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A Cross-sectional Survey on Burnout Prevalence and Profile in the Sicilian Population of Ambulance Driver-Rescuers

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ORIGINAL RESEARCH

A Cross-Sectional Survey on Burnout Prevalence and Profile in the Sicilian Population of Ambulance Driver-Rescuers

Abbreviations:

Maslach Burnout Inventory-Human Service Survey (MBI-HSS)

Maslach Burnout Inventory (MBI)

Emotional Exhaustion (EE)

Depersonalization (DP)

Personal Accomplishment (PA)

Principal Component Analysis (PCA)

Abstract

Introduction: Burnout is present at a high rate in emergency medicine. The ambulance driver-rescuers, who furnish the first aid to the victims, are the non-medical part of the Italian *118-service* staff. There is a lack of research on burnout risk in emergency medical Italian services and, particularly, for this category of workers. The two Italian studies, including a little group of ambulance driver-rescuers, reported inconsistent findings.

Hypothesis: The survey investigated for the first time the prevalence and exact profile of Burnout in a large sample of Italian driver-rescuers. As a secondary aim, the study additionally described how the items of the Italian version of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) cluster in components in this sample.

Methods: This cross-sectional survey was conducted between June 2015 and May 2016 and involved all the driver-rescuers operating in Sicily, the biggest and most southern region of

Italy. The subjects received a classification, according to different profiles of Burnout, by using the Italian version of the MBI-HSS, i.e., Burnout, engagement, disengagement, overextension, and disengagement. In order to explore the existence of independent factors, it was conducted a Principal Component Analysis (PCA) on the survey to obtain eigenvalues >1 for each component in the data.

Results: The final sample comprised 2.361 responders (96.6% of the initial sample). 29.8% of them were in burnout [95% confidence interval (CI) 27.8% to 31.8%], and 1.7% presented a severe form (95% CI 1.1% to 2.3%); 30% were engaged in their work (95% CI 21% to 34.8%). 24.7% of responders were disengaged (95% CI 22.9% to 26.5%), 1.2% presented an overextension profile (95% CI 0.8% to 1.7%), while 12.6% felt work-inefficacy (95% CI 11.3% to 14.1%). The factors loaded in a five-factor solution at PCA, explaining 48.1% of the variance and partially replicating the three-factor structure. New dimensions from Personal Accomplishment and Depersonalization subscales described empathy and disengagement with patients respectively and were responsible for the increased risk of Burnout.

Conclusions: These results endorse the importance of screening and psychological interventions for this population of emergency workers, where Burnout could manifest itself more insidiously. It is also possible to speculate that sub-optimal empathy-skills could be related to the disengagement and inefficacy feelings registered.

Introduction

Background

Burnout is a maladaptive response to chronic emotional distress due to a highly interpersonally-oriented work, that the World Health Organization (WHO) recently recognized as a work-related syndrome, and described as a form of emotional exhaustion,

detachment with patients and professional role, and loss of professional satisfaction.[1,2] Leiter and Maslach[3] have recently presented five latent burnout profiles, based on a person-centered analysis, which enriched the traditional dual definition, by adding three intermediate steps between Burnout and engagement. The authors proposed that having one of the three factor-scores out of the cut-off describes a state of disengagement (high in Depersonalization), overextension (high in emotional exhaustion), and ineffectiveness (low in Personal Accomplishment). This approach could provide a more tailored measurement of the burnout phenomenon in different groups of people, particularly if their professional role has not been studied before.

The available reviewed literature on Burnout in emergency medicine detects burnout levels of more than 60% in emergency physicians.[4] A recent meta-analysis confirmed that about 30% of emergency nurses are affected with at least high Emotional Exhaustion or Depersonalization, or low Personal Accomplishment;[5] unpredictability, overcrowding and continuous confrontation with traumatic events in the emergency could be specific risk factors for Burnout in this population.[6]

