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# Burnout and work-related stress in Italian rehabilitation professionals: A comparison of physiotherapists, speech therapists and occupational therapists

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**Abstract**.
**BACKGROUND**: Healthcare workers are exposed to work related stresses that significantly increase their risk of burnout.
**OBJECTIVE:** To evaluate and compare burnout and work related stress levels in three categories of health professionals: physiotherapists, speech therapists and occupational therapists.
**METHODS:** A convenience sample of 391 health professionals participated, including 210 physiotherapists, 101 speech therapists and 80 occupational therapists. We collected general socio-demographic information and administered the standardized Italian version of the Maslach Burnout Inventory (MBI) and the Health and Safety Executive (HSE) Management Standards Indicator Tool.
**RESULTS:** We found the proportion of professionals with high-risk scores in the three dimensions of the MBI to be as follows: Emotional Exhaustion 32%, Depersonalisation 13% and Personal Accomplishment 9%. Overall, 14% of participants were at high risk of burnout. No significant differences were found between the three professional categories. Five subscales of the HSE were associated with burnout: Control ($p < 0.01$), Management support ($p < 0.01$), Relationship ($p < 0.05$), Role ($p < 0.01$), and Change ($p < 0.05$).
**CONCLUSIONS:** Like all health care workers, rehabilitation professionals are at a high risk of burnout. There are common mechanisms underlying burnout in the different professional groups investigated. Further research in occupational health in rehabilitation settings is needed to prevent burnout.

Keywords: Burnout, professional, occupational diseases, psychological, rehabilitation, stress

## 1. Introduction

An individual who does not feel able to meet the demands at work will begin to feel frustrated, dissatisfied and disappointed, retreating psychologically and losing interest in a job previously experienced as enjoyable [1]. Essentially, when the demands of the job are in excess of a worker's skills and resources, this often results in work-related stress and, as a consequence, burnout. Burnout can be described as an imbalance between a person's investment in their professional activities and the results obtained, between demands and the resources at hand to fulfil them. Simply put, "People give much and receive too little in return" [2]. As Paine [3] has pointed out, the term "burnout" has its origins in sports, where it refers to the professional athlete who, after some failures, is exhausted, "burned out", and not capable of producing good results. The term was later transferred to professional settings and associated first

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to social health professions and then to all helping professions: those professions where the relationship with clients is central, and where the main objective is the care, help and support of others, this includes physicians, nurses, health workers, psychotherapists, teachers and educators. All helping professions are at risk of developing burnout.

Maslach [4, 5] collected many interviews, surveys and field observations of more 1000 workers experiencing burnout, in a wide variety health and human services, and she uncovered those aspects that were common to sufferers. Based on this information, she proposed a 3-dimentional model that assesses the different aspects of experienced burnout: (1) *Emotional Exhaustion* (EE) manifests itself through the sufferers' feeling of having "burned" their psychological energies, leading to a sharp decline in their emotional resources due to a prolonged exposure to stressful emotions that adversely affect physical wellbeing. (2) *Depersonalisation* (DP) is a defence strategy marked by indifference and cynicism towards other people's emotions and needs, in an effort to avoid the perceived threat represented by the emotionally demanding relationship with clients. (3) *Personal accomplishment* (PA): workers affected by burnout syndrome experience a feeling of professional inadequacy. They lose confidence in their ability to perform their work effectively and tend to develop a sense of increasing dissatisfaction as well as feelings of failure and low self-esteem. This can leave health professionals feeling unable to help others [6].

The need for the implementation of contextual interventions aimed at individuals on the one hand, and the need to standardize the procedures dictated by the work organization on the other hand, puts workers at the center of a conflict between technical/professional objectives, and structural requirements. Six main factors have been implicated in the onset of burnout: overload of work, lack of control over one's own actions, inadequate reward for one's work, a crisis in one's sense of community and belonging, unfair treatment, and the experience of conflicting values. From results of a study conducted by Schaufeli & Enzmann [2], it appears that the work environment is an important factor in the development of burnout. In particular, a high amount of work to be completed in a relatively short amount of time seems to predispose workers to overload. In addition, Maslach, Schaufeli and Leiter [7] have pointed out that the helping professions are high-touch professions, where there is continuous contact between professional and client. This direct and long-term relationship with people in need puts health and social care professionals at particular risk of developing burnout.

