

# Burnout syndrome in Europe: towards a harmonized approach in occupational health practice and research

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**Abstract:** Health practitioners and decision makers in the medical and insurance systems need knowledge on the work-relatedness of burnout. To gather the most reliable information regarding burnout diagnosis and recognition in Europe, we used an 8-item standard questionnaire sent by e-mail to occupational health specialists identified via the Network on the Coordination and Harmonization of European Occupational Cohorts (OMEGA-NET) within the European Cooperation in Science and Technology (COST) Action. Participation rate was 100%, and the questionnaire was completed for 37 countries. In 14 (38%) countries burnout syndrome can be acknowledged as an occupational disease. However, only one country included burnout on the list of occupational diseases. The results showed a high variability in burnout diagnosis, in assessment of its work-relatedness, and in conditions allowing compensation of patients. These results reflect a lack of graded evidence on burnout and its determinants. The ongoing research on burnout conducted in the frame of the OMEGA-NET COST Action should be helpful through facilitating standardization of both existing and new data on burnout, a priority outcome requiring harmonization.

**Key words:** Burnout, Diagnosis, Epidemiology, Harmonization, Occupation, Work-relatedness

## Introduction

Although the term burnout has been described since 1974<sup>1)</sup>, neither the Diagnostic and Statistical Manual of Mental Disorders (DSM)<sup>2)</sup>, nor the International Classification of Disease (ICD)<sup>3)</sup> has recognized it as a distinct disorder. In the 10th revision of ICD, burnout is defined as a state of vital exhaustion and is classified under problems related to life management difficulty (Z73). Most often burnout is

defined by means of the dimensions of exhaustion, cynicism and lack of efficacy from the “Maslach Burnout Inventory-General Survey” (MBI-GS)<sup>4)</sup>. Some authors who studied burnout in relation with specific working conditions, specified it as occupational<sup>5)</sup>, professional<sup>6)</sup> or job burnout<sup>7)</sup>, though no consensus exists on this terminology.

Burnout has negative consequences for individuals, organizations as well as society. At the individual level, burnout can cause emotional and mental stress, leaving professionals feeling unsatisfied in their careers<sup>8)</sup> and employees who were once enthusiastic and excited about their career drained, cynical, and ineffective<sup>9)</sup>. At the organization and society levels, burnout causes high healthcare costs and productivity loss, due to increased turnover intentions and

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decreased performance<sup>7</sup>). Shanafelt *et al.* estimated that a US healthcare system with 500 physicians, at the average national burnout rate of 54%, can expect to spend US \$12 million every year just to replace physicians who leave the organization due to burnout<sup>10</sup>). In Germany, burnout annual cost in lost productivity was estimated 9 billion euros<sup>11</sup>), while in Switzerland, work-related stress and exhaustion cost between CHF 5 and CHF 5.8 billion a year<sup>12</sup>).

Diagnosis and treatment of patients with burnout in occupational health practice are challenging due to different etiological theories, numerous burnout conceptualization attempts and a variety of assessment tools<sup>13–16</sup>). These challenges have repercussions for the recognition of burnout as an occupational disease and its compensation when appropriate. To evaluate these challenges, an exploratory study was conducted among European Union (EU) countries<sup>17</sup>). This study allowed mapping the evaluation systems of burnout syndrome in the EU, possible compensation of this disorder and preventive measures used. However, the authors reported several methodological limitations of their study, including the potential for selection, misclassification and missing data bias<sup>17</sup>). In fact, the data were unavailable for five out of 28 countries, due to lack of response from the corresponding experts. Some of these limitations, namely the respondent selection and missing data problems, may, however, be addressed using European Cooperation in Science and Technology (COST, [www.cost.eu](http://www.cost.eu)).

