Giovani e bruciati? Studio Internazionale sulla Sindrome del Burnout negli specializzandi in psichiatria, i dati italiani /

Young and burned? Italian contribution to the international BurnOut Syndrome Study (BOSS) among residents in psychiatry

Silvia Ferrari[1], Giulia Cuoghi[1], Giorgio Mattei[1], Elena Carra[1], Umberto Volpe[2], Nikolina Jovanovic[3], Julian Beezhold[4,5], Marco Rigatelli[1], Gian Maria Galeazzi[1], Luca Pingani[6]

[1] Department of Diagnostic-Clinical Medicine and Public Health, University of Modena & Reggio Emilia, Modena, Italy

[2] Department of Psychiatry, University of Naples SUN, Naples, Italy

[3] Department of Psychiatry, Zagreb University Hospital Centre and School of Medicine, Zagreb, Croatia

[4] Central Cluster Acute Service, Norfolk and Waveney Mental Health NHS Foundation Trust, Norwich, UK

[5] University of East Anglia, Norwich, UK

[6] Human Resources, Azienda USL Reggio Emilia, Reggio Emilia, Italy

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Corresponding author: Dr. Silvia Ferrari, Clinica Psichiatrica, Policlinico di Modena, Via del Pozzo 71, 41124 Modena – Tel. 059 4224305 – Fax 059 4224439 – email

silvia.ferrari@unimore.it

Summary

Background The Burnout syndrome (BS) is a common condition among health care professionals, yet data concerning its prevalence and associated factors among psychiatric residents are lacking.

Objectives To report the results of the Italian contribution to "BoSS", an international multicentre research project aiming at estimating the burden of BS among residents in psychiatry, and at identifying factors contributing to its development and prevention.

Methods: Cross-sectional study. The BoSS online questionnaire collected socio-demographic data and five validated psychometric instruments (MBI-GS, AWLS, PHQ-9, SIBQ, BFI), administered electronically to 180 Italian residents in psychiatry. Linear and multiple regressions were performed to analyze data.

Results: 108 questionnaire provided data for the study (*response rate*: 60%). Mean age: 30.5 ± 3.7 years. Eighty percent of the sample were female. A moderate level of BS emerged, related to work conditions, absence of major depression, satisfaction with pay or less academic activity. Only 1% (N=1) of the sample showed PHQ-9 scores suggestive for major depression, while lifetime suicidal ideation was admitted by 16% of residents. On the three dimensions of the MBI-GS, Italian sample scores were consistent with previously published results concerning pooled data in a French-Croatian sample, reporting moderate levels of BS. Higher workload, symptoms of depression and lower satisfaction predicted higher level of Emotional Exhaustion and Cynicism.

Conclusions: Italian residents in psychiatry showed overall moderate levels of BS, related to workload and working organization. Other alerts of psychic distress were found among

participants, namely symptoms of depression, suicidal ideation and use of psychotropic medications.

Riassunto

Introduzione La Sindrome del Burnout (BS) è molto diffusa tra gli operatori sanitari, tuttavia scarseggiano dati riguardanti la prevalenza tra gli specializzandi in psichiatria.

Obiettivi Comunicare i risultati del contributo italiano al BoSS (Burnout Syndrome Study), studio internazionale multicentrico per determinare il livello di BS tra gli specializzandi in psichiatria, identificando fattori in grado di influenzarne sviluppo e prevenzione.

Metodi Studio trasversale. Il questionario BoSS online, costituito da dati sociodemografici, e da cinque strumenti psicometrici (MBI-GS, AWLS, PHQ-9, SIBQ, BFI) è stato inviato a 180 specializzandi in psichiatria italiani, utilizzando Surveymonkey. Analisi statistica effettuata mediante regressioni lineari semplici e multiple (SPSS 17.0).

