DIFFERENT METHODOLOGIES AND HEALTH EVALUATION TOOLS IN THE BURNOUT SYNDROME

ABSTRACT

Objective: to discuss the methodologies and tools used to evaluate the burnout syndrome (BS) and its repercussions. Method: integrative review, conducted between May and June 2015, which seeks to answer the guiding question “what are the different methods and tools used to evaluate professionals from the health field exposed to the burnout syndrome described in cross-sectional studies?” by accessing the databases MedLine, PePSIC, LILACS, and SciELO, in order to select 20 articles, assessed in full text. Results: varieties of evaluation methods are shown, as well as different instruments and ways of using and interpreting. Conclusion: non-clinical diagnosis of burnout is determined by many inventories, among them the Maslach Burnout Inventory (MBI) is the most widely used. Its adaptations to different populations and languages require a rigorous statistical analysis of sensitivity and reliability, in order to avoid misinterpretations and social repercussions. Descriptors: Burnout; Professional; Health Evaluation; Work; Review; Diagnosis.

RESUMO

Objetivo: discutir as metodologias e ferramentas utilizadas na avaliação da síndrome de burnout (SB) e suas repercussões. Método: revisão integrativa, realizada entre maio e junho de 2015, que busca responder à pergunta norteadora “quais são as diferentes metodologias e ferramentas utilizadas na avaliação de profissionais da área de saúde expostos à síndrome de burnout descritas em estudos transversais?”; a partir do acesso às bases de dados MedLine, PePSIC, Lilacs e SciELO, para a seleção de 20 artigos, avaliados em texto integral. Resultados: mostram-se variedades de métodos de avaliação, bem como diferentes instrumentos e formas de utilização e de interpretação. Conclusão: o diagnóstico não clínico do burnout é determinado por vários inventários, dentre os quais o Maslach Burnout Inventory (MBI) é o mais utilizado. Suas adaptações a diferentes populações e línguas requerem uma criteriosa estatística de sensibilidade e confiabilidade, a fim de evitar falsas interpretações e repercussões sociais. Descriptores: Esgotamento Profissional; Avaliação em Saúde; Trabalho; Revisão; Diagnóstico.

RESUMEN

Objetivo: discutir las metodologías y las herramientas utilizadas para evaluar el síndrome de burnout (SB) y sus repercusiones. Método: revisión integradora, realizada entre mayo y junio de 2015, que trata de responder a la pregunta orientadora “¿cuáles son los diferentes métodos y herramientas que se utilizan para evaluar los profesionales del área de la salud expuestos al síndrome de burnout descritos en estudios transversales?”; por medio del acceso a las bases de datos MedLine, PePSIC, Lilacs y SciELO, para seleccionar 20 artículos, evaluados en texto integral. Resultados: se muestran variedades de métodos de evaluación, así como diferentes instrumentos e formas de uso y de interpretación. Conclusión: el diagnóstico no clínico del burnout se determina a través de muchos inventarios, entre ellos el Maslach Burnout Inventory (MBI) es el más ampliamente utilizado. Sus adaptaciones a diversas poblaciones y lenguajes requieren un juicioso análisis estadístico de la sensibilidad y la fiabilidad, a fin de evitar interpretaciones erróneas y repercusiones sociales. Descriptores: Agotamiento Profesional; Evaluación de la Salud; Trabajo; Revisión; Diagnóstico.

1Nurse. MS and Ph.D. in Science from the Federal University of São Paulo (UNIFESP). Post-Ph.D. student in Psychology at the University of Porto. Porto, Portugal. Email: salomao.france@uol.com.br. 2Nurse. Post-Ph.D. in Nursing from the São Paulo State University of Campinas (UNICAMP), Visiting professor at the Federal University of Rio Grande do Norte (UFRN). Natal (RN), Brazil. Email: martino.milva@unifesp.br. 3Nurse. Ph.D. student in Science at the UNIFESP. São Paulo (SP), Brazil. Email: vasconcelos.motta@unifesp.br.
4Nurse. MS student in Science at the UNIFESP. São Paulo (SP), Brazil. Email: lemeul@hotmail.com.
INTRODUCTION

An individual’s holistic and comprehensive health requires the maintenance of balance between the physical, environmental, social, and psychological needs, where socio-cultural and economic factors have direct influence on people’s health and behavior.

In the occupational sphere, many factors can lead to health decline, such as: long working hours, competitive environment, autocratic supervisors, unnecessary hierarchies, and changes generated by globalization mechanisms. They can transform the interpersonal and professional relationships. Social changes and capitalism have increased the need for production, aimed at financial status and social stability, and this may result in physical and psychological ramifications.