Funded by the EU Horizon 2020 Program, COST is the longest running European platform where researchers can jointly develop their ideas and initiatives through the trans-European networking of nationally funded research. COST activities are largely arranged as COST Actions. In 2017, a COST Action entitled “The Network on the Coordination and Harmonization of European Occupational Cohorts (OMEGA-NET)” was launched<sup>18</sup>). This four-year (2017–2021) Action seeks to optimize the use of occupational, industrial and population cohorts at the European level by advancing (1) collaboration of cohorts with extensive contemporary information on employment and occupational exposures, (2) co-ordination and harmonization of both new and existing occupational exposure assessment efforts, and (3) facilitation of an integrated research strategy for occupational health in Europe, with the aim to extend globally<sup>18</sup>) (<http://omeganetcohorts.eu/>). In 2018, 37 countries have joined OMEGA-NET, each country usually represented by one or two research organizations, allowing registration of two occupational health researchers as OMEGA-NET Management Committee (MC) members and two additional researchers

as their substitutes. Upon approval at the national level, participants of the network may attend OMEGA-NET MC meetings and scientific events, such as training courses, workshops and conferences, thanks to the EU funding related to this Action. The OMEGA-NET participants are all active as occupational health scientists and professionals, specialized in occupational health, including occupational medicine, occupational psychology and ergonomics, occupational epidemiology, occupational hygiene, and exposure assessment<sup>19</sup>). Work-related psychosocial determinants of mental health are one of six research areas OMEGA-NET has decided to focus on. Therefore, the OMEGA-NET network corresponds to a perfect setting and opportunity for accurately completing the results of the exploratory study on burnout by Lastovkova *et al.*<sup>17</sup>).

In this report, we aimed at completing the first map of the evaluation system of burnout syndrome in Europe extended to the 37 COST Association member countries, and presenting the ongoing research on burnout conducted within the framework of the OMEGA-NET COST Action.

## Participants and Methods

During the second OMEGA-NET meeting in Barcelona (February 2018), we prioritized research tasks focused on mental health and burnout. After the meeting, we contacted occupational health specialists from OMEGA-NET participating countries by e-mail and each specialist identified a competent person in their country to complete a survey. The identified experts were then asked to provide the most reliable information regarding eight domains of interest<sup>8</sup>) as follows: (1) the presence of an official national list of occupational diseases, (2) the possibility to acknowledge burnout and compensate patients, (3) evaluation criteria for compensation, (4) number of subjects with acknowledged burnout syndrome over the past year, (5) number of compensated subjects over the past year, (6) proportion of companies having an action plan to limit stress at work, (7) proportion of companies where employees participate in psychosocial risk assessment, and (8) proportion of companies collaborating with psychologists. To collect these data, they received an electronic questionnaire and instructions, stating that the responses were expected by e-mail a month later. The data were extracted and tabulated for summarizing and statistical analyses, using Microsoft Excel software.

As in the previous exploratory study, the Eurobarometer Working conditions survey<sup>20</sup>) statistics were used to assess the proportions for the last three domains, reflecting the implementation of prevention strategies in each country.

For concerns of internal consistency, we sent a pre-completed table with proportions from this survey to the specialists and requested to check the accuracy of data for their respective countries. We also asked the participating specialists to identify national occupational health specialists in countries beyond OMEGA-NET participants. The identified specialists were in turn contacted with the same request as those participating in OMEGA-NET. This strategy allowed us to receive responses from all contacted countries (n=14) and update the information from the exploratory study for all of the 37 European COST Full Members countries (Table 1).

## Results and Discussion

As can be seen in Table 1, thirty five (92%) countries have an official list of occupational diseases. The only two countries not having such a list are the Netherlands and Sweden. In 14 (38%) countries (Bosnia and Herzegovina, Cyprus, Denmark, Estonia, France, Hungary, Iceland, Latvia, Malta, Netherlands, Portugal, Slovakia, Sweden and Turkey), burnout syndrome can be acknowledged as an occupational disease. However, Latvia is the only country where burnout is explicitly listed on the list of occupational diseases. In Bosnia and Herzegovina, Denmark, Estonia, Hungary, Malta, Portugal, Slovakia and Turkey, burnout can be acknowledged as a chronic stress-related occupational disease through the “open item” in the list of occupational diseases. It is noteworthy to mention that in Turkey, the court of justice can acknowledge burnout as an occupational disease based on the decision made by the health insurance board. In Iceland, the Netherlands and Sweden, any disease or injury can be acknowledged as occupational, assuming sufficient proof of the causality is provided. France uses the “Additional occupational disease recognition system”. In Cyprus, the examining physician can acknowledge burnout as an occupational disease if it is related to the working conditions of the affected person. There are no specific evaluation criteria but the Department of Labour Inspection can advise the examining physician reporting or suspecting a burnout case.