Among the demographic factors studied by Maslach, Schaufeli and Leiter [7], age showed the highest correlation with burnout. In particular, burnout levels have been found to be highest in health operators between 30 and 40 years of age. Moreover, the authors found age-dependent risk to be influenced by experience and seniority, with a higher risk of burnout at earlier career stages. While the reasons for this are not clear, Maslach, Schaufeli and Leiter have suggested the possibility that young workers who develop burnout might leave their jobs, leaving only individuals that are more resistant to burnout to reach later career stages [7].

Some health care professionals are in daily contact with the physical and psychological pain of clients as they face various states of disability. This naturally triggers emotional responses and may lead caregivers to defend themselves by distancing themselves from relationships with their clients [8]. As part of their work health professionals respond to the emotional burdens experienced by their patients, sometimes having to hide their own emotions. Physiotherapists, speech therapists and occupational therapists are all affected by this. Physiotherapists work with physically disabled patients, adults and children. They work towards the functional rehabilitation of physical, cognitive and psychomotor disabilities using physical therapy techniques such as manual and massage therapies. Therapists regularly evaluate and treat disorders in the areas of motor skills and higher cortical and visceral functions, resulting from congenital, acquired and pathological events of varied aetiology [9]. A physiotherapist's personality is a key factor in their work and can even be said to be a working tool. Therapists often have to cope with aggressive or depressive patient behaviours, which may overload their ability to give an appropriate response to a stressful event. The same difficulties are faced by speech therapists, who work in the prevention and rehabilitation of language and communication disorders with children and adults. This includes all diseases that cause disorders of voice, speech, oral and written language, including cognitive disabilities. Finally, occupational therapists work in the prevention, treatment and rehabilitation of patients who have physical or mental disorders and who may be affected by temporary or permanent disability. Therapists use individual or group activities to promote the recovery, rehabilitation, adaptation and

integration of clients into their personal environments, domestic and social lives. Therapists identify and emphasize the motivational aspects and the potential of individual adaptation, they help choose and shape orthotic/assistive devices, and they suggest living environment changes and promote educational activities for patients their families and communities. They encourage an improvement in activities of daily living, in learning/Studies, in work or social participation in the various areas of occupation. Their intervention can range: from organizing shopping to meal preparation, such as appropriate use of information technologies or preparation learning and writing. Every occupational therapy intervention is specifically adapted to the patient with respect to the degree and type of support needed as well as the context [10–14].

All of these health professionals work in multidisciplinary teams. While physiotherapists and speech therapists take part in a rehabilitation project overseen by a physician, they manage their work autonomously. Occupational therapists collaborate closely with other health and social service professionals. The quality of health care services can be improved when providers work as a team; however, the teamwork itself requires additional energy on part of the health care professionals, as well as functional communication between them [8]. A further feature characterising the activities of the abovementioned health care professionals is the timing of their interventions: speech therapists and physiotherapists typically work with patients in the acute phase of disease, while the occupational therapist's intervention tends to occur at a later stage. Occupational therapists focus on patients achieving functional autonomy. After reaching this goal, other health professionals or the client's relatives may continue the work of the therapist in the client's home. Finally, physiotherapists work with multiple clients in parallel, while speech therapists tend to focus on a single patient at a time and may only take on a new patient after completing the work with the previous one.

Most of the research reviewed for the present study focused on physicians and nurses and suggested that burnout resulted from prolonged exposure to stress [9]. Physiotherapists, occupational therapists and speech therapists are also exposed to high levels of stress in their professional work; however, there is a lack of studies concerning burnout in these groups.

The objective of the present study was therefore to assess and compare the level of burnout and the risk factors for work-related stress in physiotherapists, speech therapists and occupational therapists, and explore whether any particular demographic and work-related factors were associated with an increased risk of burnout.

## 2. Methods

### *2.1. Sample and study protocol*

Physiotherapists, speech therapists and occupational therapists were recruited from various hospitals and private health care clinics in the Lazio (a region of Italy) between January and October 2011. We approached representatives of each health care agency to gauge their interest in participating in our study. We then selected those institutions from which the greatest number of professionals could be recruited.