Burnout is a psychological syndrome resulting from work-related chronic stress that may be characterized by three dimensions or sub-categories: emotional exhaustion, depersonalization, and reduced job satisfaction. This may be manifested as cynicism and disillusion.¹

This disease often affects workers who help or care for people at risk or in need of many procedures, especially in the health field.² Other authors³ point out that burnout is also an occupational hazard for professionals in the areas of education, human services, and administration.

Emotional exhaustion is characterized by a sense of emotional and physical exhaustion, while depersonalization involves cold, negative, and insensitive attitudes, resulting from dehumanization, hostility, intolerance, and impersonal treatment. Low job fulfillment is a feeling of dissatisfaction or inefficiency, where the individual experiences a sense of failure and low self-esteem, because her/his professional goals are not met.⁴

There are several definitions of burnout syndrome (BS) based on theoretical perspectives: clinical, socio-psychological, organizational, and socio-historical.⁵ The clinical perspective is characterized by etiology, symptoms, clinical evolution, and treatment. According to this perspective, burnout is derived from a professional’s excessive commitment to her/his work, which can lead to depression and even suicide. The socio-psychological perspective considers the worker and the workplace as the basis of factors that cause exhaustion, especially those related to the tasks the worker carries out. The organizational perspective emphasizes the characteristics that trigger burnout. The socio-historical perspective states that the current model of society based on individualistic values is the determining factor of disease, more than organizational and personal characteristics.

A high level of classic symptoms of BS, such as personal dissatisfaction and emotional exhaustion, are observed in professionals like the community health workers (CHWs), who deal with the public and often feel powerless in face of the current panorama of health in the country, when dealing with the stress of demands from various age groups. Another study⁶ emphasizes that professionals in the early years of their career, as well as women, are the most vulnerable groups among those suffering from BS, also known in Brazil as “síndrome do esgotamento profissional.” The Decree 3,048, enacted on May 6 1999, codifies this term as a synonym for BS.⁷

Although this theme has been addressed in a number of scientific studies, there is still a possibility that the BS may have been underreported due to its similarities with other psychiatric illnesses, such as depression and stress.

Depersonalization is the key dimension that characterizes burnout. The other dimensions may be observed in many other psychic illnesses, such as depression.⁸ It is believed that depression comes after the BS and that several psychological demands, little freedom of choice, lack of social support at the workplace, and stress due to inadequate workloads are significant predictors of depression.⁸

One of the main instruments used to measure and diagnose burnout on a nonclinical basis has been the Maslach Burnout Inventory (MBI), which was adapted and validated for use in Brazil⁹, with 22 self-administered questions to identify the symptomatic dimensions of burnout. Although this instrument has achieved a certain level of reliability and validity⁹, it cannot produce accurate psychometric results, especially when the original inventory involve cross-cultural adaptations and translation into languages other than English and there lacks a judicious and well-outlined statistical approach in such adaptations, above all regarding their interpretations and assessments. An error in cutoff points may result in false positives, inadequate therapies, and expenditure of public money.

There is a need for further studies that can help making the key points of the BS clearer, in order to minimize errors concerning validation, adaptation, evaluation, and interpretation of this syndrome, nowadays...
recognized as a global concern for public health and occupational health. Other inventories emerged to address the BS with features different from the MBI and having other dimensions. Knowing these inventories is of paramount relevance, given the opportunity to choose the inventory better adapted to the population under study.

**METHOD**

Qualitative, descriptive, study that uses the integrative review strategy, exemplified in the 9 steps described below. The studies selected showed average values of 3, 4, 5 concerning methodological quality and level of evidence.\(^1\)

We decided to maintain the anonymity of the authors of the articles, because this is a theoretical and analytical study.

**Step 1:** What are the different methods and tools used to evaluate health professionals exposed to the burnout syndrome described in cross-sectional studies?

**Step 2:** Represented in Figure 1.

<table>
<thead>
<tr>
<th>Database</th>
<th>Search strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access through the BIREME web portal</td>
<td>1. Burnout Professional AND diagnosis</td>
</tr>
<tr>
<td></td>
<td>2. esgotamento profissional clusters diagnosis</td>
</tr>
<tr>
<td></td>
<td>3. Professional AND burnout AND diagnosis</td>
</tr>
<tr>
<td></td>
<td>4. Burnout AND Diagnosis OR Evaluation</td>
</tr>
<tr>
<td></td>
<td>5. Burnout AND Diagnosis OR Evaluation And Work</td>
</tr>
</tbody>
</table>

**Figure 1.** Definition of the search strategy and its descriptors.

**Step 3:** Searches to obtain a considerable sample of articles to evaluate, by means of health descriptors and/or MeSH Terms, using the Boolean operators needed: AND, OR, NOT. Articles available in full text written in English, Spanish, Portuguese, and Italian were included.

