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PUBLIC HEALTH | REVIEW ARTICLE

“Diagnosing” burnout among healthcare professionals: Can we find consensus?

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Abstract: Burnout is an established phenomenon across cultures and occupations. The Maslach Burnout Inventory (MBI) is the most commonly used measure of burnout. The MBI delineates burnout according to three components (emotional exhaustion, depersonalization and reduced personal accomplishment) and provides the opportunity to assign a classification of burnout. However, the criteria of what constitutes burnout and/or low, medium or high burnout varies considerably. In the following paper, we have systematically reviewed studies of healthcare professionals that specifically “diagnose” burnout. Results indicate multiple approaches to assigning different levels of burnout. The need for a consensus on how to classify different degrees of burnout is discussed.

Subjects: Behavioral Sciences; Health and Social Care; Mental Health

Keywords: burnout; cut-off; classification; healthcare; MBI; physician; nurse

1. Introduction

Burnout is a well-studied syndrome in healthcare associated with various professional and personal consequences. Numerous studies have attempted to estimate the rates of burnout in healthcare professionals reporting prevalence rates ranging from 25 to 75% (e.g. Fahrenkopf et al., 2008; Linzer et al., 2001; Shanafelt, Bradley, Wipf, & Back, 2002). Burnout is defined as a syndrome that consists

ABOUT THE AUTHORS

This study was conducted by Karolina Doulougeri, Katerina Georganta, and Anthony Montgomery, who are all work and organizational psychologists working at the University of Macedonia, Thessaloniki, Greece. The three authors are members of the WELLMED network. WELLMED is an international network of researchers and practitioners focused on identifying the factors that help to link healthcare professional wellbeing and performance in clinical practice [www.wellmed.gr]. WELLMED meets biannually to bring together experts from diverse disciplinary backgrounds in order to present and discuss innovative ways of linking well-being to patient safety and quality of care. The WELLMED network conducts research aimed at exploring how burnout and wellbeing are related to different aspects of quality of care and patient safety, in terms of clinical decision making, communication in clinical practice, medical errors, civility at workplace, and patient neglect.

PUBLIC INTEREST STATEMENT

Burnout is a psychological syndrome that involves a prolonged response to chronic emotional and interpersonal stressors on the job. It is a common problem among healthcare professionals, especially those at the frontline of care. Our study reviews papers that classified individuals in terms of their burnout level using the Maslach Burnout Inventory (MBI) that discerns three dimensions of burnout; emotional exhaustion, depersonalization and reduced sense of accomplishment. We reviewed the ways in which researchers defined burnout, whether burnout was conceptualized as a multidimensional or unidimensional construct, and whether cut-off scores were used in its assessment. Our results showed a significant variation in the ways burnout levels are identified that can lead to problems in comparative studies, as well as in the interpretation of burnout at the individual level by practitioners. Our paper argues for better guidance and agreement concerning the use of the MBI as a research/diagnosis tool.

of emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA) (Maslach, Jackson, & Leiter, 1996). Symptoms of burnout vary across individuals but they also vary according to the stage of burnout.

The Maslach Burnout Inventory (MBI) is the most widely used measure of job burnout. The MBI has dominated the field as a research tool; by the end of the 1990s it had been used in 93% of the journal articles (Schaufeli & Enzmann, 1998). The factorial reliability and validity of the MBI has been established across cultures and occupations. The three dimensions of the MBI generate three scores for every individual respondent. The challenge for the researcher or practitioner is how to combine these three different scores. The original MBI Manual presents the distribution of scores for its normative samples and divides them into thirds; the scoring range in each third is used to indicate “low,” “average,” and “high” scores on burnout (Maslach et al., 1996).

However, the developers of the MBI argue that it was developed as a research tool, not as a diagnostic one (Maslach, Leiter, & Schaufeli, 2008). However, this cautionary guidance has not stopped researchers from treating the MBI as a clinical tool. Burnout (correctly) does not appear in the most commonly used classification systems (International Classification of Diseases 10th revision, ICD-10, and Diagnostic and Statistical Manual of Mental Disorders 4th revision, DSM-IV). However, in practice a diagnosis is being made and used as a basis for further treatment (Kaschka, Korczak, & Broich, 2011).