We recruited a total of 391 professionals (98 males and 293 females; mean age 38.49 years; SD 10.06). The distribution according to the professional groups of interest was as follows: 210 physiotherapists (mean age 40.8; SD 9.5), 101 speech therapists (mean age 36.6; SD 9.9) and 80 occupational therapists (mean age 34.9; SD 10.2).

Participants were asked to complete a brief, anonymous, general information questionnaire which contained demographic information such as gender, age, as well as stress factors connected to their work situations, including workplace, type of work contract, years at work, weekly working hours and distance between home and workplace.

The risk of burnout was assessed through administration of the Maslach Burnout Inventory (MBI), an assessment tool developed by Christina Maslach and Susan Jackson [15]. The present study used the standardized Italian version of the MBI [16]. Furthermore, to evaluate the development of risk factors for work-related stress, we administered the Health and Safety Executive (HSE) Management Standards Indicator Tool. The HSE published by the British authority of health prevention and safety at work [17]. The Authority has developed a managing standard (HSE Management Standard) with the aim of reducing work-related stress levels in British workers. The HSE Managing Standard detects the presence of burnout risk [18]; it was validated in Italy by the former ISPESL-INAIL (INAIL, National Institutes for Insurance against Accidents at Work) [19].

Health care professionals who were found to be at a greater risk of burnout were compared to those

whose risk was found to be lower with respect to the work-related stress sources. Critical situations deriving from working conditions [20], that are severe enough to require organizational intervention, are significantly associated with a higher risk of burnout, as measured by the following HSE questionnaire subscales: Control, Management Support, Relationships, Role, and Change.

### 2.2. Ethics

This investigation respected the Ethical Principles of Psychologists and the National Board of Italian Psychologists Code of Ethics for the Psychologist. All participants provided written informed consent.

## 3. Measures

### 3.1. Burnout symptoms

The MBI is composed of twenty-two items with three subscales: *Emotional Exhaustion (EE)* subscale measures the participant's tendency to be emotionally drained and exhausted by their work; it is composed of nine items. The *Depersonalisation (DP)* subscale measures the level of rapport with clients; it is based on five items. The *Personal Accomplishment (PA)* subscale measures worker's satisfaction levels; it is based on eight items [21]. Each item is a statement describing an experience. Participants indicate the frequency with which they encounter these experiences using a 6-point Likert-type scale where 1 = never and 6 = every day. Burnout is considered as a continuous variable with low, medium or high scores. Subscale scores are considered high if the obtained values fall in upper tertile of the distribution, medium if they fall in the middle tertile, and low if they fall in the bottom tertile. The overall burnout level is determined by results from all three scales. Specifically, a high risk of burnout is defined by high scores on the EE and DP subscales and low scores on the PA subscale [21].

### 3.2. Risk factors for work-related stress

The HSE Management Standards Indicator Tool examines possible risk factors for the development of work-related stress. The British authority of health prevention and safety at work developed a managing standard (HSE Management Standard) with the aim of reducing work-related stress levels in British workers and implementing standards for the management of the pressures that can lead to stress in the workplace. The authority developed and validated this questionnaire in the United Kingdom and in the Republic of Ireland with 26,000 workers [22]. The HSE It has since been validated in Italy [19–23].

The HSE Indicator Tool is composed of 35 items, to which participants respond by indicating the frequency with which they agree with the content of each item using a 5-point Likert scale where 1 = X and 5 = X.

Overall results can place participants into one of four categories: "excellent level performance", "good level performance", "interventions needed" and "urgent interventions needed". The HSE Management Standards define the guidelines to manage the organization's characteristics and work atmosphere in an effective and controlled way [22]. These guidelines cover six key areas of work planning, which are investigated by the HSE Management Standards Indicator Tool. *Demand* measures workload, work patterns and work environment. *Control* assesses workers' autonomy. *Support* measures encouragement, support and resources provided to the worker by the organization, by the employer and by colleagues. The dimension *Support* is further divided into two subscales: "Management Support" and "Colleague Support". *Relationships* measures the nature of the work climate and how conflict and unacceptable behaviour are addressed. *Role* measures evaluates the workers' awareness of their roles within the organization, as well as the organization's commitment to ensure that conflicts do not develop. *Change* measures the ways in which big and small organizational changes are administrated and communicated within the organization. For each of the six HSE Management Standard dimensions, standard parameters are provided in the form of ideal terms to which the work organization should be aligned [22]. In the present study, we compared the presence of risk factors for work-related stress between individuals at a high risk for burnout and those at a low risk.