However, emergency staffs include also other technicians that are involved in the rescue operation, sometimes as the first-line or only team. In 1992 was instituted in Italy the *118-service*, a cross-national institute of emergency, working on the public health ambulances and in an operating center. *118-service* ambulance driver-rescuers drive the ambulance and furnish the first aid to the victims, and they are frequently responsible for quick and crucial decisions; in some preselected occasion, a nurse or an emergency physician intervene, in a medical ambulance. They are the non-medical part of the multidisciplinary team, present with different names and training characteristics all around the world, for example, drivers and attendants, Except Emergency Medical Technicians or EMT-B in the United States. In Italy, ambulance driver-rescuers achieved a regional course to obtain the

license to be a driver and a rescuer of the ambulance; but they do not constitute a professional category, codified into a professional order, and patients and other emergency operators working with them often misinterpret their role. These characteristics could represent an additional risk factor for unacknowledged and untreated Burnout in this group of operators,[7] which may present specific features.

Even if they are likely to be exposed to witnessing distress and to experiment higher levels of physical and psychological symptoms, and job dissatisfaction, as compared to other professions,[8] they have received less attention in research. To date, only two studies examined Burnout in driver-rescuers operators in Italy. Argentero and Setti[9] found out higher levels of Burnout in 42 operators of *118-service*, compared to police operators. Angius and colleagues[10] examined 176 health professionals by comparing them with 79 emergency operators (42 of them were the same group of operators of *118-service* already tested in the previous study), and this last group showed a lower burnout risk and a condition of wellbeing, as compared to the other.

The *Maslach Burnout Inventory-Human Service Survey* (MBI-HSS)[11] has been widely used to assess Burnout. The questionnaire includes three dimensions: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA). Despite general reliability of the three-factorial structure, this has not been fully replicated in the Italian version of the MBI,[12-15] as it was in other versions.[16] Authors attributed this inconsistency to item redundancy, misplacement in factors, or "lost in translation" phenomena and loss of cross-cultural adaptation.[16,17] Not surprisingly, the specific profession of survey-responders at MBI accounts for high variance in factorial loading replication; differences in the interpretation of the meaning of the item could be sample-specific and linked to professional history, current context and goals of the subjects.[18,19]

Importance

The lack of research in this contest makes it challenging to picture the on-the-job training and psychological surveillance required for these semi-professional figures. Moreover, these operators are the first-line interface with patients, and their wellbeing and professional satisfaction is an essential factor of success in the multidisciplinary work team and the rescue operations.

Goals of this Investigation

This survey investigated for the first time the prevalence and the exact profile of the Burnout in the Sicilian population of ambulance drivers-rescuers. Firstly, the study aimed to classify subjects according to different burnout profiles.[3] As a secondary aim, it wanted to describe how the 22 items of the Italian version of the MBI-HSS cluster in components in this category of workers.

Methods

Study Design and Setting

The study was a descriptive cross-sectional survey, with a self-selection sampling strategy, which included the entire population of ambulance driver-rescuers of *118-service* operating in Sicily (Italy) in the study period, i.e., between June 2015 and May 2016. The subjects surveyed were attending an on-the-job training, that involved all the Sicilian *118-service* operators, aimed to improve emergency-management through psychological, legal, and technical training. Each tutor, who followed-up the class along with all the course, informed participants before the survey distribution, together with the psychologist who was responsible for the general training and supervised inter-reliability of administration mode, in the group setting during the first meeting. They instructed to work individually. Those

fulfilling the questionnaires were consenting anonymous responders. All data were anonymous and voluntarily furnished; empty questionnaires were accounted as refusers. The tutor in chief for each district received the questionnaires that were then recollected in Palermo. Researchers from the Institute of Psychiatry at Department of Biomedicine, Neuroscience and advanced Diagnostic (BiND), University of Palermo, checked data for accuracy and internal consistency and performed statistical analyses.

Sicily is the largest region of Italy (25.832,39 Km^2) and the fourth in terms of population (5.026.989 resident people in 2018), with 350.538 annual 118-emergency interventions (2015) (on a national mean of 170.594),[20] thus our results have a potential external validity for the entire Country and can generate hypotheses to test in other geographical areas.