The Netherlands represents a special case with regard to the use of the MBI as a diagnostic tool. The MBI has been clinically validated in the Netherlands (Brenninkmeijer & Van Yperen, 2003; Roelofs, Verbraak, Keijsers, de Bruin, & Schmidt, 2005; Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001). This work provided the basis for a decision rule whereby an individual can be diagnosed as clinically burnout when s/he scores high on EE and high on one of the other two MBI dimensions. The classification of high burnout is based on clinically validated cut-off scores. In the Netherlands, this diagnostic tool is included in the practice guidelines for managing stress-related disorders in occupational and primary healthcare, as issued by the Royal Dutch Medical Association in 2000. According to these guidelines, burnout is defined as work-related neurasthenia that includes long-term loss of the occupational role, and the diagnostic tool enables physicians to discriminate between those who suffer from severe burnout and those who do not. The use of the MBI as a tool for medical diagnosis has also been adopted in Sweden. The problem of using burnout as a medical diagnosis is that it treats burnout as a unidimensional concept and forces all the attention towards emotional exhaustion. However, the use of the MBI as a clinical tool to diagnose burnout is problematic. For example, Kleijweg, Verbraak, and Van Dijk (2013) recommend that the MBI should not be used by itself as a diagnostic tool in a patient population, because of a resultant high probability of overdiagnosing burnout.

The issue as to whether burnout is a continuous or dichotomous variable is an important topic in the medical community. For example, the exchange between Shanafelt and Dyrbye (2012) and Blanchard, Rodrigues, and Colombat (2012) concerning the prevalence of burnout among oncologists in the *Journal of Clinical Oncology* highlights the need for clarity on guidelines for the screening for burnout. Indeed, the fact that healthcare professionals are concerned with screening for burnout reveals their desire to be able to diagnose it appropriately.

In the following paper, we systematically review the use of the MBI as a tool to “diagnosis” burnout in studies concerning healthcare professionals. We intentionally denote the word diagnosis in inverted commas to acknowledge that while only some authors may refer to burnout as a clinical syndrome, all authors attribute caseness (i.e. burnout/no burnout) without the appropriate caveats. Studies using the MBI have been prodigious; therefore we limited our review to frontline healthcare professionals (physicians, nurses, and medical residents) and a specific recent time period (2011–2012).

The aim of the review is to identify studies which used the MBI–Human Services Survey (MBI–HSS) or the MBI–General Survey (MBI–GS) to “diagnose” burnout in healthcare professionals and explore how researchers defined burnout and whether they treated it as a unidimensional or multidimensional construct.

2. Methods

2.1. Identification of the studies

Relevant studies were found by means of a systematic search in the academic database SCOPUS from 2011 to 2012. Combinations of the following keywords were used: “burnout”, “physicians”, “nurses”, “doctors”.

For inclusion, the articles had to fulfill the following criteria: (i) include health professionals in the study population, (ii) measure burnout with the use of MBI–HSS or the MBI–GS, (iii) provide a classification of burnout either with the use of cut-off scores, or a dichotomy, (iv) be published in English and (v) be peer-reviewed.

The process of the systematic review is shown in Figure 1. The combination of keywords yielded 927 potentially relevant articles. From these, 181 articles were excluded due to duplication, 96 articles were excluded after reading their abstract and 11 articles because of limited access to the full paper. In total, 639 full text articles were reviewed and 589 of them were excluded for not meeting one or more of the inclusion criteria. More specifically, 119 articles were excluded because they were not written in English, 385 because they did not measure burnout and 85 articles were not included because they did not provide any classification of burnout or they did not explain it in detail. Finally, 50 articles were included in the review. Those articles, studied burnout in healthcare professionals with the use of MBI–HSS or MBI–GS and they provided a classification of burnout, using either cut-off scores, percentiles, tertiles or a dichotomy of burnout.