Risultati 108 questionari sono stati correttamente compilati (*response rate*: 60%). Età media: 30.5 ± 3.7 anni. Donne: 80% del campione. Un livello basso di BS è emerso, associato alle condizioni di lavoro e a: presenza di sintomi depressivi, soddisfazione per lo stipendio, minor numero di pubblicazioni scientifiche. Solo l'1% del campione (N=1) presentava score al PHQ9 significativi per depressione maggiore, mentre nel SIBQ il 16% ammetteva di aver pensato al suicidio. Complessivamente è emerso un livello di BS "moderato", analogo a quanto precedentemente riportato in un campione franco-croato. Alto carico di lavoro, sintomi depressivi e insoddisfazione predicevano alti Esaurimento Emotivo e Depersonalizzazione.

Conclusioni Gli specializzandi intervistati mostravano un livello generalmente basso di BS, correlato al carico e all'organizzazione del lavoro, anche se altri segni di distress psicologico sono emersi, in particolare sintomi depressivi, ideazione suicidaria e uso di psicofarmacoterapie.

INTRODUCTION

"Burnout" means literally "to burn till exhaustion", due to running out of resources. The term has been used since the very beginning of the 20th Century, in different fields such as sport (36), literature (25), and medicine, including psychiatry (15). In 1976 Cristina Maslach was the first to introduce the term in its current clinical conceptualization, to describe a growing situation of working stress, typically reported by nurses or physicians, related to the organization of work and ultimately leading to a psychiatric syndrome, the "Burnout Syndrome" (BS) (31). Three dimensions of BS were described: Emotional Exhaustion (EE), the feeling of progressive loss of energy with emotional lability; Depersonalization, or Cynicism (C), a coldness and feeling of detachment from others, who end up being perceived as objects; and reduced Professional Efficacy (PE), the perception of individual inadequacy and reduced self-confidence in the work place. The Maslach Burnout Inventory (MBI, 29) was specifically developed to measure the three dimensions of BS. BS was not included as such in the DSM (1), but it is mentioned in the ICD-10 (50) among factors that influence individual wellbeing (Z73.0). BS is the end point of a three-step-process (10, 32): the first step is an imbalance between available resources and demands, leading to the development of a short-term stress response (second step), with exhaustion, fatigability, and anxiety. Finally, changes in the individual behavioural pattern occur. Both individual factors connected to personality (8) and relational, organizational and socio-cultural factors (47, 9) contribute to this process

The typical clinical presentation of BS includes both physical and psychological symptoms (headache, dizziness, fatigue, reduced self-esteem, apathy, anhedonia, anxiety). In the later stage, it may turn into a depressive disorder, though with differences in psychopathology (i.e. self-accusing and self-blaming are generally not present). Co-morbidity with other psychiatric conditions is common, e.g. alcohol-substance abuse and self-harm behaviours in the most severe cases (41).

Symptoms of, or full-blown BS, are common among medical doctors (EE: 46%-80%; C: 22%-93%; PE: 16%-79%; 11) and health professionals of all specialties; significant levels of BS (EE and C dimensions especially) were reported (7) among physicians and nurses working in oncology. A study involving Italian nurses reported clinically-significant mean scores in the MBI (38); among psychiatrists, a prevalence of BS of 37.6% was found, with EE: 49%; C: 39%; PE: 22% (4, 21).

BS seems to be even more common and/or severe among residents and early career physicians (11, 39). The reasons for increased susceptibility to BS among young doctors may be several: increased exposure to a contrast between higher ideals and the working reality (15); for residents, the ambiguity of professional role, half-way between students and professionals; for newly-specialized physicians, the abrupt passage from being a student to work unprotected in the "real world", and in clinical settings very different to traditional teaching hospitals; limited or no involvement in work-systems and decision processes; the risk of professional isolation; work over-load.

Consequently, residents in psychiatry and early career psychiatrists may be at even higher risk of developing BS, since they experience all these risk factors (18). Only a few studies

have been performed, nevertheless, to test this hypothesis: Prins et coll examined levels of burnout in 158 medical residents working at the University Medical Center Groningen, the Netherlands, 13% had symptoms of BS, and they were mostly residents in Psychiatry (39). Italian residents in psychiatry showed high levels of EE and C, though with low levels of PE (49).

