

An Evaluation of Burnout among Foundation Doctors in Malta—A Cross-Sectional Observational Study

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Abstract

Background: Postgraduate medical trainees are at an increased risk of burnout. Burnout has been defined as “a psychological condition of emotional exhaustion, depersonalization and reduced personal accomplishment occurring in people persistently exposed to emotional and interpersonal stressors at work”. It can arise either from within the individual, from the medical profession itself or from healthcare organisations. Burnout is associated with mental health issues in trainees, impaired work performance and suboptimal patient outcomes. **Objective:** To evaluate the level of burnout among trainees of the Malta Foundation Programme. **Methods:** A cross-sectional observational study of three cohorts of the Malta Foundation Programme was conducted using the Copenhagen Burnout Inventory (CBI) to evaluate incidence of personal-, work-related and client related burnout. The cohorts were at 3 months, 1 year and 2 years of training respectively. The CBI was administered via Google Forms after ethical clearance. Descriptive statistics and non-parametric comparative statistics were used to analyse the results through SPSS v25.0. **Results:** A global response rate of 26.5% was achieved. CBI and its subscales showed good internal validity. High scores for burnout in all three scales were identified except for client-related burnout in First Year doctors. Burnout peaked midway through the 2-year period. High numbers reported “feeling “tired” and “physically exhausted”. Males reported more burnout than females. **Conclusion:** The high level of burnout so early in the career of Maltese postgraduate medical trainees is of concern. More studies are needed on the causality of this burnout and what factors are associated with burnout in this population.

Keywords

Burnout, Malta Foundation Programme, Copenhagen Burnout Inventory,

1. Background

Burnout has been defined as “a psychological condition of emotional exhaustion, depersonalization and reduced personal accomplishment occurring in people persistently exposed to emotional and interpersonal stressors at work” [1]. Emotional exhaustion has been defined as “feelings of being overextended and depleted of one’s emotional resources”. Depersonalisation has been defined as a “negative, cynical and detached response to other people, including patients and colleagues”. Lack of personal achievement occurs with feelings of inefficacy and a person feeling less competent in his or her work [2].

Postgraduate medical trainees are at an increased risk for burnout [3]. The move from medical school to postgraduate training is fraught with stress, working long hours and huge responsibilities. Suddenly, the lives of others depend on decisions taken by the newly graduated trainees, who at the same time are seeing their knowledge increase in an exponential manner. At a time when they are aware of their huge responsibilities, medical trainees may, however, feel they are not much in control.

Some level of stress in trainees is inevitable and actually favourable [3]. However, high levels of stress may be associated with burnout which in turn has been associated with mental health issues in trainees and an impaired work performance that may lead to suboptimal patient outcomes [4]. It is widely accepted that burnout is widespread among doctors. The prevalence, however, varies between countries and between specialties. The stage of one’s career is also known to have an influence on the prevalence of burnout [5]. It has also been suggested that the rate of burnout among doctors is rising [6] with significant consequences on those affected, their colleagues, the patients under their care and on the healthcare system as a whole [7]. Mental health issues experienced by trainees suffering from burnout include depression, anxiety, sleep disorders, increased risk of suicide, alcohol and drug abuse and fatigue. Physical symptoms may include headaches, gastrointestinal symptoms and decreased appetite. Cardiovascular disease and increased biomarkers are also more common in trainees suffering from burnout [4].

Three main sources of burnout have been identified. Burnout can result from causes within the individual such as perfectionism, the medical profession itself e.g. a blame culture, and from healthcare organisations e.g. working conditions [8]. Unfortunately, most of the interventions to tackle burnout have only focused on the individual and on ways to increase the resilience in individuals [9].

2. Objective

To analyse the level of burnout among trainees within the Malta Foundation

Programme.

3. Methodology

Ethical approval was sought and obtained from the Faculty Research Ethics Committee of the University of Malta. Authorisation to distribute the questionnaire was obtained from the Foundation Programme, Malta.