### 3.3. Statistical analysis

All statistical analyses were carried out using SPSS (Statistical Package for Social Sciences) v. 20.0. Student's *t*-tests and a chi-square tests were carried out as appropriate.

For the purposes of our study, to increase the power of statistical analysis, we reduced the number of

HSE questionnaire outcomes to two by grouping the original categories as follows: HSE "excellent level performance" and "good level performance" were grouped into a new category, which we named "adequate performance". Likewise, the remaining two HSE categories, "interventions needed" and "urgent interventions needed", were grouped into the new category "need for interventions".

## 4. Results

The proportions of our sample that obtained high-risk scores for each of the MBI subscales were as follows: EE subscale, 32.2%; DP subscale, 13.8%; PA subscale, 9.2%. For medium-risk scores, the proportions were as follows: EE, 25.3%; DP, 27.1%; PA, 24.0%. Finally, the proportions of our sample that obtained low-risk scores were as follows: EE, 42.5%; DP, 59.1%; PA, 66.0%. We did not find any significant differences between the three professional categories (see Table 1); 55 participants obtained a medium-risk score on two of the MBI subscales and a high-risk score on the third subscale. Overall MBI outcomes indicated that 14% of the total 391 subjects were at risk of burnout (see Table 2). The comparison of the risk of burnout between participants in the three professional categories showed no significant differences (see Table 3). The analysis of demographic factors showed a significant correlation between burnout risk and weekly working hours: individuals at higher risk of burnout work longer hours (M = 35.0; SD = 7.2) than those at low risk of burnout (M = 32.6; SD = 7.0).

Table 1
Burnout subscales (MBI) in rehabilitation professionals (N = 391)

| | EE | DP | PA |
|---|---|---|---|
| High | 32.2% | 13.8% | 9.2% |
| Medium | 25.3% | 27.1% | 24.8% |
| Low | 42.5% | 59.1% | 66% |

MBI Subscales: Emotional Exhaustion (EE) = High (>22); Medium (14–22); Low (0–13); Depersonalization (DP) = High (>5); Medium (3–5); Low (0–2); Personal Accomplishment (PA) = High (0–32); Medium (33–38); Low (>38). See text for explanation.

No significant correlations were found between any of the other demographic factors evaluated (age, work years, distance between home and workplace, gender, type of work contract, workplace (see Table 4).

We found that five of the subscales evaluated by the HSE were associated with the risk of burnout. Chi-square tests were significant for the following subscales: Control ($p < 0.01$), Management support ($p < 0.01$), Relationships ($p < 0.05$), Role ($p < 0.01$), and Change ($p < 0.05$). Scores for the Demand and Colleagues Support subscales were not significantly associated with the risk of burnout (see Table 5).

## 5. Discussion

The objective of the present study was to investigate whether there were any differences in the development of burnout in three different professional categories: physiotherapists, occupational therapists and speech therapists. The underlying hypothesis was that any differences in the professional profiles of these three groups might lead to differences in work-related stress and, therefore, to differences in the risk of developing burnout.

Using the MBI we explored the different components of burnout in the three professional groups (physical therapy, speech language pathology occupational therapy) and found that 32.2% of the total group received high-risk scores on the Emotional Exhaustion (EE) subscale, 13.8%, on the Depersonalisation (DP) subscale, and 9.2%, on the Personal Accomplishment (PA) subscale. Similar to the literature reviewed for this study, health care professionals scored higher than average on all dimensions of burnout [24, 25]. We did not find any statistically

Table 2
Burnout risk (MBI) in rehabilitation professionals

| Prevalence | Minor Burnout Risk | Greater Burnout Risk |
|---|---|---|
| Rehabilitation Professionals ($n = 391$) | 86% | 14% |

MBI = overall score expressed in percentages.