Measurement

It was administered the MBI-HSS because the survey had descriptive aims on the individual wellbeing (vs. Burnout), while the *Organizational Checkup System* (OCS)[21] has a substantial organizational watch (with a higher amount of items dedicated to this part) and it best fits in studies which include hypothesized risk-factors.

The Italian Maslach's version of the MBI-HSS is a self-report scale constituted by 22 items describing feelings about the work and the contact with patients, to score on a 7-point Likert frequency-scale from 0 (never) to 6 (every day). The test was validated on an Italian sample of 1.779 subjects.[12] It consists of three factors: Emotional Exhaustion (9 items) [Cronbach's Alpha (α)=0.87] that measures feelings of being emotionally overextended and exhausted by one's work. Depersonalization (5 items) (α=0.68) measures an unfeeling and impersonal response toward patients. Personal Accomplishment (8 items) (α=0.76) that

measures feelings of competence and achievement in one's work. The socio-demographic sheet included age, gender, and years of career in the ambulance-service information.

Outcomes

The primary outcomes of the study were the scores obtained at MBI-HSS, differentiated in the three factors. To explore the exact profile of Burnout,[3] we used cut-off for each summed-scale scores (S-Table 1) to initially classify subjects according to their level of Burnout. Burnout syndrome would be classically present when scores at EE and DP are high, and scores at PA are low. High PA and low EE and DP describe a strict definition of engagement.[12] Other burnout profiles[33] were disengagement, with high scores in Depersonalization only, overextension high in Emotional Exhaustion, and inefficacy, low in Personal Accomplishment. Subjects' characteristics not fulfilling the abovementioned categories were considered as moderate Burnout (broader definition) if two subscales at least presented medium or high scores (medium or low for PA), and we defined as engaged people presenting only one scale with average scores. The only exposure-variable considered was to be enrolled as a worker in the *118-service*. Potential effect modifiers were age, gender, and years of career. It was also estimated the mean-workload per operator for each district in 2015, by dividing the number of emergency interventions completed in that district in this year by the number of operators working there in the same year. Similarly, it was possible to obtain a mean sickness absence rate for each district in 2015, dividing the number of the day of sickness-absence in 2015 by the number of operators working in each district in the same year. Both mean workload and mean sickness absence, were then classified in quantiles (S-Table 2; S-Table 3).

Statistics

There were examined mean, and standard deviation of each sub-scale, by three summary independent sample t-tests to compare them with the Italian normative data mean and standard deviation from the MBI-HSS (S-Table 1).[12] Chi-square test from ordinal regression analysis was used to compare the proportion of responders to refusers among different districts, to address any sampling bias. ANOVAs, for continuous variables, and Chi-square tests for categorical variables from ordinal regression, were used to assess effect modifiers by comparing responders classified in each specific burnout profile in terms of age, gender, years of career, workload and sickness absence. Bootstrap confidence intervals were bias corrected and accelerated. Alpha coefficient could be affected under variations of the number of items in a measurement,[22] resulting in more significant values for clusters including a bigger number of items[23] and vice-versa. Thus, to check the reliability and internal consistency of the components, it was used Cronbach's Alpha (α acceptable if ≥ 0.65) and average inter-item correlations (r acceptable if ranging between 0.15 and 0.50) to overcome the problem of few items included in some components.[22,23] To understand and describe the structure of the answers to the items in this specific population, a Principal Component Analysis (PCA) was conducted on the 22 items with orthogonal rotation (Varimax), to obtain eigenvalues for each component in the data and to explore the existence of independent factors (extraction criteria = eigenvalues>1). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis (KMO). Bartlett test of sphericity tested if correlations between items were sufficiently large for PCA. The reliability of the test, both in this original structure and in the new five-components solution, was controlled. Work overload is related to burnout[24] and Emotional Exhaustion in particular,[25,26] and estimated mean sickness absence was indicated as a frequent consequence of burnout.[27] As an exploratory analysis, there were calculated percentages of responders who had an average Likert score ≥ 4 (at least once a week) at the items clustering in each sub-factor, to see which of those factors

accounted for the highest median response to the original component. Missing data were addressed whit the listwise method in all the analyses, apart from PCA, which included a pairwise exclusion method. Statistics were performed by using SPSS 25.0 for Mac.[28]

Ethical Approval

The study was conducted following the Code of Ethics of the World Medical Association (Declaration of Helsinki) and received ethical approval from the Sicilian Emergency and Urgency Society (SEUS) 118-service at the time of administration. Further ethical approval was obtained from the Palermo 1-Ethical committee (verb. 2/2019 – 18.02.2019) before the data acquisition and analysis.