The "Burn-Out Syndrome Study" (BOSS) was therefore conceived, by a network of researchers involved in the European Federation of Psychiatric Trainees (EFPT) and the Early Career Psychiatrists project of the European Psychiatric Association, as an international multi-centric study coordinated by two of the authors (NJ and JB) (19). University post-graduate schools of specialization in psychiatry of the following 21 international countries were involved: Austria, Bosnia, Bulgaria, Czech Republic, Croatia, Denmark, Egypt, France, Germany, Greece, Hungary, Italy, Iran, Latvia, Netherlands, Romania, Russia, Slovenia, Turkey, UK, USA. No control group was included in the research protocol, since comparison was between the different national experiences.

France and Croatia were the first two nations to complete the study, and their contribution to the BOSS has already been published (19). The aim of the present study is to present the results of the Italian contribution to BOSS.

METHODS

Italy took part in BOSS, with two of the authors as national coordinators (SF and UV). The original English research questionnaire was translated into Italian by the researchers, with a standardized procedure and under supervision of the international coordinators. The

Italian versions of five psychometric tools were included in the electronic questionnaire. The study was approved by the Modena Ethical Committee in February 2009. Written informed consent was provided by participants (included as a first gate-keeping question in the electronic questionnaire), and guidelines governing research from the Declaration of Helsinki were respected.

Subjects

The Italian BOSS started in 2009; on that year, 774 residents in psychiatry were attending the 32 post-graduate psychiatry specialization schools over the national territory (source: website of the Italian Ministry of University and Research). Residents were contacted informally (mailing lists, network of early career psychiatrists of the Italian Psychiatry Society, at meetings and scientific events), in order to preserve spontaneity and motivation to respond. Residents representing 11 of the 32 schools were involved (34.4%). The only inclusion criterion was "being resident at an Italian psychiatric post-graduate school". No exclusion criteria were defined in the research protocol.

Residents interested in participating in the study provided their e-mail address to the national coordinators, who forwarded them to the international coordinators. The latter sent an invitation e-mail, including a description of the study and the link to the on-line questionnaire with integrated request of consent. The Surveymonkey software was used to develop the on-line questionnaire and collect results automatically and anonymously into the study database using industry standard encryption technology. Two reminders were sent to non-responders at fortnightly intervals following the initial invitation

Measurements

Participants were administered an 138-item questionnaire, including closed, multiple-choice and open questions, and structured into 10 sections, each covering a specific topic; 5 of the sections comprised standardized psychometric instruments, permission to use was obtained from the authors of the original versions. The structure of the questionnaire is detailed in table 1.

[Display Table 1 about here]

Statistical analysis

Descriptive statistical analysis was calculated, using means and standard deviations for continuous variables, and proportions for binary variables. A regression analysis was then performed for inferential statistics, with the three scores at the MBI-GS as dependent variables. Regressors were represented by all other collected data, namely socio-demographic features (used for adjustment) and scores in the AWLS, PHQ-9, SIBQ, BFI-10. First, simple linear regressions were performed to detect associations between individual co-variables and response variables. Subsequently, all co-variables were included in multiple linear regression models. All regressions were adjusted for socio-demographic factors. A level of statistical significance of $2p<0.05$ was adopted. SPSS (version 17.0) was used for all analyses.

RESULTS

One hundred and eighty Italian residents in psychiatry were invited to participate, 23% of total residents in psychiatry in Italy in the considered year; of these, 124 (69%) accessed the online questionnaire, and 108 (60% of the total sample, 87% of those accessing the questionnaire) completed the survey.

Descriptive analysis

Socio-demographics, training, work conditions

Table 2 displays results to sections P2-4 and P10 of the questionnaire.