Table 3
Professional designation and burnout risk

| Rehabilitation Professionals | Minor Burnout Risk | Greater Burnout Risk | Chi – Square (*) $p < 0.05$; (**) $p < 0.01$ |
|---|---|---|---|
| Physiotherapists ($n = 210$) | 84.3% | 15.7% | 1.979 |
| Speech Therapists ($n = 101$) | 90.1% | 9.9% | |
| Occupational Therapists ($n = 80$) | 84.5% | 15.5% | |

Table 4
Demographic Factors and burnout risk (N = 391)

| | Minor Burnout Risk | | Greater Burnout Risk | | T |
|---|---|---|---|---|---|
| | Mean | Std. Deviation | Mean | Std. Deviation | $^{*}P<0.05$ $^{**}P<0.01$ |
| Age | 38.5 | 10.2 | 38.3 | 9.2 | 0.123 |
| Work Years | 13.3 | 9.8 | 14.2 | 9.2 | –0.661 |
| Weekly Work Hours | 32.6 | 7.0 | 35.0 | 7.2 | –2.195* |
| Distance From the workplace (minutes) | 33.7 | 21.8 | 31.7 | 16.5 | 0.762 |

Table 5
Work-related stress and burnout risk

| HSE Category | | Minor Burnout Risk | Greater Burnout Risk | Chi – Square (*) $p<0.05$; (**) $p<0.01$ |
|---|---|---|---|---|
| Demand | Adequate Performance | 83.6% | 80% | 0.431 |
| | Need for Interventions | 16.4% | 20% | |
| Control | Adequate Performance | 70.2% | 49.1% | 9.599** |
| | Need for Interventions | 29.8% | 50.9% | |
| Management Support | Adequate Performance | 49% | 21.8% | 14.050** |
| | Need for Interventions | 51% | 78.2% | |
| Colleagues Support | Adequate Performance | 58% | 47.3% | 2.228 |
| | Need for Interventions | 42% | 52.7% | |
| Relationships | Adequate Performance | 63.9% | 47.3% | 5.506* |
| | Need for Interventions | 36.1% | 52.7% | |
| Role | Adequate Performance | 66.4% | 38.2% | 16.006** |
| | Need for Interventions | 33.6% | 61.8% | |
| Change | Adequate Performance | 57.4% | 41.8% | 4.620* |
| | Need for Interventions | 42.6% | 58.2% | |

Note. HSE = Health and Safety Executive.

significant differences in the level of burnout among the three professional groups investigated. Thus, our findings suggest that a common mechanism is the role work plays in these three professional groups. One possible explanation may be that professionals in all three categories are in direct contact with the experience of clients with disabilities, and with their emotional and cognitive changes [9]. While each professional group has their own role, they all share the common goal of improving patients' functional skills. All participants worked as part of a multidisciplinary team; however, they carried out their activities autonomously [24]. Speech therapists and physiotherapists work with clients in the acute phase of disease, whilst occupational therapists typically intervene in a next step. All three health care professionals often work with the same clients for long periods, witnessing not only their successes, but also their failed expectations and depressive or aggressive reactions. During intervention participants are often forced to respond to the pressing demands for help with their clients emotional burdens, sometimes having to hide their own emotions. This is particularly hard when the working hours are long; this can impact the professionals' family and social lives beyond the workplace.

Several authors have described the relationship between socio-demographic variables and burnout in health care. It is well established that burnout is experienced in a different way by men and women, with a higher risk of emotional exhaustion in women, and a higher risk of depersonalization in men [25]. The risk of developing burnout, however, does not seem to be associated with gender [26, 27], and our results are in line with this finding. A recent study has confirmed the association between burnout syndrome and age [8, 28, 29], while the link between working hours and burnout is not as strong [24, 30]. None of the other variables captured by the general questionnaire, such as type of workplace, type of work contract, years at work and distance between home and workplace were found to be associated with burnout in our sample. In line with the literature, we found that participants working more weekly hours appear to be at higher risk of burnout [1, 9].