Two independent reviewers conducted the literature review and they evaluated separately the methodological quality of the articles. Each article retrieved for this study was assessed independently, by two reviewers for inclusion in or exclusion from the review on the basis of reading the full text. The views of the two reviewers were compared and where there were differences, the article was reconsidered.

Figure 1. Review selection process and results.



Table 1. Sample characteristics

	N (range)	K
Physicians	41658 (4–7905)	21
Nurses	178520 (16–98116)	21
Residents	1289 (14–384)	8
Total	221 (4–98116)	50

3. Results

In total, 50 studies were included in this systematic review. Those studies assessed burnout in health professionals (doctors, nurses and medical residents) using either the MBI-HSS (46 studies) or MBI-GS (4 studies). Table 1 presents the sample of the studies. As Table 1 shows the sample sizes of the studies varied considerably.

3.1. Burnout definition

There is a considerable variability in how researchers define burnout when they study it with regard to health care professionals. This can be problematic because depending on how conservative or liberal the definition is, it can result in either underestimation or overestimation of burnout. Several ways to define clinical burnout have been suggested. According to Maslach, a high degree of burnout is reflected in high scores in EE and DP subscales and low scores in PA subscale. Alternatively, according to Schaufeli and other researchers, high scores on emotional exhaustion and/or depersonalization, but not a low score in personal accomplishment scale can distinguish the clinically burned-out from the non burned-out (Dyrbye, West, & Shanafelt, 2009; Schaufeli et al., 2001; Thomas, 2004).

The studies of the review presented a great variation with regard to how they defined burnout. Forty-three of the studies explained in detail how they identified burnout in their research, while the rest do not provide an explicit rationale as to their criteria for assigning different levels of burnout. Five predominant approaches in the definition of burnout were identified from the review of the papers:

- (1) The combination of high EE, high DP and low PA (14 studies)
- (2) High EE and/or high DP (12 studies)
- (3) High levels of EE and/or DP combined with low PA (3 studies)
- (4) A high score in any of the three subscales (4 studies)
- (5) High levels in EE subscale only (10 studies)

More conservative definitions required the existence of both high scores in EE and DP and low scores in PA in order to classify burnout, according to Maslach guidelines. However, these studies face the risk of underestimating the burnout rate of individuals who score either high EE or high DP scores. Other studies defined burnout as high scores in only EE and DP. Other studies defined burnout as high scores in either EE and/or DP and low scores in PA. Four studies considered symptoms of burnout high when it was reported in at least one of the three subscales. Finally, ten studies measured only EE and considered it as the core dimension of burnout.

3.2. Burnout: A multidimensional or a unidimensional construct?

A great variation existed also in the way the studies treated burnout in relation to the other examined variables. Burnout was treated mainly in three ways: (i) the continuous data of each domain of burnout were analyzed separately, (ii) each domain was classified as low, average and high according to the cut-off scores, (iii) as a unidimensional construct with a dichotomy of burnout/no burnout. Table 2 summarizes the different ways, studies treated burnout either as a multidimensional or unidimensional construct. Some studies adopted both approaches which is why the total numbers

Table 2. Categories of burnout (MBI–HSS)

Categorization	K
Continuous subscales	31
Categorical: Low, average, high for each subscale	23
Dichotomy: Burnout/no burnout	22
Burnout: Low, average, high (total)	1

of studies exceeds the studies included in the review. As Table 2 shows, the majority of the studies evaluated the relationship between burnout dimensions and other variables using the individual domain scores as continuous data. The second more frequent choice was the dichotomy between burnout and no burnout symptoms. This dichotomy while it may seem practical can be quite problematic as there is no standard definition of burnout, and thus studies which use this dichotomy may have measured and defined burnout in very different ways.

3.3. Classification of burnout using cut-off scores

Forty-one studies used the MBI–HSS to assess burnout and provided cut-off scores. However, the cut-off scores varied among studies. Among the studies which used MBI–HSS, 31 studies administered all three subscales of burnout, whereas 10 studies administered only the EE exhaustion subscale to assess burnout. Twenty-five studies classified burnout as low, average and high whereas 16 studies only provided the cut-off scores for high burnout. A detailed description of the different cut-off scores is provided in Table 3.