[Display Table 2 about here]

Scores at psychometric scales

Table 3 displays scores at the five psychometric instruments included in the survey.

[Display Table 3 about here]

MBI-GS scores show moderate levels of BS on the three subscales: EE (2.5 ± 1.3), C (1.5 ± 1.3) and PE (4.6 ± 0.62). Figure 1 reports the proportion of subjects for each subscale who obtained scores indicative of mild, moderate or severe BS, compared with normative values (29).

[Display Figure 1 about here]

Regression analysis

Results reaching statistical significance at simple linear regressions are displayed in Table 4. An increase in the C score was associated with an increase in the EE score. As expected, an increase in the PE score was associated in a decrease in C. As far as the individual components of the AWLS are concerned, the following associations emerged: a decrease in EE was predicted by an increase in the scores of Workload, Control, Reward, Working group and Fairness; in the same way, a decrease in C was predicted by an increase in Workload, Reward and Working group. Finally, a decrease in PE was predicted by an increase in Control and Reward. As far as the scores on the PHQ-9 are concerned, an increase predicted a higher EE score, and, differently, a decrease in C. Scientific production was significantly associated only with PE. An increase in the number of papers published was associated with a lower perceived PE. An increase in perceived wage adequacy was associated with an increased in the reported score of EE.

[Display Table 4 about here]

Results from the multiple linear regression analysis for the three dimensions of BS are depicted in Table 5.

[Display Table 5 about here]

EE was predicted negatively by the score in AWLS-workload: an increase in the AWLS-workload score, suggesting good consistency between one's expectations and the working place objective conditions, predicts lower levels of BS.

A significant association was also found between C and both number of weekly working hours and reward. In particular: the higher the number of weekly working hours, the lower the C score; and, the higher the AWLS-reward, the lower the C score, suggesting a lower the level of BS.

PE was found to be positively predicted by the AWLS-reward and negatively by the AWLS-fairness. In other words, the higher reward, the higher PE, indicating lower levels of BS. Contrastingly, fairness was found to negatively predict PE. In other words, the higher the levels of fairness, the lower the levels of PE, indicating higher BS.

DISCUSSION

The present study aimed at estimating the level of BS in a sample of Italian residents in psychiatry, and at detecting possible predictors of its development, related to training, lifestyle, working conditions and psychopathology. It also aimed at compensating for the lack of research on this subject, specifically in Italian populations (5).

A high response rate (60%) was observed: this may be related to the strategy of enrollment, via "informal" channels such as e-mailing lists and meetings and seminars, as well as to the on-line electronic structure of the survey, favoring quick and easy reply (33). The response rate for the Italian survey was higher than the Croatian and French studies (54% and 42.6% respectively; 19).

The socio-demographic features of the sample were similar to those observed by other authors, referring to a population that is homogeneous by definition, particularly as to age: in Italy, the mean age at which residents enter specialization school is 28 years, about two

years after the mean age of graduation in Medicine and Surgery (2). The majority of respondents were female: this is consistent with the well-known process of "feminization" of medicine, and psychiatry particularly (12). The socio-demographic features of the Italian sample were similar to those observed among French and Croatian participants, though mean age and percentage of women were higher among Italians. Interestingly, no significant association were found between level of BS and socio-demographic variables, namely age and gender. This differed from previously published research (23), that showed a higher prevalence of BS among male health care professionals (both physicians and non-physicians).

More than half of participants were in the first year of residency and up to 70% in the first and second years. Unfortunately, the initial distribution in the four years of specialty of residents invited to take part in the survey was not available, making it impossible to understand whether the year of attendance influenced the response rate.

Almost all trainees confirmed that psychiatry was their first career choice as a medical career, and this decision was taken rather early during the study course. Even when psychiatry was not reported as first choice, the residents' first choice was always in the field of neurosciences. These data suggest that attention should be focused on reasons and motivations leading to career choice, as these could provide hints to improve training under-graduate activities (14, 16). A change may also be expected in the near future, as a consequence of a massive revision of the exam procedure to access schools of medical specialization that took place in Italy in 2014. The psychiatric subject attracting the highest interest was adult clinical psychiatry; the second was psychotherapy: consistently, up to

40% of the residents were attending or had attended a school of psychotherapy during, and as training integration to, the school of specialization: this practice is common among Italian residents in psychiatry (2).