Results

Characteristics of Study Subjects

The SEUS 118-service organized 73 courses for a total of 2·684 participants (about 36 participants per class), coming from the nine Sicilian districts as part of the National Health Plan (PSN) Action 1.4 Training Projects. The MBI-HSS was proposed to all classes, except Palermo from 1 to 6 (N=216 subjects) and N=20 subjects from Agrigento 1, because they started earlier as the pilot-in-training groups. Thus, a final sample of 2·444 subjects approached the survey (91% of the participants). The final sample comprised 2·361 responders, which constituted the 96.6% of the surveyed population, while N=83 subjects (3.4%) refused to participate in the survey (Figure 1).

Responders were mostly males (77.9%), with a mean age of 44 years (SD=7.1); they had a mean of 12.2 years of a career (SD=4.4) in the *118-service*. There were no differences in terms of the distribution of responders and refusers' proportion across the nine Sicilian districts [$\chi^2(2)=12.3$, p=0.091] (S-Table 4).

224

225 *Comparison of the Sub-Scales Scores with the Normative Sample and Cut-Off*

226 None of the MBI-HSS items and the three subscales had missing values >5% (Figure 1 and
227 Table 2). As compared with the normative sample, mean scores for EE scale resulted
228 significantly lower than those expected [mean difference (M^{diff})=-10.8; 95% CI=-11.6 to -
229 10.1]; the opposite was true for DP [M^{diff}=2.1; 95% CI=1.4 to 2.7] and PA [M^{diff}=0.6; 95%
230 CI=0.2 to 1.0], which resulted slightly higher in *118-service* operators than in the normative
231 sample (Table 1).

232 Based on factor cut-off, 7.8% [95% confidence interval (CI) 6.8% to 9%] present high
233 levels of EE, 36% (95% CI 34.9 to 39.1) present high levels of DP, and 41.3% (95% CI
234 41.8% to 45.8%) have low PA scores (Table 2).

235

236 *Burnout Prevalence and Profile*

237 Looking at latent burnout profiles (Leiter and Maslach, 2016), 1.7% of responders (N=36,
238 95% CI 1.1% to 2.3%) presented severe burnout, based on scale cut-off, while 29.8%
239 (N=629, 95% CI 27.8% to 31.8%) were in some intermediate form of burnout. As much as
240 30% (N=483, 95% CI 21% to 34.8%) were engaged in their work, according to a broader
241 definition, while the strict definition of engagement embraced 7.1% of subjects only (N=151,
242 95% CI 6.1% to 8.3%). The profile of disengagement was present in the 24.7% of responders
243 (N=521, 95% CI 22.9% to 26.5%), the dimension overextension enclosed the tiny percentage
244 of 1.2% people (N=25, 95% CI 0.8% to 1.7%), and 12.6% felt inefficacy in their work
245 experience (N=267, 95% CI 11.3% to 14.1%) (Figure 2). Responders with distinctive burnout
246 profiles did not differ regarding gender [$\chi^2(1)=0.03$; p=0.845], and years of career [F(6,
247 2·005) =0.304; p=0.935]. A difference among subjects emerged in terms of age [F(6,
248 2·092)=2.7, p=0.011], responders good engaged were slightly younger than disengaged

(M^{diff}=-1.9, 95% CI -3.9 to -0.008, p=0.048). There were no differences in the relationship between sickness absence mean [$\chi^2(2)=0.26$; p=0.878] and workload [$\chi^2(2)=0.61$; p=0.973] among districts, and burnout profiles.

