.07 |
| | At work I struggle to think clearly | BAT | 0.19 | -0.63 | 0.01 | 0.15 | 0.12 |

| | | | | | | | |
|--|--|------|-------|-------|-------|-------|------|
| | I feel I am unable to be sensitive to the needs of coworkers and customers. | SMBM | 0.09 | -0.42 | 0.18 | 0.35 | 0.21 |
| | I feel I am not capable of being sympathetic to coworkers and customers. | SMBM | 0.10 | -0.39 | 0.23 | 0.35 | 0.22 |
| | I feel I am not capable of investing emotionally in coworkers and customers. | SMBM | 0.25 | -0.33 | 0.24 | 0.24 | 0.24 |
| 3. Disengagement/ Professional Efficacy | I find my work to be a positive challenge* | OLBI | 0.19 | 0.05 | 0.70 | -0.07 | 0.10 |
| | --* | MBI | -0.02 | -0.03 | 0.68 | 0.07 | 0.04 |
| | --* | MBI | -0.07 | 0.01 | 0.67 | 0.02 | 0.03 |
| | I feel more and more engaged in my work | OLBI | 0.23 | -0.02 | 0.66 | -0.29 | 0.18 |
| | I always find new and interesting aspects in my work | OLBI | 0.21 | -0.04 | 0.63 | -0.24 | 0.16 |
| | -- | MBI | -0.17 | -0.10 | 0.55 | 0.16 | 0.14 |
| | -- | MBI | 0.44 | -0.16 | 0.45 | -0.04 | 0.21 |
| | -- | MBI | 0.34 | -0.19 | 0.42 | 0.08 | 0.20 |
| 4. Emotional Impairment | I do not recognize myself in the way I react emotionally at work.* | BAT | 0.13 | -0.30 | -0.08 | 0.58 | 0.17 |
| | At work, I feel unable to control my emotions.* | BAT | 0.22 | -0.29 | -0.10 | 0.52 | 0.21 |
| | At work I may overreact unintentionally.* | BAT | 0.15 | -0.29 | -0.05 | 0.51 | 0.16 |

Note: Factor extraction performed with maximum likelihood with oblimin rotation and Kaiser correction. BMS = Burnout Measure-Short Version; BAT = Burnout Assessment Tool; OLBI = Oldenburg Burnout Inventory; SMBM = Shirom-Melamed Burnout Measure; CBI = Copenhagen Burnout Inventory; MBI = Maslach Burnout Inventory. Due to copyright restrictions, only select MBI items may appear. All other MBI items are denoted by --. For Factor 1, items with loadings less than .8 do not appear in this table. Items that were retained for the EFA or modified for the EFA are indicated by *.

In total, 12 items were identified to represent the four factors of burnout, with three for each factor. To increase readability and prevent wording effects, items from the original scales were adjusted or, in the case of factor one items, combined. Table 5 provides a comparison of the original items and the items as they appeared in the CFA.

Table 5
Original and Re-Written Burnout Items

| Factor | Original Item | Re-Written Item |
|---|---|---|
| 1. Exhaustion | Do you feel burnt out because of your work? | 1. At work I feel burned out. |
| | After my work, I usually feel worn out and weary. | 2. At the end of my work day I feel worn out. |
| | Are you exhausted in the morning at the thought of another day at work? | 3. I feel exhausted when I think about another day at work. |
| 2. Cognitive Weariness | 1. I have difficulty concentrating. | 1. At work it is difficult to concentrate. |
| | 2. I feel I am not focused in my thinking. | 2. At work my thinking is not focused. |
| | I feel I am not thinking clearly. | 3. At work I have difficulty thinking clearly. |
| 3. Disengagement /Professional Efficacy | I find my work to be a positive challenge. | 1. I feel my work is a positive challenge. |
| | -- | 2. At work I have made worthwhile achievements. |
| | -- | 3. At work I feel excited when I achieve something. |
| 4. Emotional Impairment | I do not recognize myself in the way I react emotionally at work. | 1. At work I react emotionally in ways that surprise me. |
| | At work, I feel unable to control my emotions. | 2. At work I do not always feel in control of my emotions. |
| | At work I may overreact unintentionally. | 3. At work I may overreact unintentionally. |

Note: Due to copyright restrictions, only select MBI items may appear. All other MBI items are denoted by --.