When considering working patterns, responses of Italian residents in psychiatry seemed consistent with indications from trade unions, about respecting adequate pauses, regular resting periods, holidays and the average 38-hour weekly timetable. They should be compared with issues raised by the changes in structure of medical training carried out in other countries, especially in the field of surgery (3, 17). Italian data reflect the varied organization of different schools over the national territory: the range of duties and activities is sufficiently wide and support from tutors and supervisors is available and helpful, as it is felt it should be from previous surveys (2). Italian residents also take sufficient vacation leave from work, though they do not usually go for long holidays. If compared to their French and Croatian colleagues, they work for slightly less average hours per week, are less involved in research activities and a smaller number of them are attending out-of-school psychotherapy. Very few reported involvement in claims, disciplinary actions, bullying from tutors/supervisors and stalking. Psychotropic medication use appeared to be rather popular among Italian residents, with 14% of them admitting regular use and 50% of them self-prescription.

Italian residents reported, on the whole, moderate levels of BS on the three dimensions measured by the MBI-GS. Interestingly, 60% of respondents admitted moderate to high levels of BS on the PE dimension. This is not consistent with previous findings in Italian early career psychiatrists, who scored higher on EE and C but lower on PE (49), yet it is

substantially consistent with the French-Croatian sample (19): in that sample, mean scores were: 2.28 (± 1.37) on the EE dimension, 1.59 (± 1.15) on the C dimension, 4.13 (± 1.18) on the PE dimension, indicating moderate BS. Consequently, on the three dimensions of the MBI-GS, the Italian sample scores were consistent with the pooled data from French-Croatian residents, indicating moderate levels of BS. Yet, by comparing the Italian, French and Croatian samples individually (19) some noticeable differences emerged. In particular, the Croatian sample presented higher levels of PE, indicating lower BS, while the French sample scored lower on the same dimension, indicating higher levels of BS. The Italian sample situates itself somehow in the middle. As far as C is concerned, the Italian and Croatian sample showed the same results (consistent with moderate BS), while French trainees reported a lower score, indicating lower BS. National, general differences, together with specific differences featuring training in psychiatry may explain such discrepancies.

Martini and colleagues (26) reported that higher levels of BS were noticeable in the first years of specialty, with a decreasing trend in the following years, yet these findings were not replicated in the present research: this may also be due to the great predominance of first- and second-year residents in our sample.

There is no consensus yet about the cut-off that should indicate the presence of BS, measured with the MBI-GS, which should be conceptualized as only prodromal to a full-blown psychiatric disturbance (5). In particular, the use and the validity of the subscale PE is still debated (44).

In their work experience as measured by the AWLS, workload was perceived as lower than both normative values and results in the French-Croatian sample, whereas, for all the other subscales, less satisfaction than average and than among French-Croatian residents was reported.

Very few cases of clinically significant PHQ-9 scores were collected, though a large number of respondents (102 residents; the 94% of the sample) reported at least some symptoms of depression.

The long-debated choice to include the SIBQ among the psychometric tools of the study seemed to have paid off when considering results: life-time suicidal ideation was admitted by 16% of the sample and 10% reported a family history of suicide. These findings, combined with reports on depressive symptoms and psychotropic drug use, contribute to the idea that in some cases a career choice in psychiatry may have a self-therapy valence, but may also be a trigger for further psychological difficulties, especially if not adequately addressed.

When studying personality traits via the BFI-10, Italian residents in psychiatry had higher levels of conscientiousness and extroversion, a finding slightly contrasting with previous research on psychiatrists: they seemed to rate higher in hopelessness and lower in conscientiousness (20).