Reliability of the Original Test

The reliability of the test resulted acceptable ($\alpha = 0.689$; α Based on Standardized Items = 0.701). EE subscale was the most reliable ($\alpha = 0.825$; α Based on Standardized Items = 0.827; $r = 0.34$). PA subscale was reliable, but less than that expected from Maslach[11] (α =0.612; α Based on Standardized Items = 0.639; $r = 0.18$). DP did not present acceptable levels of reliability ($\alpha = 0.354$; if item 22 is deleted $\alpha = 0.384$; α Based on Standardized Items = 0.388; $r = 0.11$).

Principal Component Analysis (PCA) on MBI-HSS Items

The sample was adequate for the analysis (KMO=0.874), and all KMO values for individual items were >0.5. The correlations between items were sufficiently large for PCA [X2 (231) = 9223.212, p<0.001].

Five components had eigenvalues over 1 and, in combination, explained 48.1% of the variance. The scree plot was slightly ambiguous and showed inflections that would justify retaining both components 3 and 5 (Figure 3). Given the large sample size and the convergence of the scree plot and the Kaiser's criterion on five components, this is the number of components that were retained in the final analysis.

Table 3 shows the factor loadings after rotation. The item that cluster on the same components suggest that Component 1 (EE) represents emotive exhaustion, and it corresponds with the Emotional Exhaustion original subscale. Component 2 and component 3 represents two aspects of Personal Accomplishment: Component 2 (PA-W) collects items

describing positive feelings about the work, Component 3 describes a positive emotional engagement with patients (PA-P). Finally, Component 4 and Component 5 define two aspects of Depersonalization: Component 4 (DP-W) expresses worries about personal hardening due to work, Component 5 (DP-P) describes the feeling not to be positively engaged with patients and their problems (Item 15 and 22).

The first two components had acceptable reliability (EE: $\alpha = 0.825$, $r = 0.34$; PA-W: $\alpha=0.678$, $r=0.3$). Average inter-item correlation, but not Cronbach's Alpha, resulted into the acceptable range for PA-P ($\alpha =0.556$, $r = 0.29$) and DP-W ($\alpha = 0.413$, $r = 0.21$) components. DP-P did not present sufficient reliability and internal consistency ($\alpha = 0.131$, $r = 0.07$).

Exploratory Analyses

83.3% (95% CI 81.7% to 84.8%) of responders had positive feelings about their work, but only 42.7% (95% CI 40.6% to 44.7%) of them felt engaged with patients during a week. While a small percentage of 2.5% (95% CI 1.8% to 3%) of responders presented worries of personal hardening due to work, 11.5% (95% CI 10.1% to 12.8%) declared to feel disengaged with patients at least once a week.

Discussion

Summary of the Main Results

Among responders, less than one-third appeared engaged in their work. However, the remaining part presented some form of Burnout, particularly a disengagement-profile, whit a little 1.7% suffering of severe Burnout. The three dimensions of the *Maslach Burnout Inventory* were partially replicated, but it presented higher reliability in a final five-component loading. The Emotional Exhaustion scale loaded in an independent component. The Personal Accomplishment factor resulted in five items concerning positive feelings about

the work and three items about empathy with patients, which resulted in low-scores in 60% of responders. The Depersonalisation clustered in three items expressing hardening due to work, and two items about disengagement with patients. This last dimension appeared not reliable, but these two items registered 11.5% of high-frequency answers.

Interpretation of the Results

This sample was mainly constituted by males, in the middle age of 44 years, and with a mean of 12 years of career, in line with the sample analyzed by Argentero and Setti.[9]

Some authors have recently shown differences in percentages of Burnout detectable in emergency in-training doctors, by applying a broad (80.9%) or a strict (18.2%) definition of Burnout,[29] as it was the case in our study. According to cut-off at the three factors, 1.7% only of the sample stayed in the classical and severe definition of Burnout, in line with Angius.[10] The most in-depth look to latent burnout profiles[3] revealed that more than two-thirds of the responders were struggling with some burnout patterns, similarly to percentages revealed on emergency-nurses in an Italian sample[30] and the meta-analysis by Gómez-Urquiza and colleagues.[5] The latent burnout profile emerged was mostly disengagement, that was indicated as the minimum early phase of Burnout,[31] the most negative dimension among the burnout continuum and a more distinctive and central aspect of Burnout than Emotional Exhaustion alone, according to Leither and Maslach.[3] A negative perception of the teamwork was suggested as a variable highly associated to a disengaged and cynic burnout profile in nurses,[25] as it was probably the case in this sample. During the psychological training, people referred highly conflictual relationship with nurses and physicians when working together, which they attributed to the low consideration of their work-experience from their colleagues; this is probably a consequence of the lack of a professional profile for this group of operators.