Results of the HSE questionnaire identified an association between difficult work conditions and an increased risk of burnout in the majority of the six areas assessed. Most of the variables measured were significantly correlated to burnout risk. This may be due to several reasons, listed here by HSE subscale area. *Control:* employees may not have a say about the way they do their work; *Management Support:* they may not receive appropriate information from the management; *Relationships:* workers might be subjected to intolerable behaviour or bullying at work. *Role*: workers may not have been explained their role and liabilities properly. *Change*: organizational changes may result in problems for employees; finally, *Demand and Colleagues*: workers may have difficulties coping with the demands of their job, and they may not receive appropriate support from their colleagues.

In our sample, those participants at greater risk of burnout seemed to have little choice in their place of work while also being subjected to a number of difficulties on the job, including a lack of influence on work conditions, such as the management of breaks, lack of feedback, difficulties accessing the resources necessary for their work, and a shortage of policies and procedures designed to support employees. To avoid conflicts, companies should promote positive behaviour [27, 31]. Likewise, giving constructive feedback could increase practitioners' self-reliance [13], which in turn can lead to an improved management of psychological stress and, ultimately, to a better performance at work. The results from our study indicated that the dysfunction of an organization as a whole may play an important role in the burnout risk of the single employee. One possible way to decrease this risk would be to improve and facilitate the exchange of information between employer and employee. In particular, it would be helpful for each professional to be able to share the daily difficulties they experienced with other professionals within the same health care team, a regular practice in many rehabilitation settings in other countries. [9].

A UK study showed workload to be among the most prevalent factors linked to work-related stress, along with other factors, such as bullying, shift work and sexual or racial harassment, cuts in staff complements, and organisational changes [32]. In the present study, we have evaluated workload, work models and work environment through the *Demand* dimension of the HSE, and colleague support and encouragement through the *Colleagues Support* dimension. We did not find these dimensions to be linked to an increase in the risk of burnout in our sample. These results suggest that in our sample, working hours, rather than the intensity of the workload, may be associated with difficulties for the professionals. In addition, working hours and types of carer-patient relationships were similar for physiotherapists, speech therapists and occupational therapists. Thus, the time spent with patients seems to represent a key issue, and professionals in all three categories seem to express their discomfort in similar ways [9–11].

With regards to the *Colleagues Support* dimension, we noted that rehabilitation involves interaction between various professional categories, including those at the center of this study. The daily work towards the same goal can create both a strong collaborative spirit and team cohesion between these health care providers. A spirit of cooperation creates a positive professional environment for the achievement of the common goal and may act as a protective factor against work- related psychological stress.

It is well-established that the helping professions are at particular risk of burnout, and that there is an association with working conditions no matter the level of seniority (entry-level employees vs. management), even though the level of this association declined the higher the employee is in the company's hierarchy [31]. The burnout risk for different health care providers reported in the literature varied between 12% and 84% [33–38]. In particular, the reported burnout risk in the rehabilitation sector varied between 4% and 21% [11, 36]. We mea-

sured the components of burnout extracted from the MBI questionnaire for three categories of rehabilitation professionals. We found that 14% of therapists fell into the high risk category for the development of burnout, but no difference was found between the different categories; a finding that appears to be consistent with the literature.

Results of several studies have shown an association between job satisfaction and rewards, and not only in the form of fair remuneration: it is of great importance for workers to receive recognition for their contributions from managers and colleagues [12, 39]. Health care professionals are involved in achieving goals that are meaningful for the patient; the patient's goals are their goals, and so are their failures. Hence, the emotional investment of health care professionals is very high. Team collaboration and a joint involvement in decision-making can be a good tool for the prevention of work-related stress and burnout. It is well-established that the psychosocial work environment has an effect on stress levels and overall health [40, 41, 42].

## 6. Conclusions

In line with the literature, more research is needed on the detection of burnout and work-related stress. Prevention, monitoring and psychological interventions could decrease the consequences arising from work-related stress. No statistical differences were found between professional groups investigated. These data suggest short and specific interventions for rehabilitation professionals as prevention of work-related stress risk, according to HSE Guidelines. The results of the present study show that health care managers should place a special emphasis on prevention and the detection of early physical and mental symptoms while at the same time promoting and developing support strategies to help professionals increase their resilience, as well as improving team building.

## Conflict of interest

None to report.

## References

[1] Cherniss C. Professional burnout in human service organization, New York: Praeger; 1980.