The results of the simple linear regression analysis (Table 5) confirmed the strong reciprocal correlation existing between all three dimensions of BS: C showed a relevant association with EE (Beta = 5.02, p = .00), and PE showed a relevant association with C (Beta = -4.64, p = .00). Moreover, previous findings (19, 24, 32, 42, 39, 48) on the close

connection between the onset of BS and objective and subjective working conditions were confirmed. These include perception of an excessive workload, limited resources and feeling of impotence in the management of work (20, 40). In particular, AWLS-reward was negatively associated with all three BS dimensions, AWLS-workload and working group with EE and C, AWLS-control with EE and PE, and AWLS-fairness with EE only. These findings, somehow contrasting, were later better specified in the multiple regressive analysis discussed below.

An association between MBI-GS and PHQ-9 scores was also expected, given the potential prodromal meaning of BS towards clinical depression. Among Italian residents, more symptoms of depression (higher PHQ-9 scores) were associated with higher levels of EE (Beta = 8.41, p = .00), but, rather contrastingly, with lower levels of C (Beta = -4.00, p = .00). This finding may support the idea that BS and depression share some psychopathological features, but do not completely overlap. For example, it was recently pointed out that late-stage BS, though overlapping with a clinical picture consistent with a Major Depressive Disorder, is rarely characterized by self-blaming, in other words showing different psychopathological impairments where ideation is concerned (5).

Previous research (13) and the Croatian-French BOSS results (19) found a noticeable correlation between PE and residents' being active academically, optimistically suggesting that cultivating research and scientific interests may protect against BS. This was not entirely the case among Italian residents: the linear regression analysis produced an inverted association between academic productivity (number of published papers) and decreased PE (higher levels of BS), (Beta = -2.81, p = .01). Yet, this association was not

confirmed by the multiple linear regression. Similarly, the association between perception of wage adequacy and BS was unexpected, with EE increasing as opinions on pay were positive (Beta = 2.21, p = .03).

Only few of the previously reported associations were still significant in the multiple regression model (Table 6): EE was negatively predicted by AWLS-workload (Beta -0.90, p = .01); C by mean number of working hours (Beta = -0.04, p = .02) and reward (Beta = -0.34, p = .02); PE was positively predicted by reward (Beta = 1.47, p = .04), and negatively by fairness (Beta = -2.00, p = .02).

Some of these unexpected and controversial results may be explained by features specific of the Italian culture of work and work system: i.e., being accustomed to lack of flexibility and lack of meritocracy could lead residents to disregard reward, motivation and, especially, equity, and vice versa believing that "the more hours you work, the better doctor you are". The fact that the sample was largely made up of young residents in their first years of specialty may have played a role, given the enthusiastic, sometimes idealistic approach of young physicians in their very first years of profession.

The choice of reporting and discussing both simple and multiple linear regression results in the present paper is partly due to the nature of the BS itself, that suggests the importance of considering it as a whole construct (a syndrome), on the one hand, and of splitting it and studying its three dimensions of EE, C and PE independently, on the other hand, given that the diagnosis of such a condition does not require pre-determined cut-offs at the same time on the three sub-scales. In other words, the BS challenges research and methodology, because of its intrinsic dimensional nature.

The present study has some limitations. Firstly, the impact of a recruitment bias should be considered, due to the informal, non-systematic method of invitation, which may exclude involvement of those people mostly affected by BS. Nevertheless, this recruitment method had the positive effects of 1) increasing motivation, witnessed by a higher response rate (60%) than in the French-Croatian study; 2) reducing fear of results being somehow "controlled" or imposed to answer by superiors. Both these effects certainly contribute to a higher reliability of the present results. Secondly, the sample size (N=108) was not large enough to guarantee high statistical validity for associations. This limitation, nevertheless, will be completely overcome when pooled data from the multicentric study will be analyzed. Finally, and more generally, criticism on the appropriateness of measuring BS through a self-administered instrument has been previously raised (5), since possibly those most affected by BS are those less aware of it, potentially leading to underestimation of BS rates: nevertheless, the MBI still is the best approximation available, combining feasibility (reaching larger samples of respondents) and accurate, validated measurement of BS.