Additionally, 12% of the sample refers to a negative work experience of inefficacy,

which could predict a future disengagement.[3] The role of young age in a better engagement confirms previous studies.[32,33] The recodification of districts according to mean workload, and with sickness absence, did not influence the subjects' classification in different burnout profiles, differently from the previous researches.[25,27,34]

However, there were not have specific data for each subject, so these modifiers had a different significance in this research than in previous studies.

There was a partial replication of the three dimensions of the MBI-HSS; the EE component was a more reliable subscale, compared with DP and PA, as in the previous literature.[14,19]

However, the answers of this specific sample provided a better fit of the test by clustering in two sub-components for the PA and the DP factors, as compared to the original subscales.

The DP factor was particularly unreliable (see also Sirigatti and Stefanile[14]), and it could have suffered from translation and wording issues or defensive responses which driven to inconsistent answers, as already suggested in previous researches.[16,17,35]

The analysis proposed a little increase of reliability if item 22 was deleted (see also Squires and colleagues[17]), but this not raised reliability to the level of acceptability. Patient-care stress is a primary source of daily stress for EMT workers.[36] However, an extensive survey that included EMTs American workers found a lower patient-related burnout in these subjects than in other EMS profession (5% vs. 14.4%).[34] The DP-P component was analogously detected in a previous study by Chao and collaborators [35] as a form of indifference for patients, in a sample of American workers in a care-staff of people with intellectual disability. Analogously to what measured in this latter study, a two-item solution is not likely to be reliable in itself and did not reach acceptable reliability in this sample. However, according to exploratory analysis, these two items were highly responsible for the

elevation at the DP subscale, i.e., a higher percentage of responders felt more disengaged with patients, than presenting worries of personal hardening due to work. The PA-W component was very similar to the *self-competence* component, identified by Gil-Monte in a Spanish sample of different professional roles[37] and, according to exploratory analyses, the majority of our sample scored high these items, while subjects suffering from low PA, presented a scarce engagement with patients (i.e., low PA-P scores). Thus, these particular components' loading could alternatively suggest a specific difficult for driver-rescuers in interacting with patients.

An explicit focus on the emotional-regulation and empathy-skills in emergency physicians has been proposed, given its close influence on patients' satisfaction[38,39] and burnout prevention,[40] and this solution is probably highly auspicial also for the non-medical part of an emergency-staff, during their first preparation and on-the-job training.

In summary, these results endorse the importance of screening and psychological interventions for this population of emergency workers, where Burnout could manifest itself more insidiously. It is also possible to speculate that sub-optimal empathy-skills could be related to the disengagement and inefficacy feelings registered. Future research in this population could be focused on self-awareness of emotions rather than on broad burnout measurements and, consequently, specific psychological training should be predisposed to ensure better work experience and satisfaction.

Limitations

The group-administration could have biased some results; however, the district in which the information was collected did not influence the presence of different burnout profiles. The self-selection sampling strategy did not allow to collect data on gender and age for refusers that, in retrospect, should have been included; however, these responders' characteristics were

representative of the whole population, as compared with data from SEUS *118-service* human-resources office. The survey did not include the collection of variables which could have predicted different levels of Burnout, such as sleep habits[41,42] and coping strategies[43], or psychiatric disorders and personality characteristics[6,44,45]. Additionally, there was not the opportunity to collect their exposure to traumatic work experiences, such as critic incidents, disasters or patients' death, which could have increased their stress levels[46,47] and risk of Burnout.[34,48]

To ensure anonymity, it was not possible to differentiate between single levels of leadership and responsibility (for example, in the specialization in the use of defibrillator) achieved by different driver-rescuers, since this could have affected stress-levels. Nonetheless, this was a descriptive cross-sectional design, which did not include hypotheses on putative risk factors for the disease but only some correlational post hoc explorative analyses.