Table 3. MBI–HSS cut-off scores (for a total of 41 studies)

MBI–HSS						
	EE		DP		PA	
	Cut-off scores	K (%)	Cut-off scores	K (%)	Cut-off scores	K (%)
<i>Low</i>	5–11	1 (4.35%)	≤4	1 (4.76%)	6–16	1 (4.76%)
	≤13	3 (12.00%)	≤5	12 (57.14%)	≤31	1 (4.76%)
	<15	1 (4.35%)	<6	7 (33.33%)	<33	8 (38.10%)
	<16	6 (21.43%)	6–11	1 (4.76%)	>39	6 (28.57%)
	≤18	8 (26.67%)			>40	3 (14.29%)
	≤19	2 (8.33%)			>42	2 (9.52%)
	≤20	2 (8.33%)				
<i>Average</i>	12–15	1 (4.55%)	4–9	1 (4.76%)	17–20	1 (5.00%)
	14–26	6 (27.27%)	6–9	10 (47.62%)	≥31	1 (5.00%)
	15–24	1 (4.55%)	6–10	2 (9.52%)	32–38	5 (25.00%)
	17–26	5 (22.73%)	>7	2 (9.52%)	32–39	2 (10.00%)
	≥17	2 (9.09%)	7–12	5 (23.81%)	34–39	9 (45.00%)
	19–26	5 (22.73%)	12–15	1 (4.76%)	41–36	2 (10.00%)
	21–30	2 (9.09%)				
<i>High</i>	>24	1 (2.56%)	≥9	1 (3.45%)	>16	1 (3.45%)
	16–25	1 (2.56%)	≥10	17 (58.62%)	21–30	1 (3.45%)
	≥25	1 (2.56%)	≥11	3 (10.34%)	>39	1 (3.45%)
	≥26	2 (5.13%)	≥12	1 (3.45%)	>40	8 (27.59%)
	≥27	31 (79.49%)	≥13	6 (20.90%)	≤31	5 (17.24%)
	≥30	1 (2.56%)	16–30	1 (3.45%)	≤33	10 (34.48%)
	≥31	2 (5.13%)			<35	2 (6.90%)
					<39	1 (3.45%)
				>33		

Cut-off scores differed from the cut-off scores provided by Maslach, Schaufeli, and Leiter (2001) with regard to low, average and high burnout. 79.49% of the studies defined high EE as ≥ 27 according to Maslach guidelines. However, the high cut-off score for EE ranged between 24 and 31. Regarding the DP subscale the cut-off scores for high DP varied between 9 and 30, despite Maslach's recommendation which set the cut-off score of DP at 10.

Five studies used the MBI-HSS to assess burnout but they did not report any specific cut-off scores. Two studies used percentiles to identify high burnout, one study compared the MBI scores of its participants with the norms, one study used tertiles to classify burnout and one study identified burnout when symptoms were present at least once per week or high score was obtained with higher score on either EE or DP or both.

Four studies used the MBI-GS to assess burnout. Wu et al. (2012) reported the following cut-off scores for EE: low: < 9 , average: 9–13, high: > 13 , depersonalization: < 3 , average: 3–9, High: > 9 and personal accomplishment: low: > 30 , average: 3–9, high: > 9 . Spence Laschinger, Grau, Finegan, and Wilk (2012) also defined severe burnout as a mean > 3.0 for EE. Koivu et al. (2012a, 2012b) in two studies categorized burnout as severe if symptoms were experienced daily or weekly, mild when they occurred monthly and no burnout if symptoms were experienced few times per year.

4. Discussion

This systematic review indicates significant variation as to what constitutes cut-off scores for burnout among healthcare professionals. This is a significant problem with regard to how researchers and practitioners should classify burnout. From the research perspective, it means that meta-analysis or aggregation studies that aim to review the prevalence of burnout could be problematic. At the practitioner level, it contributes to confusion as to how burnout can be diagnosed/classified.