To conclude, Italian residents in psychiatry showed overall moderate levels of BS, closely related to the work-load and the working organization, even though other signals of psychic distress were found among the category, namely symptoms of depression, suicidal ideation and use of psychotropic medications.
BS affects massively quality of life of workers and on their professional effectiveness, making it very relevant to recognize early determinants of onset and to correct them promptly, when possible. This is especially true when dealing with residents and early

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career medical doctors, bearing in mind their increased vulnerability but also their higher resilience than more experienced colleagues.

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Table 1: Structure of the *BOSS* questionnaire / Struttura del questionario BOSS.

Sections	Content
P1	Invitation and consensus to participation
P2	Socio-demographics (7 items)
P3	Pre- and post-graduate training experiences, including reasons for choosing psychiatry and list of psychiatric topics of best interest (11 items)
P4	Description of working conditions (working and leisure hours, satisfaction with salary…), experiences of mobbing or stalking, medical and psychiatric health, including medications (32 items)
P5	Maslach Burnout Inventory General Survey (MBI-GS) – this self-administered 16-item questionnaire is rated on a seven-point (0-6) Likert scale; a validated Italian version is available (47).
P6	Areas of Worklife Survey (AWLS) – self-rating 29-item questionnaire, with ratings ranging from 1 (strongly disagree) to 5 (strongly agree), expressing perception of congruence or incongruence of respondents on statements covering six areas of worklife: workload (6), control (3), re-ward (4), community (5), fairness (6), and values (5) (22). This is widely used in conjunction with the MBI. No validated Italian version was available, and a supervised translation was developed by the authors.
P7	Patient Health Questionnaire 9 (PHQ-9) – a 9-item, self-administered, commonly used instrument to screen for depression in clinical practice, based on the DSM-IV diagnostic criteria for depression, whose validity and reliability have been

	thoroughly confirmed, also in the Italian language (35).
P8	Suicide Ideation and Behaviour Questionnaire (SIBQ) – a 14-item questionnaire evaluating the different stages of suicidal behaviour, from negative thoughts to active attempts (27). No validated Italian version was available, and a supervised translation was developed by the authors.
P9	Big-Five Inventory-10 (BFI-10) – a 10-item self-rated questionnaire developed to study personality, in its 5 main traits of: Conscientiousness, Openness to experience, Extraversion, Agreeableness and Neuroticism. The Italian version used for the survey was validated by Caprara and colleagues (6).
P10	Description of activities outside work.

Table 2: Socio-demographics, training, work conditions of the sample / caratteri socio-demografici, formazione e condizioni di lavoro del campione.

Section	Respondents N = 108	
P2	*Mean*	*SD*
Age	30.5	3.7
	N	*%*
Sex (M/F)	12/86	20.0/80.0
In a stable relationship	64	59.3
Married	10	9.3
Single	34	31.1
No children	99	91.7
One child	8	7.4
2 children	1	0.9
Living in a rented house	55	50.9
Living in own house or property	20	18.5
P3		

1st year of residency	51	47.0
2nd year	20	22.0
3rd year	33	31.0
4th year	4	2.0
Career choice in psychiatry:		
Before entering medical school	44	41.0
After graduation	12	11.0
During university years	52	48.0
Psychiatry first career choice	94	87.0
Neurology first career choice	4	3.7
Post graduate training experiences:		
School of Psychotherapy	40	37.0
PhD	6	5.6
Master's Degree	5	4.6
Individual Psychoanalysis	3	2.7