The EU membership status of the country does not seem to influence the possibility to acknowledge burnout as an occupational disease. However, the proportion of countries with such a possibility among non-EU countries (33%) is slightly lower than among Member States of the EU (39%). The possibility to acknowledge burnout as an occupational disease among COST Members States (38%), Members of OMEGA-NET (41%), and Member States of the EU is

similar.

As shown in Table 1 and extensively commented by Lastovkova *et al.*<sup>17)</sup>, there is a high variability in burnout diagnostic criteria, in assessment of its work-relatedness, and in conditions allowing compensation. This reflects a lack of graded evidence on burnout and its determinants. Although several systematic reviews and meta-analyses have tried to assess the evidence of the relationship between work-related determinants and burnout<sup>21–23)</sup>, none has addressed the complete panel of possible burnout determinants in workers, including both individual and work-related factors. The majority of studies have only measured some factors (predominantly work-related) and some outcomes (i.e., some dimensions of burnout), and the results from these studies cannot be easily compared. In addition, interrelationships between different determinants have rarely been investigated.

The absence of a standardized definition of burnout, the lack of a reference method for its diagnosis in medical practice, and the need for harmonization of this outcome measurement in occupational health research are important concerns for this study. Although we tried to control for the participant selection bias (based on the OMEGA-NET adherence procedure and national expert identification process) and missing data issues, potential outcome misclassification bias is still difficult to circumvent. Because of limited resources, it was impossible to make an inventory and scrutinize all sources of data within this study, as well as to extend it beyond the eight domains of interest, defined by Lastovkova *et al.*<sup>17)</sup> Moreover, we have not reassessed the data collected in the first survey<sup>8)</sup>, assuming the accuracy of these data. Therefore, this study should be considered as an update of the previous survey, extended to 28 European and nine European neighbor countries.

OMEGA-NET could be helpful through facilitating standardization of new exposure and outcome data harmonization of existing data. In particular, OMEGA-NET intends to provide an opportunity to investigate the causes of variability in research findings between studies and eventually address those related to methodological inconsistencies<sup>18)</sup>. OMEGA-NET considered burnout as a priority health outcome for such a standardization effort, and a dedicated task-group was created in February 2018 (<http://omeganetcohorts.eu/>). Since this date, two meetings have been organized between task-group members to define the priority concerns and research agenda with respect to burnout measurement in epidemiological studies. This agenda currently encompasses several studies on burnout, as summarized in Table 2.

Table 1. Updated\* summary of the evaluation systems of burnout syndrome, possible compensation and preventive measures used in Europe

Country	Country status <sup>a</sup>	Existence of list of occupational diseases	Possibility to acknowledge burnout syndrome	Evaluation criteria	No of subjects with acknowledged burnout syndrome (yr)	No of compensated subjects (yr)	Action plan to limit stress at work (% establishments) <sup>b</sup>	Participation of employees to address psychosocial risks (% establishments) <sup>b</sup>	Use of psychologists (% establishments) <sup>b</sup>
Bosnia and Herzegovina	2, 3	YES	YES, open item	Occupational examination	2 (2014–2016)	2 (2014–2016)	7	68	67
Cyprus	1, 2, 3	YES	YES, but not notifiable	NA	NA	NA	22	61	4
Denmark*	1, 2, 3	YES	YES, open item	Committee evaluation, associated with Depression (F 32.9, F 33.0), adjustment disorder (F 43.2), anxiety disorder (F 41.9)	738 (2005–2015)	592 (2005–2015)	51	77	38
Estonia*	1, 2, 3	YES	YES, open item	Individual occupational examination	0	0	24	42	5
France*	1, 2, 3	YES	YES, additional system	Committee evaluation, the rate of incapacity minimum 25%, associated with diagnosed mental disorders	1 (2015)	1 (2015)	7	68	67
Hungary*	1, 2	YES	YES, open item	Individual occupational examination	0	0	33	51	11
Iceland	2, 3	YES	YES	Individual psychiatric and occupational examination (ILO guidelines)	0	NA	26	69	12
Latvia*	1, 2, 3	YES	YES, listed	Individual psychiatric and occupational examination	42 (2013–2015)	42 (2013–2015)	20	55	8
Malta	1, 2, 3	YES	YES, open item	Committee evaluation. Individual psychiatric and occupational examination	0	0	38	57	9
Netherlands*	1, 2, 3	NO	YES	Individual occupational examination (according to NCOD guidelines)	1989 (2015)	NA	26	62	28
Portugal*	1, 2, 3	YES	YES, open item	Individual psychiatric and occupational examination	NA	7 (2015)	20	55	12
Slovakia*	1, 2	YES	YES, open item	Committee evaluation, Individual psychiatric and occupational examination	0	0	15	43	10
Sweden*	1, 2, 3	NO	YES	Individual psychiatric and occupational examination, duration of the disorder for one year at least and minimum 6.66% loss of income	329 (2015)	99 (2015)	51	73	59
Turkey	2, 3	YES	YES, open item	Committee evaluation after individual psychiatric diagnosis	0	0	38	55	9