Study 2

Methods

Participants, Procedure, and Measures

The goal of the second study was to examine the degree to which confirmatory factory analysis supports the four-factor model suggested by Study 1. Therefore, a second, independent sample of MTurk participants was recruited using the same inclusion criteria as was used in Study 1 (adults living in the U.S. who are employed at least 35 hours per week). Screening criteria included that participants in Study 1 may not take part in Study 2. Participants took a

survey consisting of the 12 items that were selected from the EFA results. The items that participants saw in Study 2 can be found in Table 5. This data collection followed the same procedure as Study 1, including informed consent, debriefing, and compensation. Study 2 included two instructed response items. Three participants missed at least one attention check item and were excluded from analysis for a final sample of 300 participants. The average age of participants in this sample was 37.40 years old ($SD = 10.05$). The sample consisted of more males (65.6%) than any other gender (34.1% female and 0.3% non-binary). Like the in the first sample, the majority of participants were white (70.7%). Next, 11.7% of participants were Black/African American/African, 7.9% Asian, 5.9% Latinx/Hispanic, 2.4% multiracial, 0.7% Native American, and 0.7% South Asian. Participants in this sample worked an average of 41.89 hours per week ($SD = 5.11$) and had an average 6.28 years of tenure ($SD = 5.19$).

Analyses & Results

Two confirmatory factor analyses were conducted in MPlus software version 8.4 (Munthén & Munthén, 2017) to test the anticipated four-factor model. Factor extraction was conducted using the maximum likelihood estimation. Several fit indices were used to evaluate model fit, specifically two incremental and two absolute fit indices. Following the guidelines put forth by Hu and Bentler (1999), model fit is considered ‘good’ if fit indices approximate the following: a Comparative Fit Index (CFI; Bentler, 1990) and Tucker–Lewis Index (TLI; Tucker & Lewis, 1973) of 0.95 and above, and a Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) less than 0.06 and Standardized Root Mean Square Residual (SRMR) less than 0.08. The factor loadings can be found in Table 6, and 10 out of the 12 items showed factor loadings above .85.

Table 6
CFA Factor Loadings

| Factor | Item | Factor | | | |
|--|------|--------|-----|-----|-----|
| | | 1 | 2 | 3 | 4 |
| 1. Exhaustion | 1 | .89 | | | |
| | 2 | .87 | | | |
| | 3 | .95 | | | |
| 2. Cognitive Weariness | 1 | | .92 | | |
| | 2 | | .89 | | |
| | 3 | | .86 | | |
| 3. Disengagement/ Professional Efficacy | 1 | | | .84 | |
| | 2 | | | .84 | |
| | 3 | | | .78 | |
| 4. Emotional Impairment | 1 | | | | .56 |
| | 2 | | | | .87 |
| | 3 | | | | .87 |

Note: Standardized CFA factor loadings

The model including 12 items met much of the Hu and Bentler criteria, although the RMSEA value exceeded .06 ($\chi^2(48, N = 300) = 148.67, p < .001, SRMR = .05, RMSEA = .08$ (90% CI of RMSEA = [.07, .10])). In line with Hu and Bentler’s guidelines, the CFI was .96 and the TLI was .95. Alpha reliabilities were above .9 for factor one ($\alpha = .93$) and factor two ($\alpha = .92$). Factor three’s reliability was slightly lower ($\alpha = .86$). Factor four had the least robust reliability ($\alpha = .80$). Item-total statistics indicated that if the first emotional impairment item (“At work I react emotionally in ways that surprise me”) were removed the alpha would rise to .86, so a subsequent CFA was conducted excluding this item.