	Mean	SD
Speaks at least one foreign language	66	61.0
Mean scientific activity:	*Mean*	*SD*
Papers	1.4	2.02
Posters	2.9	3.7
Oral presentations	0.3	0.8
P4	*Mean*	*SD*
Mean weekly working hours	44	8.4
Academic activities	28.4	0.2
Clinical duties	8.7	5.5
Other tasks (e.g. clinical research)	5.4	7.9
Individual psychotherapy with tutor/supervisor	2.0	2.2
Clinical activity with tutor/supervisor	1.5	3.0
Other non mandatory activities (e.g. study, research meetings and symposia, courses)	3.2	4.5
Mean daily working hours	1.7	4.1

	N	%
Not involved in formal disciplinary action for professional reasons	96	88.0
Not involved in legal actions for professional reasons	107	99.1
P10	**N**	**%**
Currently taking medications:	19	18
Antidepressants	5	4.63
Analgesics	2	1.85
Sedatives	4	3.7
Hypnotics	2	1.85
	Mean	**SD**
Mean weekly hours of leisure activities	16.0	10.9

Table 3: Scores in psychometric scales / punteggi alle scale psicometriche.

Psychometric instrument	Mean	SD
MBI-GS		
EE	2.5	1.3
C	1.5	1.3
PE	4.6	0.62
AWLS		
Workload	2.91	0.73
Control	2.76	0.87
Reward	3.25	0.89
Working group	3.02	0.95
Fairness	2.44	0.77
Values	3.01	0.60
PHQ-9	3.76	3.55
	N	*%*
PHQ-9 clinical cut-off		
No/mild symptoms	102	94
Moderate symptoms	5	4

	Severe symptoms	1	1
SIBQ			
	No suicidal ideation	82	76
	Passive suicidal ideation	26	24
	Active suicidal ideation	17	16
		Mean	*SD*
BFI-10			
	Extraversion	5.9	1.7
	Agreeableness	5.6	2.0
	Coscientiousness	6.3	1.5
	Neuroticism	5.3	1.9
	Openess to experience	6.0	1.8

Table 4: Results from simple linear regression analysis (only significant results are included) / risultato dell'analisi di regression semplice lineare (inclusi solo i risultati statisticamente significativi).

Variable	EE		C		PE	
	Beta	*p-value*	*Beta*	*p-value*	*Beta*	*p-value*
C	5.02	.00				
PE			-4.64	.00		
Workload	-6.95	.00	-2.90	.01		
Control	-3.50	.00			-2.48	.02
Reward	-3.98	.00	-3.65	.00	-2.56	.01
Community	-2.21	.01	-2.23	.03		
Fairness	-2.66	.01				
PHQ-9	8.41	.00	-4.00	.00		
Nr. of papers published					-2.81	.01

Wage adequacy	2.21	.03				

Table 5: Results of multiple regression analysis for the 3 dimensions of BS / risultati dell'analisi di regressione multipla per le 3 dimensioni del BS.

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Variable	EE		C		PE	
	Beta	*p-value*	*Beta*	*p-value*	*Beta*	*p-value*
Age	-0.03	0.33	-0.05	0.09	-0.02	0.90
Living condition	-0.02	0.87	0.07	0.53	-0.18	0.75
Year of attendance	-0.01	0.97	-0.05	0.67	0.38	0.54
Psychiatry first career choice	0.36	0.26	-0.35	0.27	1.96	0.21
Weekly working hours (Nr)	-0.02	0.20	-0.04	**0.02**	-0.12	0.15
Weekly working hours (Mean)	-0.01	0.54	-0.01	0.50	0.03	0.75
Days on vacancy	0.08	0.28	0.10	0.13	-0.35	0.30
Workload	-0.90	**0.01**	-0.24	0.13	0.32	0.68
Control	-0.10	0.49	0.02	0.90	1.18	0.10
Reward	-0.24	0.12	-0.34	**0.02**	1.47	**0.04**
Community	-0.01	0.93	-0.12	0.40	0.13	0.83

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Fairness	0.08	0.66	0.12	0.49	-2.00	**0.02**
Values	-0.22	0.30	0.07	0.73	1.10	0.28