A cross-sectional observational study was conducted among the trainee doctors within the Malta Foundation Programme. Also included were “extended Foundation” doctors. The latter were a group of trainees who had just finished their two-year Foundation Programme. These trainees were waiting for their specialization posts to be assigned. Though technically this latter group does not fall under the responsibility of the Malta Foundation Programme any longer, they presented a good opportunity to survey trainees at the end of their two-year programme.

The survey was conducted in July/August 2020 for Foundation Year 2 and extended Foundation doctors. First-year Foundation doctors were surveyed in October 2020, at the end of their first rotation. In this way, the three cohorts were surveyed at 3-months, one-year and two-years of training respectively.

The instrument used to measure burnout was the Copenhagen Burnout Inventory. This is an established and widely used burnout measure. It is also the measure recommended for use by the General Medical Council [10].

The Copenhagen Burnout Inventory (CBI) is a 19-item questionnaire that is in the public domain. Nevertheless, personal communication with the author [11] ensured the permission to use in this study. The CBI consists of three scales, each measuring personal burnout, work-related burnout and client-related burnout respectively. The items are scored on a Likert scale scored as follows:

- 100—Always or to a very high degree
- 75—Often or to a high degree
- 50—Sometimes or somewhat
- 25—Seldom or to a low degree
- 0—Never/almost never or to a very low degree

The first scale, personal burnout, consists of six items that measure the level of burnout in people irrespective of their occupational status. The second scale, work-related burnout, is a seven-item scale evaluating whether a person attributes any experienced fatigue and exhaustion to his/her work. The third scale, client-related burnout, consists of six items. It evaluates whether a person attributes any fatigue and exhaustion being experienced to the work with clients eg patients or students [11].

The CBI has been validated and used in various countries including Denmark, New Zealand, Hong Kong, Taiwan and Sri Lanka [12].

The questionnaire was administered online via Google Forms via an invitation to participate sent to all trainees. A covering letter and a participant information sheet accompanied the invitation to participate in the study. Informed consent

was obtained from all participants. All replies were collected online and were completely anonymous. Each participant was asked to submit one reply only. A reminder was sent one week after the start of the data collection period. Data collection was terminated two weeks after the reminder.

The responses were analysed using SPSS v25.0. Descriptive statistics were used to describe the cohorts. Reliability for each scale was computed using Cronbach's alpha. A mean score was computed for each of the three CBI scales. A score of more than 50 was used as a cut off for the presence of burnout in each of the three scales [13]. For each scale, mean score, standard deviation and prevalence of burnout with confidence intervals were calculated. The Mann-Whitney U test was used to analyse differences between genders. The Kruskal-Wallis H test was used to test for differences between Foundation years. The threshold for statistical significance was a $p < 0.05$ and 95% confidence interval.

4. Results

4.1. Demographics

98 trainees out of 370 (26.5%) completed the online questionnaire. **Table 1** outlines the response rates for each of the three cohorts. 71.4% were aged between 23 and 25 years. 60.2% were female and 94.9% were single. 87.8% were Maltese. 86.7% worked in excess of the 48-hour week stipulated in the European Working Time Directive.

4.2. Reliability

The 19-item Copenhagen Burnout Inventory showed good internal validity with a Cronbach's alpha of 0.929. The individual scales within CBI had a Cronbach's alpha as follows:

Personal burnout—0.828

Work-related burnout—0.844

Client-Related burnout—0.861

4.3. Data Analysis

Mean scores for each year for each of the three scales were over 50. The only exception was client-related burnout in Foundation Year 1 doctors. **Table 2** demonstrates how the level of burnout is high across all stages of Foundation training in Malta.

Table 1. Response rates.

	Invited	Responses received
Foundation Year 1	124	39 (31.5%)
Foundation Year 2	133	33 (24.8%)
Extended Foundation	113	26 (23.0%)
Total	370	98 (26.5%)

Table 2. Mean score for each scale per cohort.