[2] Schaufeli WB, Enzmann D. The burnout companion to study and practice: A critical analysis. London: Taylor & Francis, 1998. pp. 36-7.

[3] Paine WS. Overview: Burnout stress syndromes and the 1980s. In W.S. Paine (editor). Job Stress and Burnout. Beverly Hills, CA: Sage Publications; 1982.

[4] Maslach, C. Burnout: A social psychological analysis. In J. W. Jones (Ed.), The burnout syndrome (30-53). Park Ridge, IL: London House; 1981.

[5] Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory. (3rd ed.). Palo Alto, CA: Consulting Psychologists Press; 1996. pp. 192-7.

[6] Burla P, Cinti ME, Sygiel A, Gatti R, Burla F. Professional profiles in the healthcare field and factors associated with the development of burnout. Prevention and Research 2012;1(2):62-72. doi: 10.11138/PER/2012.1.2.062

[7] Maslach C, Schaufeli WB, Leiter MP. Job burnout. Ann Rev Psychol 2001;52:397-422.

[8] Li Calzi S, Farinelli M, Ercolani M, Alianti M, Manigrasso V, Taroni AM. Physical rehabilitation and burnout: Different aspects of the syndrome and comparison between healthcare professionals involved. Eur Med Phys 2006;42: 27-36.

[9] Pustulka-Piwnik U, Ryn ZJ, Krzywoszanski L, Stozek J. Burnout syndrome in physical therapists – demographic and organizational factors. Med Pr 2014;65(4):453-62.

[10] Tabaj A, Pastirk S, Bitenc Č, Masten R. Work-related stress, burnout, compassion, and work satisfaction of professional workers in vocational rehabilitation. Rehabil Couns Bull 2015;58(2):113-23.

[11] Rogers JC, Dodson SC. Burnout in occupational therapists. Am J Occup Ther 1988;42(12):787-92.

[12] Scanlan JN, Still M. Job satisfaction, burnout and turnover intention in occupational therapists working in mental health. Aust Occup Ther J Oct 2013;60(5):310-8.

[13] Poulsen A, Khan A, Meredith P, Henderson J, Castrisos V. Work-life factors and cardiovascular disease in paediatric occupational therapists. British Journal of Occupational Therapy 2012;75(5):237-43.

[14] Yalon-Chamovitz S, Selanikyo E, Artzi N, Prigal Y, Fishman R. Occupational therapy and intellectual and developmental disability throughout the life cycle: Position paper. The Israeli Journal of Occupational Therapy 2010;19(1): E3-E8.

[15] Maslach C, Jackson SE. The measurement of experienced burnout. Journal of Occupational Behaviour 1981;2: 99-113.

[16] Sirigatti S, Stefanile C, Menoni E. Per un adattamento italiano del Maslach Burnout Inventory (MBI). Bollettino di Psicologia Applicata 1988;187-188:33-39.

[17] Cousins R, Mackay CJ, Clarke SD, Kelly C, Kelly PJ, McCaig RH. 'Management Standards' and work-related stress in the UK: Practical development Work & Stress 2004;18(2):113-36.

[18] Ravalier JM, McVicar A, Munn-Giddings C. The Management Standards Indicator Tool and evaluation of burnout. Occup Med (Lond) 2013;63(2):145-7.

[19] Marcatto F, D'Errico G, Di Blas L, Ferrante D. La valutazione dello stress lavoro correlato: Adattamento italiano dell'HSE Management Standards Work-Related Stress Indicator Tool. G Ital Med Lav Erg 2011;33(4):403-8.

[20] Dai JM, Collins S, Yu HZ, Fu H. Combining Job Stress Models in Predicting Burnout by Hierarchical Multiple Regressions: A Cross-sectional Investigation in Shanghai. J Occup Environ Med 2008;50(7):785-90.