Without the first emotional impairment item, model fit improved ($\chi^2(38, N = 300) = 107.53, p < .001, SRMR = .03, RMSEA = .08$ (90% CI of RMSEA = [.06, .10])). However, the RMSEA value still did not clear the .06 guideline. The CFI and TLI values were stronger in the second CFA, at .97 and .96. Coefficient alpha reliability for the overall scale was adequate ($\alpha = .71$), though not better than the reliability for the scale when it included all 12 items ($\alpha = .73$).

Overall, the model fit approached the .06 RMSEA threshold and fully met the SRMR, CFI, and TLI qualification, indicating generally good fit.

Discussion

Numerous burnout measures exist, and each has a slightly different definition and factor structure of the construct. The purpose of this research is to build on the work of prominent burnout researchers to find out what patterns emerge from factor analysis. While no hypotheses were formally offered in this paper, the burnout dimensions identified may not be unexpected based on the burnout literature.

First, factor one consists of exhaustion or general burnout. Every major burnout measure has either an exhaustion subscale (e.g., MBI, OLBI) or different kinds of exhaustion are the subscales (e.g., the SMBM). Items on this factor reflected overall weariness or non-domain-specific lack of energy. For example, the CBI item “How often do you feel worn out?” does not differentiate between mental, physical, or emotional aspects. It is worth noting, however, that emotional and cognitive burnout factors emerged in our model, while physical exhaustion did not. Certainly, many burned out individuals do experience physical exhaustion, and a subscale in the SMBM captures this. However, the results of this factor analysis indicate that physical exhaustion need not have its own factor, suggesting that physical exhaustion may contribute to an overall feeling of depleted energy.

The second factor, cognitive weariness, was comprised of the SMBM cognitive weariness items, the BAT cognitive impairment items, and, somewhat counterintuitively, the SMBM emotional exhaustion items. It is notable that these items loaded with cognitive exhaustion rather than with the fourth factor, emotional impairment. A closer look at the SMBM items reveals that each involves being emotionally responsive to the needs of others (e.g., “I feel

I am unable to be sensitive to the needs of coworkers and customers”). Because these items involve interaction with others, perhaps there is an implicit cognitive process whereby the individual experiencing burnout perceives a discrepancy between their desired behavior and the behavior they have the energy to perform in relation to the needs of others. In the process of conducting a meta-analysis, (Michel et al., in press), it was found that researchers have used the SMBM emotional exhaustion subscale as a stand-alone burnout measure. The results of this factor analysis would not support this practice. However, as suggested by the authors, other abbreviations of the SMBM may be appropriate.

The third factor, disengagement/decreased professional efficacy, combines the perspectives of the MBI and OLBI on burnout. Specifically, both paradigms contend that burnout includes a withdrawal or lack of motivation component. Decreased professional efficacy has been questioned as perhaps an outcome of burnout rather than a core component to burnout (Kristensen et al., 2005). The valuation that one’s work achievements are worthwhile may reflect a person’s level of engagement or disengagement with work. The MBI cynicism items also loaded on this factor.

The fourth factor, emotional impairment, consists of the three BAT emotional impairment subscale items. An example of these is “At work I am unable to control my emotions.” Unlike the SMBM emotional exhaustion items, the BAT items do not capture an external interaction but rather reflect the internal emotional experience. The SMBM emotional exhaustion items reflect early phases of burnout development in that burnout was originally identified in service professions. However, as burnout has been identified across employment sectors, while still part of one’s energetic resources, emotional energy in relation to other people may be less universal in the burnout experience.

Theoretical and Practical Implications

In the end, the results of this factor analysis do not align perfectly with any single existing burnout paradigm. To the question of whether burnout is a general (e.g., CBI) or multi-faceted experience (e.g., BAT, SMBM), the results of this research indicate both the presence of a general exhaustion factor, as well as cognitive and emotional factors. Regarding the theoretical foundations of the burnout construct, the JD-R model may be the best match for this factor structure because it is the only theory of the ones discussed in this paper to offer a specific explanation for disengagement, the third factor in the model generated by analyses in this study. The JD-R model proposes that job demands lead to exhaustion and lack of resources leads to disengagement.