The confusion in the field is probably contributed to by the different guidelines that exist with regard to classifying burnout. On the one hand, Maslach et al. (2001) stress that the MBI is a research tool, but they also provide cut-off scores. Additionally, Dutch researchers have developed clinically validated cut-off scores. Thus, without clear guidance on the issue, researchers can and do treat the MBI as a diagnosis tool. Intelligent and nuanced guidance on how to grapple with the MBI does exist (e.g. Maslach et al., 2008), but practical considerations expedite the need for researchers (and the respondents of the MBI) to assess who is and who is not burned out. Thus, there is a tension between the MBI as a research tool and a practitioner tool for “diagnosing” burnout.

None of the studies reviewed used proxy measures to validate classifications of burnout. For example, Schaufeli and colleagues have recommended using work-related neurasthenia, as defined in the ICD-10 (1992), as the equivalent of clinical burnout (Schaufeli et al., 2001). According to the ICD-10, a neurasthenic diagnosis (code F43.8) requires: (1) persistent and increased fatigue or weakness after minimal (mental) effort; (2) at least two out of seven distress symptoms such as irritability and inability to relax; (3) the absence of other disorders such as mood disorder or anxiety disorder. According to Schaufeli et al. (2001), in order to be diagnosed with clinical burnout, the neurasthenic symptoms should additionally be work related, and the individual should receive professional treatment.

4.1. Why has consensus not been reached?

The trend towards categorizing burnout as a medical diagnosis implies one dimensionality, and it is clear that exhaustion has emerged as that single dimension (Maslach & Leiter, 2016). On the one hand, the push to medicalise burnout reflects a desire to enable it to have weight within the medical community, to access disability support and to establish common standards in the field. While this is laudatory, it runs the risk of ignoring the fact that a multidimensional approach reflects that fact burnout represents a crisis in values. Thus, burnout is a social phenomenon that captures that relationship between an individual work environment. Moreover, recent research suggests that cynicism (disengaged profile) comes closest to the negative endpoint of burnout (Leiter & Maslach, 2015; Maslach &

Leiter, 2008). Thus, the barriers to reaching consensus relate to a lack of shared understanding about the conceptual, theoretical and methodological background regarding the measurement of burnout.

4.2. Limitations

This review presents some limitations. First of all, our systematic search of studies was conducted only in one scientific database, which entails the danger that relevant studies were not found (i.e. file drawer problem). Finally, the period of time (2 years) was limited but it was indicative of the variation that exists in measuring, defining and analyzing burnout.

5. Conclusions

Cordes and Dougherty noted in a (1993) review on burnout that a systematic assessment of the convergent and discriminant validity using the Multitrait-Multimethod Matrix approach had not appeared in the literature. In 2016, this objective has still not been realized.

Deciding on how to utilize the data from the MBI is complicated by the fact that some researchers favor a two-component model, whereas others have argued for a three-component model. The problem is further complicated by unidimensional vs. multidimensional approaches to the burnout. Maslach has consistently argued against viewing burnout as a unitary concept, but the problem of consensus still remains.

The purpose of the present review is to raise awareness concerning the heterogeneity that exists in classifying burnout. In order for the field to reach consensus, researchers need to first establish a shared understanding as to advantages and disadvantages associated with classifying individuals as being either burnout/not burnout.

Job burnout is a symptom of organizational functioning. There is a need to shift the focus from the individual to the organizational level, bringing forward the need for interventions to address the chronic organizational conditions that are systematically and incrementally contributing to feelings of burnout among staff in a healthcare organization. In terms of benchmarking organizational issues prior to an intervention, the six areas of work life of Leiter and Maslach (2004) is a good place to start. According to this approach, organizations can benchmark six key domains; workload, control, reward, community, fairness and values. These domains, which are evidence based, can direct organizational interventions towards the key factors influencing individual well-being.

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Competing Interests

The authors declare no competing interest.

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