**Steps 4 and 5:** Establish the search strategies and comparison by two examiners. Represented in Figure 2.

<table>
<thead>
<tr>
<th>Database/virtual libraries on the BIREME web portal</th>
<th>Selectio n E1</th>
<th>Selectio n E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SciELO: Burnout Professional AND diagnosis</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>LILACS: esgotamento profissional clusters diagnosis</td>
<td>38</td>
<td>1</td>
</tr>
<tr>
<td>COCHRANE: Professional AND burnout AND diagnosis</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>PepSIC Burnout AND Diagnosis OR Evaluation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Burnout AND Diagnosis OR Evaluation And Work</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Burnout AND Evaluation</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

**Figure 2.** Selection of articles from the databases and definition of examiners.

**Step 6:** The articles that did not mention any descriptor in the title or abstract were excluded; those published before 2008; those repeated on different databases; and those published in journals indexed with impact factor 0.000 or uninformed.

**Step 7:** Definition of information to be used from the selected studies, after critical analysis of articles and screening according to the inclusion/exclusion criteria. Each article was individually assessed in full text by the examiners (E1 and E2), where information quality was a mandatory factor to choose the articles and prepare the critical summary and the discussions. The average impact factor (IF) of the journals selected may be regarded as high. Information on the numerical value of the IF was obtained through the websites of the journals or databases. We chose to indicate the most updated IF.

**RESULTS**

**Step 8:** Critical summary providing a synthesis of information available in the selected articles. Represented in Figure 3.
<table>
<thead>
<tr>
<th>Title/journal/year/IF</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Burnout syndrome and weekly workload of on-call physicians. Sao Paulo Medical Journal 2012 IF: 0.723</td>
<td>MBI with 22 questions and 5 answer options with 6 cutoff points. The scores for emotional exhaustion: greater than or equal to 27 indicate high levels, 19-26 indicate moderate levels, and those below 19 indicate low levels. The scores for depersonalization greater than or equal to 10 indicate high levels, 6-9 indicate moderate levels, and below 6 indicate low levels. The scores for job satisfaction 0-33 indicate high levels; 34-39 indicate moderate levels, and those greater than or equal to 40 indicate low levels. Participants were diagnosed with BS by an experienced psychologist according to the criteria established by Christina Maslach.</td>
</tr>
<tr>
<td>2. The application of Reiki in nurses diagnosed with burnout syndrome has beneficial effects on concentration of salivary IgA and blood pressure. Revista Latino-Americana de Enfermagem 2011 IF: 0.534</td>
<td>MBI-HSS with 22 questions in 3 domains: emotional exhaustion, depersonalization, and job satisfaction. The study chooses to use only the subclass emotional exhaustion.</td>
</tr>
<tr>
<td>3. Can a single question effectively screen for burnout in Australian care care workers? Hansen and Girgis BMC Health Services Research 2010 IF: 1.710</td>
<td>MBI with 22 questions: 10 questions for emotional exhaustion, 5 for depersonalization, and 7 for job satisfaction. Severe emotional exhaustion is defined by a score higher than or equal to 27, cynicism with a score higher than or equal to 10, and personal satisfaction with a score lower than or equal to 33.</td>
</tr>
<tr>
<td>4. Trend in burnout among Swiss doctors. Swiss Medical Weekly 2010 IF: 2.086</td>
<td>CESQ-PE with 20 questions, divided into 4 domains: disillusionment with the job (5 questions), emotional exhaustion (4 questions), indifference (6 questions), and guilt (5 questions). Low scores in disillusionment with the job (&lt; 2) and high scores in emotional exhaustion, indifference, and guilt (≥ 2) indicate high levels of the BS.</td>
</tr>
<tr>
<td>5. Validation of the Brazilian version of “Questionnaire for the Evaluation of Burnout Syndrome” for teachers. Revista de Saúde Pública 2010 IF: 1.219</td>
<td>MBI with 22 questions: 10 questions for emotional exhaustion, 5 for depersonalization, and 7 for job satisfaction. Severe emotional exhaustion is defined by a score higher than or equal to 27, cynicism with a score higher than or equal to 10, and personal satisfaction with a score lower than or equal to 33.</td>
</tr>
<tr>
<td>6. Burnout syndrome in professors at two universities in Popayan, Colombia. Revista de Saúde Pública 2010 IF: 1.219</td>
<td>CBB Burnout Breve with 22 questions includes neutralization precursors such as features of the job, boredom, and organization; emotional exhaustion, depersonalization, and job satisfaction; physical consequences, workplace and performance. The answers are scored from 1 to 5.</td>
</tr>
<tr>
<td>7. Profile of stress and burnout syndrome in Mexican dental students at a public university. Revista Chilena de Neuro-Psiquiatría 2010 IF: 0.110</td>
<td>MBI with 22 questions and 3 domains: emotional exhaustion, depersonalization, and job satisfaction. It uses a Likert scale with 7 possible classifications. Scores above 26 for emotional exhaustion, above 9 for depersonalization, and above 34 for job satisfaction are regarded as high.</td>
</tr>
<tr>
<td>8. The prevalence of burnout syndrome in seventh year medical students at a private university in Lima, Peru. Revista de Neuro-Psiquiatría 2010 IF: 0.100</td>
<td>MBI-HSS with 22 questions and 3 domains: emotional exhaustion, depersonalization, and job satisfaction. The scale has seven classifications that range from 0 (never) to 6 (every day). High levels of depersonalization (scores higher than or equal to 10) or emotional exhaustion (scores higher than or equal to 27).</td>
</tr>
<tr>
<td>10. Single item measures of emotional exhaustion and depersonalization are useful for assessing burnout in medical professionals. Journal of General Internal Medicine 2009 IF: 3.449</td>
<td>It uses Spearman correlations between the scores of MBI-EE and similar results for MBI-DP. The scores are compared between individual questions through each answer sample for MBI-EE and MBI-DP and then compared to the results of the general MBI.</td>
</tr>
<tr>
<td>11. Relationship between job burnout and work performance in a sample of Iranian mental health</td>
<td>MBI adapted to the Iranians by local authors. Alpha coefficient for the Cronbach validity test of 0.89. The instrument includes 27 questions that measure emotional exhaustion (9 questions), depersonalization (9 questions), and resilience (9 questions).</td>
</tr>
</tbody>
</table>
Burnout syndrome is defined as the combination of high emotional exhaustion (≥ 27 points), depersonalization (≥ 10 points), and low scores for personal accomplishment (≤ 33 points). The MBI-HSS with 22 questions: 9 questions for emotional exhaustion, 5 for depersonalization, and 8 questions for personal fulfillment. Scores for emotional exhaustion lower than 17 points are considered as low, scores from 17 to 27 are regarded as average, and scores higher than 27 are regarded as high.