Continued Table 1.

Country	Country status <sup>a</sup>	Existence of list of occupational diseases	Possibility to acknowledge burnout syndrome	Evaluation criteria	No of subjects with acknowledged burnout syndrome (yr)	No of compensated subjects (yr)	Action plan to limit stress at work (% establishments) <sup>b</sup>	Participation of employees to address psychosocial risks (% establishments) <sup>b</sup>	Use of psychologists (% establishments) <sup>b</sup>
Albania	2	YES	NO	NA	0	0	24	42	5
Austria*	1, 2, 3	YES	NO	NA	0	0	22	77	20
Belgium*	1, 2, 3	YES	NO	NA	0	0	36	63	36
Bulgaria	1, 2, 3	YES	NO	NA	0	0	33	51	11
Croatia*	1, 2, 3	YES	NO	NA	0	0	9	56	28
Czech Republic*	1, 2	YES	NO	NA	0	0	8	58	7
Finland*	1, 2, 3	YES	NO	NA	0	0	36	71	60
Germany*	1, 2, 3	YES	NO	NA	0	0	20	66	11
Greece	1, 2, 3	YES	NO	NA	0	0	14	68	5
Ireland*	1, 2	YES	NO	NA	0	0	43	63	11
Italy*	1, 2, 3	YES	NO	NA	0	0	49	63	10
Lithuania*	1, 2	YES	NO	NA	0	0	24	46	6
Luxembourg	1, 2, 3	YES	NO	NA	0	0	14	61	8
Montenegro	2	YES	NO	NA	0	0	12	53	11
Norway	2, 3	YES	NO	NA	0	0	40	80	24
Poland*	1, 2, 3	YES	NO	NA	0	0	14	46	22
Republic of Macedonia	2, 3	YES	NO	NA	0	0	NA	NA	NA
Romania*	1, 2, 3	YES	NO	NA	0	0	52	68	43
Serbia	2, 3	YES	NO	NA	0	0	14	48	23
Slovenia*	1, 2	YES	NO	NA	0	0	31	56	24
Spain*	1, 2, 3	YES	NO	NA	0	0	32	63	16
Switzerland	2, 3	YES	NO	NA	0	0	21	59	7
United Kingdom*	1, 2, 3	YES	NO	NA	0	0	57	59	12

\*Data from Lastovkova *et al*<sup>(7)</sup>.

<sup>a</sup> 1=Member State of the European Union, 2= Full Member of European Cooperation in Science and Technology (COST) Association, 3=Member of the OMEGA-NET COST Action.

<sup>b</sup> Data from The Eurobarometer survey on Working conditions (2014)<sup>(10)</sup>.  
 NCOD: Netherlands Center for Occupational Diseases; NA: not applicable.