[21] Lee RT, Ashforth BE. On the meaning of Maslach's three dimensions of burnout. Journal of Applied Psychology 1990;75(6):743-7.
[22] Edwards JA, Webster S, Van Laar D, Easton S. Psychometric analysis of the UK Health and Safety Executive's Management Standards work-related stress Indicator Tool. Work & Stress 2008;22(2):96-107. Doi: 10.1080/02678370802166599
[23] Castaldi T, Deitinger P, Iavicoli S, et al. Valutazione e Gestione del Rischio da stress lavoro-correlato: Manuale ad uso delle aziende in attuazione del d. lgs. 81/08 e s.m.i. Roma: INAIL; 2011.
[24] Fiabane E, Giorgi I, Sguazzin, C, Argentero P. Work engagement and occupational stress in nurses and other healthcare workers: The role of organizational and personal factors. J Clin Nurs. 2013;22(17-18):2614-24.
[25] Montero-Marín J, García-Campayo J, Fajó-Pascual M, et al. Sociodemographic and occupational risk factors associated with the development of different burnout types: The cross-sectional University of Zaragoza study. BMC Psychiatry 2011;11:49. doi: 10.1186/1471-244X-11-49
[26] Gandi JC, Wai PS, Karick H, Dagona ZK. The role of stress and level of burnout in job performance among nurses. Ment Health Fam Med 2011;8(3):181-94.
[27] Brake HT, Bloemendal E, Hoogstraten J. Gender differences in burnout among Dutch dentists. Community Dentistry and Oral Epidemiology 2003;31:321-7.
[28] Ramos R, Jenny G, Bauer G. Age-related effects of job characteristics on burnout and work engagement Occup Med 2016;66:230-7.
[29] Silva JL, Soares RS, Costa FS, Ramos DS, Lima FB, Teixeira LR Psychosocial factors and prevalence of burnout syndrome among nursing workers in intensive care units. Rev Bras Ter Intensiva 2015;27(2):125-33.
[30] Marchand A, Durand P. Psychological distress, depression, and burnout: Similar contribution of the job demand-control and job demand-control-support models? J Occup Environ Med 2011;53(2):185-9.
[31] Lundqvist D, Reineholm C, Gustavsson M, Ekberg K. Investigating work conditions and burnout at three hierarchical levels. J Occup Environ Med 2013;55(10):1157-63.
[32] Blaug R, Kenyon A, Lekhi R. Stress at Work: A report prepared for The Work Foundation's Principal Partners. London: The Work Foundation; 2007.
[33] Soler JK, Yaman H, Esteva M et al. Burnout in European family doctors: The EGPRN study. Family Practice 2008;25:245-65.
[34] Sablik Z, Samborska-Sablik A, Drozdz J. Universality of physicians' burnout syndrome as a result of experiencing difficulty in relationship with patients. Archives of Medical Science 2013;9(3):398-403.
[35] Pavlakis A1, Raftopoulos V, Theodorou M. Burnout syndrome in Cypriot physiotherapists: A national survey. BMC Health Serv Res 2010;11:63. doi: 10.1186/1472-6963-10-63
[36] Serrano Gisbert MF, Garces de Los Fayos EJ, Hidalgo Montesinos D. Burnout in Spanish physiotherapists. Psicothema 2008;20(3):361-8.
[37] Popa F, Arafat R, Purcarea VL, Lala A, Popa-Velea O, Bobimac G. Occupational burnout levels in emergency medicine - a stage 2 nationwide study and analysis. J Med Life 2010;3:449-53.
[38] Frade Mera MJ, Vinagre Gaspar R, Zaragoza García I, et al. Burnout syndrome in different intensive care units. Enferm Intensiva 2009;20:131-40.
[39] Ybema JF, Evers MS, van Scheppingen AR. A Longitudinal Study on the Effects of Health Policy in Organizations on Job Satisfaction, Burnout, and Sickness Absence. J Occup Environ Med 2011;53(11):1251-7.
[40] Leonardi M, Pagani M, Giovannetti AM, Raggi A, Sattin D. Burnout in healthcare professionals working with patients with disorders of consciousness. Work 2013;45:349-56.
[41] Borritz M, Bültmann U, Rugulies R, Christensen KB, Villadsen E, Kristensen TS. Psychosocial Work Characteristics as Predictors for Burnout: Findings From 3-Year Follow Up of the PUMA Study. J Occup Environ Med 2005;47(10):1015-25.
[42] Jacobs K, Hellman M, Markowitz J, Wuest E. Psychosocial Work Environment. In: Marc D. Gellman, J. Rick Turner. Encyclopedia of Behavioral Medicine. New York: Springer; 2013.