CBP-R with 66 questions having a 5-point Likert scale. It evaluates emotional exhaustion, dehumanization, and reduced personal accomplishment.

Each dimension of the burnout syndrome was described in an independent way. Emotional exhaustion was evaluated in 9 items, depersonalization in 5, and personal accomplishment in 8. The cutoff points, according to Tamayo’s adaptation, were used for the 5-point scale. For emotional exhaustion, scores equal to or greater than 27 pointed out high levels; 19-26, moderate levels; and less than 19, low levels. For depersonalization, scores equal to or greater than 10 pointed out high levels; 6 to 9, moderate levels; and below 6, low levels. The scores related to the personal sphere were fulfillment in the opposite direction from the others, so that the score from 0 to 33 pointed out high levels; 34 to 39, moderate levels; and greater than or equal to 40, low levels.

Figure 3. Summary of the selected articles.
DISCUSSION

Non-clinical diagnosis of burnout constitutes a problem because of the variety of instruments currently used with different adaptations and cutoff points. Proper identification of the BS not only implies a better prognosis and appropriate treatment for the individual, but it also improves the quality of care provided by the institution, as the burnout affects not only the employee, but the organization.\(^\text{11,12}\)

The original version of the MBI\(^\text{13}\) resulted in different adaptations and validations according to research conducted by various authors, with different populations. Sometimes, these adaptations hinder the identification of the BS, where instruments constructed and revalidated for a certain population are used in populations different from the construct’s purpose. This occurrence may be more frequent in inexperienced researchers who are beginning their studies on the subject.

The MBI is the most widely used instrument to evaluate the BS, and it is adapted to various languages. The literature confirms that its validity and reliability are adequate.\(^\text{14}\)

Additional variations of the MBI were adopted later, based on reliable studies. The original variations of the MBI include the MBI-Human Services Survey (MBI-HSS): the original instrument that has been developed for professionals in human resources for health; the MBI-Educators Survey (MBI-ES): adaptation for use by educators; and the MBI-General Survey (MBI-GS): this new version of the MBI has been designed for use by workers in other occupations.\(^\text{15}\)

Some of the studies analyzed (1, 2, 4, 7, 14, 15, 16, and 18) used the first version of the inventory to identify the BS. It is worth noticing the emphasis in these domains: emotional exhaustion, depersonalization, and job satisfaction. However, the terms used to describe these domains have not been standardized among the studies. For instance, study 4 uses the term “cynicism” to describe depersonalization. Moreover, study 16 uses the term “emotional tiredness.”