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Table 1. Comparisons between the responders *118-service* operators and the Italian normative sample in Maslach Burnout Inventory factor scores.

	N	118 operators Mean (SD)	N	Normative sample Mean (SD)	Mean differences[a]	95% C.I.	p-value
EE	2·254	9.34 (8.95)	748	20.18 (11.29)	-10.8	-11.6, -10.1	<0.001
PA	2·242	34.63 (7.72)	748	32.52 (8.66)	2.1	1.4, 2.7	<0.001
DP	2·281	7.65 (4.78)	748	7.03 (5.90)	0.6	0.2, 1.0	0.009

[a]Hartley-Test for equal variance <0.001.
Legend: EE: Emotional Exhaustion; DP: Depersonalization; PA: Personal Accomplishment; SD: standard deviation; N: number; df: degree of freedom; Normative sample from Sirigatti and Stefanile (1993).

Table 2. Medium scores at EE, DP, PA factors from MBI

	Low N (%)	Medium N (%)	High N (%)	Missing N (%)	Valid N (%)	Total
EE	1·733 (73.4)	338 (14.3)	183 (7.8)	107 (4.5)	2·254 (95.4)	2·361
DP	432 (18.3)	999 (42.3)	849 (36.0)	81 (3.4)	2·280 (96.4)	2·361
PA	974 (41.3)	786 (33.3)	482 (20.4)	119 (5.0)	2·242 (94.9)	2·361

Legend: EE: Emotional Exhaustion; DP: Depersonalization; PA: Personal Accomplishment; N: number; Normative sample from Sirigatti and Stefanile (1993).

Table 3 Rotated Component Matrix[a] for PCA

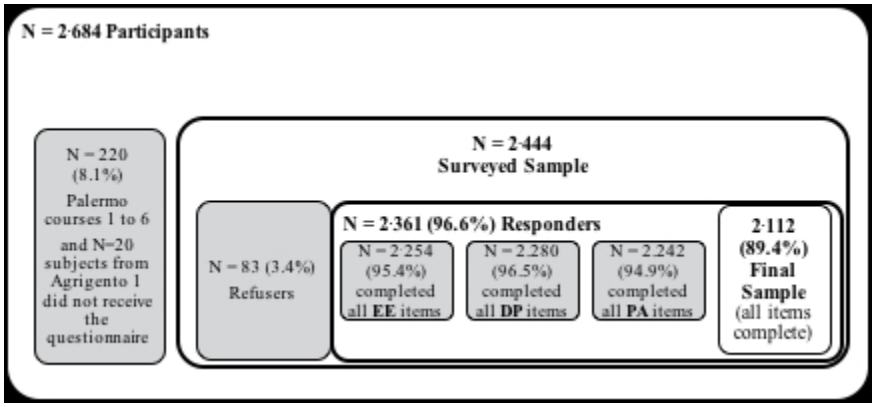
	Components				
	1	2	3	4	5
Factor 1= Emotive Exhaustion (EE) ITEM 1 "I feel emotionally drained from my work"	.722				
ITEM 8 "I feel burned out from my work"	.715				
ITEM 14 "I feel I'm working too hard on my job"	.710				
ITEM 18 "Working with people directly puts too much stress on me"	.668				