**Table 2. Studies on burnout scheduled in frame of the OMEGA-NET COST Action (2018–2021)**

N°	Name of study	Study aim	Study design	Data to be used	Methods	Start of study and expected date of completing	Study partners	Source of funding
1	Which factors contribute to the onset of burnout among workers?	To identify as exhaustively as possible all effective predictors of burnout in adult working population	Systematic literature and meta-analysis	Longitudinal studies on burnout adult working population published between the years 1990 and 2018 in peer-reviewed scientific journals, whatever the language used.	Systematic search of literature in Medline/PubMed, Pschinfo and Embase via Ovid. Screening and selection of relevant studies using an Excel form tool. Risk of bias assessment using MEVORECH tool, data extraction, pooling, narrative and whenever possible quantitative summary, analysis of heterogeneity, and grading of evidence for each factor contributing to the burnout onset using GRADE approach	April 2018–June 2020. Publication of results expected by December 2020	OMEGA-NET Burnout working group	COST Action CA16216 (contribution for tools acquisition, working group meetings and publication costs), University of IST/Lausanne and University of Bern BNF – National Qualification Program (contribution for reviewers' salary)
2	Comparative study of Burnout measurement tools	To identify the validated tools of burnout and to examine their epidemiological methodology	Systematic review of literature	Studies on the development and validation of tools measuring burnout, peer-reviewed validation studies published since 1981.	Narrative and comparative review based on two checklists: 1) quality evaluation of diagnostic/prognostic properties in epidemiology; 2) Evaluation of the psychometric properties of burnout tools.	June 2018–October 2019. Publication of results expected by March 2020	As above	As above
3	Pre-existing psychiatric conditions, occupational stress & burnout in a prospective cohort study	To assess the research hypothesis that 1-high workload and over-commitment are predictors of future occupational burnout and 2-pre-existing psychiatric conditions are not mandatory precursors of occupational burnout	Prospective cohort study	Data of the Swiss cohort PsyCol.aus, collected at baseline (2004–2008) and during three consecutive follow-ups (follow-up I (between 2009 and 2012), follow-up II (between 2014 and 2017), and follow-up III (between 2018 and 2020).	The hypotheses will be tested using a generalized linear model where the dependent variable will be the score of the MBI assessed at follow-up III with the Siegrist's effort-reward-imbalance score at follow-up II and the pre-existing psychiatric condition/s as predictors. The models will be adjusted for additional independent variables in order to control for potential confounders. If the number of subjects is sufficiently high, analyses will be stratified by gender.	2019–2021. Publication of results expected by July 2022	The Vaud University Hospital Center (CHUV), Department of Consultation-Liaison Psychiatry and Psychosomatic Medicine University Hospital Zurich	Swiss National Science Foundation (SNSF), Swiss COST grant related to COST Action CA16216 (under review)

Moreover, OMEGA-NET might be helpful in addressing another issue, pointed out by the exploratory study<sup>8)</sup>: the lack of harmonized registration of the occupations of compensated patients. As reported by Lastovkova *et al.*, countries do not keep records of the occupations in a similar way, and frequently, only the economic activity branch/industry is available<sup>17)</sup>. In contrast with economic activity, having three levels of standardized classification for European countries: national, European (the Statistical classification of economic activities in the European Community, abbreviated as NACE) and international (International Standard Industrial Classification, abbreviated as ISIC), there is no standardized classification of occupations on the European level. The coding of occupations is more challenging than the coding of economic activity and can lead to measurement error in subsequent exposure assessment<sup>24)</sup>. Although, several countries use the International standard Classification of Occupations (ISCO), the different versions of the ISCO codes (1988, 1998, 2008) coexist and the same ISCO version may differ somewhat between countries. OMEGA-NET intends to make an inventory of coding systems and existing crosswalks between coding systems and assess their validity. Further development of additional system of crosswalks, which ideally would be implemented in tools for automatic or computer-assisted coding<sup>24, 25)</sup> will be crucial to facilitate collection and harmonization of data on occupation. This in turn, will be helpful for new epidemiological studies.

In conclusion, supplementary data from 14 COST member countries confirm a high variability in burnout diagnosis, in assessment of its work-relatedness, and in conditions allowing compensation of patients in Europe. This reflects a lack of graded evidence on burnout and its determinants. The ongoing research on burnout conducted in the frame of the COST Action OMEGA-NET should be helpful through facilitating standardization of both existing and new data on burnout, a priority outcome requiring harmonization. As practical implications of this effort, we expect to enable occupational health professionals to protect employees of different professions from burning out through early identification of a burnout risk state and timely initiation of appropriate interventions.

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