Differences in the Likert scales used were scored for the psychometric evaluation of answers. Various methods to use the scale are observed. For instance, studies 7, 8, 15, and 19 used a 7-point Likert scale, while studies 17 and 18 used a 5-point Likert scale. Such differences may lead to significant discrepancies in the presentation of results, if the standard, which is established on a scientific basis concerning the sensitivity and reliability to evaluate the questions of inventories, is not applied, endangering the accuracy of these non-clinical diagnoses.\(^\text{14}\)

Some researchers chose to use variations of the MBI to better evaluate subjects in their study. As an example, studies 3, 8, 12, and 19 used the MBI-HSS and study 9 used the MBI-GS. Selecting the appropriate variation of the MBI is a methodological need, in order to minimize potential errors associated with the various research subjects. An error in the choice of MBI variations can determine the lack of reliability in a study.

Study 3 chose to use only the emotional exhaustion domain, excluding the two other domains of the inventory. This completely changes the BS non-clinical diagnostic triad, something which can result in a dubious diagnosis, especially because depersonalization is the only dimension that makes the BS different from other psychic disorders.\(^\text{8}\) If the study objective was investigating emotional exhaustion, there are specific instruments validated internationally for physical and emotional stress, such as the Assessment Questionnaire on the Sources of Physical and Emotional Distress (QFD).\(^\text{16}\)

Each researcher is free to try new working methods in her/his research, provided that it does not exceed scientific rigor and increase bias.

Studies 5, 6, 10, and 13 used other questionnaires, however not always based on the symptomatic triad of the BS subclasses for the primary identification and evaluation established.\(^\text{13}\) It is worth noticing here the risks involved with the use of other methodologies and tools that have not been duly tested and those that do not address the main characteristics of the BS, especially due to symptom similarities with other mood disorders, such as depression.\(^\text{17}\) Studies like these should be carefully evaluated as for their methodological quality before being chosen to use by the academic community in order to study the BS.

The inventory translation and application to various cultures is a major topic for discussion. Some researchers (study 11) argue that, during the translation process, key changes must be made, since the themes are different from those aimed at the original population under study. However, such changes should not alter the focus on the main BS symptoms. These tools should be judiciously tested, using methods and coefficients concerning statistical reliability accepted on an international basis, such as Cronbach’s alpha.\(^\text{14}\)
Most studies selected here are cross-sectional. Information on research design and its typology is important to evaluate the methodological quality of articles.

**Step 9:** Conclusion – presentation of the review, synthesis of knowledge.

In this review, we observed that the methodologies and tools for non-clinical diagnosis of the BS around the world took individual dimensions of each researcher and a local and regional nature, hindering a single reading, in addition to international and systematic standards, set and established on a scientific basis, and they can lead to false diagnoses and direct impact on occupational health assessment. It is worth emphasizing that data were obtained from recent articles, published less than 5 years ago, which have an actual and current data set. The various methodologies and tools used to address this issue can increase the risk to workers’ mental health.

It is believed that the many ways of doing research and authorial freedom are significant in the process to construct science, either theoretical or empirical, provided that the scientific method prevails and becomes a communicative motive in the scientific society. This study is not aimed at listing more or less effective ways with regard to the methodologies and tools used to identify the BS, but at emphasizing, especially to researchers on occupational health, the importance of methodological choice and tools appropriate for each type of population under study.

**FUNDING**

Brazilian Coordination for the Improvement of Higher Education Personnel (CAPES) by funding the study through the Postdoctoral Program Abroad (EDP).

**REFERENCES**


10. Stillwell SB, Fineout-Overholt E, Mazurek B, Melnyk, Kathleen M, Williamson. Evidence-
Based practice step by step: Searching for the Evidence Strategies to help you conduct a successful search. [Internet]. 2010 [cited 2015 May 25];110(5):[about 5 p]. Available from: 


17. Gomes APR, Quintão SR. Burnout, satisfação com a vida, depressão e carga horária em professores. Aná Psicológica [Internet]. 2011 [cited 2015 Nov 15];29:335-44. Available from: 

Submission: 2015/11/11
Accepted: 2016/06/04
Publishing: 2016/08/01

Corresponding Address
Salomão Patrício de Souza França
Rua São Tomé, 1073 D
Caixa postal 4200-491 – Porto, Portugal