	Foundation year 1		Foundation year 2		Extended Foundation	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Personal burnout	54.4017	12.49846	68.6616	16.56340	58.9744	16.77847
Work-related burnout	51.4652	12.52597	66.8831	16.37298	56.5934	15.24267
Client-related burnout	42.8419	14.93005	57.7020	18.22533	53.3974	16.32470

The highest levels of burnout are found midway through the two-year training period. Levels of burnout decrease towards the end of training but are still higher than at the beginning of the training period. Kruskal-Wallis H analysis of these findings showed they are statistically significant for each of the three scales: for personal burnout ($H(2) = 10.978, p = 0.004$), for work-related burnout ($H(2) = 15.235, p \leq 0.001$), and for client-related burnout ($H(2) = 13.244, p = 0.001$).

Table 3 shows the mean ranking for each year.

Statistically significant differences between genders were identified in work-related and client-related burnout with male trainees exhibiting higher levels of burnout than their female counterparts. A Mann-Whitney test indicated that work-related burnout in males (Mean Rank = 56.51) was marginally significantly greater than for females (Mean Rank = 44.86), $U = 877.000, p = 0.047$. A Mann-Whitney test showed that client-related burnout in males (Mean Rank = 57.51) was significantly greater than in females (Mean Rank = 44.20), $U = 838.000, p = 0.023$. **Table 4** shows these findings in a tabular way.

Table 5 shows the mean score for each of the 19 items of the CBI for each cohort. Of concern are the scores for items 1 and 2 “How often do you feel tired” and “How often are you physically exhausted”. Both questions show very high scores across all three cohorts.

Among first-year Foundation doctors, 25 out of 39 (64.1%) scored more than 50 on the personal burnout scale, 17 out of 39 (43.6%) in the work-related burnout scale and 12 out of 39 (30.8%) in the client-related burnout scale.

Among second-year Foundation doctors, 27 out of 33 (81.8%) scored more than 50 on the personal burnout scale, 26 out of 33 (78.8%) on the work-related burnout scale, and 20 out of 33 (60.6%) on the client-related burnout scale.

At the end of the two-year training period, 7 out of 26 (26.9%) doctors scored more than 50 on the personal burnout scale, 19 out of 26 (73.1%) on the work-related burnout scale, and 16 out of 26 (61.5%) on the client-related burnout scale.

A series of Spearman rank-order correlations were conducted to determine whether there was relationship between any of three scales and gender or level of training. A two-tailed test of significance indicated a significant but very weak relationship between gender and both work-related ($r_s(98) = 0.202, p = 0.042$) and between gender and client-related burnout ($r_s(98) = 0.231, p = 0.022$). Similarly, a two-tailed test of significance indicated a significant but very weak relationship

Table 3. Kruskal-Wallis H score for the three scales across the three cohorts.

Ranks			
	Foundation Year	N	Mean Rank
Personal burnout	Foundation year 1	39	40.23
	Foundation year 2	33	62.20
	Extended Foundation	26	47.29
	Total	98	
Work-related burnout	Foundation year 1	39	38.12
	Foundation year 2	33	64.20
	Extended Foundation	26	47.92
	Total	98	
Client-related burnout	Foundation year 1	39	36.97
	Foundation year 2	33	60.26
	Extended Foundation	26	54.63
	Total	98	

Test Statistics^{a,b}			
	Personal burnout	Work-related burnout	Client-Related Burnout
Kruskal-Wallis H	10.978	15.235	13.244
df	2	2	2
Asymp. Sig.	0.004	<0.001	0.001

^aKruskal Wallis Test; ^bGrouping Variable: Foundation Year.

Table 4. The three scales of burnout across genders.

Ranks				
	Gender	N	Mean Rank	Sum of Ranks
Personal burnout	Female	59	48.48	2860.50
	Male	39	51.04	1990.50
	Total	98		
Work-related burnout	Female	59	44.86	2647.00
	Male	39	56.51	2204.00
	Total	98		
Client-Related Burnout	Female	59	44.20	2608.00
	Male	39	57.51	2243.00
	Total	98		

Test Statistics^a			
	Personal burnout	Work-related burnout	Client-related burnout
Mann-Whitney U	1090.500	877.000	838.000
Wilcoxon W	2860.500	2647.000	2608.000
Z	-0.437	-1.991	-2.277
Asymp. Sig. (2-tailed)	0.662	0.047	0.023

^aGrouping Variable: Gender.