In practice, the four-factor structure and corresponding 12-item assessment may be refined and used in future burnout research. With improvements to two of the items, the 12-item assessment used in the CFA could be a new tool for assessing burnout that encompasses its four key dimensions. As noted earlier in this paper, only the BAT includes general exhaustion, disengagement, and cognitive and emotional facets of burnout in its 23 items. The implication of a 12-item assessment is the possibility to assess all factors of burnout with even greater parsimony. Combining and comparing the results of burnout studies that use different assessment tools is an unwieldy process, and the items identified in these factor analyses could provide at least an initial basis for such comparisons by providing four factors as guidelines along which to make comparisons.

Although it was not the intention of this research to endorse or oppose any existing burnout measure, the factor structure that emerged in these analyses aligns more closely with some than with others. As mentioned above, the factor structure that emerged in this paper aligns

best with the factor structure of the core BAT. The OLBI does have exhaustion and disengagement but does not have the specific kinds of exhaustion that also feature in our model (cognitive and emotional). Both the SMBM and BMS measure physical, cognitive, and emotional exhaustion. But the results of this project indicate that physical exhaustion may be subsumed by overall exhaustion and that disengagement is indeed part of the burnout experience. To note, SMBM items performed much better than BMS items in terms of factor loading. As for the CBI, which measures cognitive and physical weariness, our research suggests that this may be an incomplete picture. The MBI, which is the first burnout measure to rise to prominence and the most widely used burnout measure by far, accounts for emotional but not overall exhaustion, and its professional efficacy and cynicism items loaded on the disengagement factor, suggesting two things. First, cognitive weariness appears to be an important element in the burnout experience, and this is missing from the MBI conceptualization. Second, reduced professional efficacy and cynicism may in fact indicate the JD-R disengagement process.

An existent question is whether it is appropriate for researchers to continue using the emotional exhaustion scale from the MBI-GS or SMBM as a stand-alone burnout measure. While the MBI emotional exhaustion items loaded strongly on the exhaustion factor in our analyses, this factor accounted for 57.2% of the explained variance leaving a considerable portion unaccounted for. Researchers choosing to use the MBI emotional exhaustion subscale should be aware of the tradeoffs considering accuracy versus brevity. The SMBM emotional exhaustion subscale loaded on the cognitive weariness factor, possibly because the emotional exhaustion items focus on interpersonal dynamics with others where self- and other-perceptions may also involve a cognitive component. For this reason, our results do not support the use of the SMBM emotional exhaustion subscale as a stand-alone burnout measure.

Limitations and Future Research

Burnout's factor structure is not universally agreed upon in the scientific literature, making a factor analytic approach vital for research questions such as those posed in this paper. However, factor analysis does not provide information about a construct's nomological network, nor does it speak to the incremental or predictive validity of a measure. For instance, burnout measures like the OLBI may show patterns of results that are most strongly correlated with demands and resources proposed by the JD-R model such as qualitative workload and procedural fairness (Schaufeli & Taris, 2014). On the other hand, measures like the SMBM may hold greater relevance to research questions pertaining to physical correlates of burnout such as poor sleep quality. Also of interest would be whether a burnout tool based on this paper's CFA results would have strong patterns relationships with burnout's established correlates such as job satisfaction and psychological well-being (Michel et al., in press), predictive validity regarding focal burnout-related outcomes, or incremental validity over existing burnout measures. Although the burnout measures included in this paper focus on job-related burnout, an expanded framework for burnout that occurs across domains such as caregiver burnout could provide valuable information about potential crossover and spillover dynamics. Future research can explore these and other avenues.

Conclusions

The goal of this research is to clarify the underlying factor structure of burnout. To date, no previous research has simultaneously examined six different burnout measures with EFA and CFA analyses, and no studies have included a comparison with the BAT or the CBI. This factor analysis resulted in a four-factor structure of burnout consisting of exhaustion, cognitive weariness, disengagement/decreased professional efficacy, and emotional impairment. This

research adds meaningful information about the theoretical components of the burnout construct. Practitioners can build burnout interventions based on burnout's factor structure that will potentially be more targeted and therefore more effective than previous interventions. This will both help researchers build appropriate models and also help organizations create guidelines that protect the health and well-being of workers.

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