ITEM 13 “I feel frustrated by my job”	.625				
ITEM 6 “Working with people all day is really a strain for me”	.592				
ITEM 3 “I feel fatigued when I get up in the morning and have to face another day on the job”	.584				
ITEM 2 “I feel used up at the end of the workday”	.492				
ITEM 20 “I feel like I’m at the end of my rope”	.454				
Factor 2= Positive Feelings about the work (PA-W) ITEM 17 “I can easily create a relaxed atmosphere with my patients”		.735			
ITEM 21 “In my work, I deal with emotional problems very calmly”		.725			
ITEM 7 “I deal very effectively with the problems of my patients”		.685			
ITEM 12 “I feel very energetic”		.583			
ITEM 19 “ I have accomplished many worthwhile things in this job”		.435			
Factor 3= Engagement with patients (PA-P) ITEM 4 “I can easily understand how my patients’ feel about things”			.819		
ITEM 16 “I feel exhilarated after working closely with my patients”			.803		
ITEM 9 “I feel I am positively influenced by other people’s lives through my work”			.430		-.402
Factor 4= Worries of personal hardening due to work (DP-W) ITEM 10 “I have become more callous toward people since I took this job”				.766	
ITEM 5 “I feel I treat some patients as if they were impersonal ‘objects’”				.516	
ITEM 11 “I worry that this job is gardening me emotionally”	.421			.471	
Factor 5= Disengagement with patients (DP-P) ITEM 15 “I don’t really care what happens to some patients”					.785
ITEM 22 “I feel patients blame me for some of their problems”					.430
Chronbach’s Alpha	.825	.678	.556	.413	.131
Average Inter-item correlation	.34	.30	.29	.21	.07
[a]Rotation converged in 6 iterations. Legend: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Suppression of values <.4.					

Figure 1. Flow-Chart of Subjects Included in the Analysis

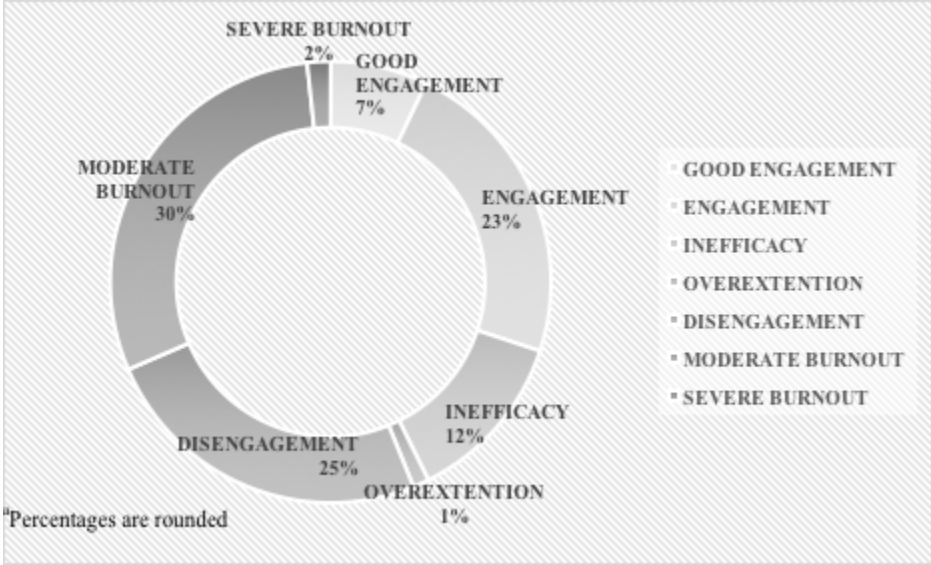
Figure 2. Subjects’ Classification[a] According to their Burnout Profiles

Figure 3. Scree Plot of the eigenvalues for components’ retention in PCA



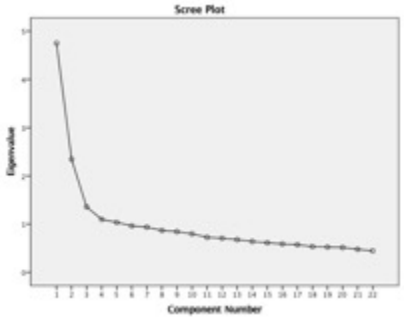
Flow-Chart of Subjects Included in the Analysis

153x70mm (72 x 72 DPI)



Subjects' Classification According to their Burnout Profiles

164x99mm (72 x 72 DPI)



Scree Plot of the eigenvalues for components' retention in PCA

71x57mm (72 x 72 DPI)