Table 5. Mean scores for each item of the Copenhagen Burnout Inventory.

	Report							
	Foundation year 1		Foundation year 2		Extended Foundation		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
How often do you feel tired?	71.15	16.759	79.55	18.173	72.12	14.709	74.23	17.010
How often are you physically exhausted?	66.67	16.557	71.88	20.820	63.46	20.286	67.53	19.150
How often are you emotionally exhausted?	55.77	23.966	72.73	24.498	61.54	20.286	63.01	24.142
How often do you think: "I can't take it anymore"?	38.46	18.889	56.82	25.212	50.96	29.564	47.96	25.301
How often do you feel worn out?	58.33	16.557	72.73	18.075	60.58	17.569	63.78	18.347
How often do you feel weak and susceptible to illness	35.53	22.233	57.58	23.787	45.19	27.404	45.62	25.772
Do you feel worn out at the end of the working day?	64.10	16.013	83.33	14.878	68.27	18.108	71.68	18.176
Are you exhausted in the morning at the thought of another day at work?	53.21	23.070	68.18	27.438	62.50	27.613	60.71	26.379
Do you feel that every working hour is tiring for you?	35.26	19.633	56.06	26.539	44.23	20.381	44.64	23.880
Do you have enough energy for family and friends during leisure time?	51.92	18.482	58.33	20.412	46.15	18.292	52.55	19.494
Is your work emotionally exhausting?	55.77	17.642	71.97	25.585	58.65	23.390	61.99	23.050
Does your work frustrate you?	49.36	20.267	60.61	22.561	52.88	21.595	54.08	21.745
Do you feel burnt out because of your work?	50.64	23.288	69.70	17.408	63.46	17.650	60.46	21.516
Do you find it hard to work with clients?	40.38	15.827	50.00	20.729	48.08	18.605	45.66	18.662
Does it drain your energy to work with clients?	42.95	20.638	65.91	22.377	58.65	18.631	54.85	22.890
Do you find it frustrating to work with clients?	41.67	17.522	51.52	20.672	52.88	17.786	47.96	19.222
Do you feel that you give more than you get back when you work with clients?	55.77	25.302	71.97	24.810	65.38	23.534	63.78	25.415
Are you tired of working with clients?	32.69	23.052	46.21	25.861	43.27	20.685	40.05	24.011
Do you sometimes wonder how long you will be able to continue working with clients?	43.59	25.468	60.61	26.539	53.00	23.184	51.80	26.083

between foundation-year and work-related burnout ($r_s(98) = 0.201, p = 0.047$) and between foundation-year and client-related burnout ($r_s(98) = 0.294, p = 0.003$).

5. Discussion

The level of burnout is high across all stages of Foundation training in Malta. The highest levels of burnout are found midway through the two-year training period. As described earlier, levels of burnout decrease towards the end of training but are still higher than at the beginning of the training period. Similar results were presented by Rosen *et al.* [14] who found that a dramatic rise in the prevalence of burnout occurs over the course of an academic year. A meta-analysis by Lee *et al.* [15] describes how American doctors have higher levels of emotional exhaustion than their European counterparts. This has been attri-

buted to a better safety culture and career development opportunities in Europe. This meta-analysis also highlights the importance of studying burnout in the context of stressors relating to the work environment (such as quality and safety culture) and personal attributes (such as positive work attitudes and work-life conflicts).

Medical practice is fraught with high levels of emotions and stress. Newly graduated doctors find themselves suddenly having to deal with a plethora of situations that are highly emotional such as a dying patient, failure of treatment such as a failed CPR, delivering bad news to patients and relatives, and dealing with uncertainty in clinical practice while working long hours with very little rest. On top of this, these trainees have to deal with situations at home and at the workplace that are not the direct effect of the doctor-patient relationship. These include relationship problems, financial issues, bureaucratic requirements, limited resources and an increasingly litigious environment. Moreover, trainees are at a stage where they are constantly trying to keep in touch with the ever increasing medical knowledge, learn new skills and study for exams to further their career. All of this may be overwhelming for some and contribute to the development of burnout.

This high prevalence of burnout identifies a significant problem in this population of doctors in their early years of training. Such high levels of burnout may interfere with trainees achieving the maximum out of their training and, therefore, preventive measures may need to be implemented. Research has shown that burnout is not limited to the early training years. In a study by Sharma *et al.* [16] a third of UK-based colorectal and vascular consultants had features of burnout. Shanafelt *et al.* [17] report that 46% of respondents manifested at least one symptom of burnout. A similar study among European General Practitioners [18] identified that 43% scored high for Emotional Exhaustion, 35% for Depersonalisation and 32% for Personal Accomplishment.

The well-being of doctors is jeopardized by burnout. Research shows that burnout is associated with unhealthy eating habits [19], excessive alcohol consumption [20], smoking and drug abuse [21] and even suicide [5]. Teaching medical students how to adopt a healthy lifestyle during their undergraduate years might come in useful in the early postgraduate years. It is important that our newly graduated trainees have the necessary competencies in physical and mental health promotion and maintenance [12].

Interestingly, doctors have a higher prevalence of depression and burnout than the general population [22]. This high prevalence of depression and burnout in doctors occurs despite many of the risk factors for depression, such as low income, low socioeconomic status and unemployment, are not applicable to doctors. This high prevalence of burnout may be associated with poor patient care resulting from poor judgement, disengagement from work with possible hostility towards patients and strained relationships with colleagues [5]. It is therefore essential to understand the risk factors for burnout in doctors as any interventions to prevent or treat burnout in doctors need to be based on evi-

dence.

Evidence in the literature on the effect of gender on burnout is inconclusive. It is possible that the effect of gender is compounded by the possible effects of cultural differences as studies have been conducted in different settings [4]. The finding in this study that males are more prone to work-related and client-related burnout than their female counterparts contrasts with the findings of another study [23] who described that female trainees were more likely to suffer from burnout. Ripp *et al.* [24] found no significant differences in burnout between genders.

Interestingly, the World Medical Association (WMA) [25] observes that “physicians have rights as well as responsibilities”. The WMA observes that:

“physicians in many countries are experiencing great frustration in practising their profession whether because of limited resources, government and/or corporate micro-management of healthcare delivery, sensationalist media reports of medical errors and unethical physician conduct, or challenges to their authority and skills by patients and other healthcare providers.” (pg.114) [25]

Medical trainees need help to be able to cope with burnout. Many times, this takes the form of interventions at an individual level. These interventions would include education in how to manage stress, the development of skills in the individual, improved time-management and the honing of coping skills in resilience and managing the fine work-life balance. However, attention needs also to be given to the work environment. Burnout risk is reduced when a trainee feels part of a team and if efforts are appreciated. A motivational leadership is also essential in reducing the risk of burnout [26].

Many countries have addressed or are addressing the number of hours per week worked by doctors in training. Many have also addressed the length of shifts that trainee doctors are expected to work. While helping trainees adopt a healthy lifestyle is an important factor in preventing burnout, one has to remember that burnout needs to be tackled at an organizational level too. 86.7% of respondents in this study have a working week that extends beyond the 48-hour week stipulated in the European Working Time Directive. While one has to note that this is done on a voluntary basis, it is also true that the system will probably collapse should Foundation doctors all opt to work within the European Working Time Directive. The reasons why these doctors opt to work in excess of 48 hours per week (42.3% work between 56 - 65 hours per week) need to be studied further and may include a need for a better take-home financial pay cheque, a perception that opting for the EWTD will have a negative impact on their career progression or lack of self-awareness.

This study was conducted during the COVID-19 pandemic. This pandemic has undoubtedly resulted in an increased workload on all healthcare professionals, with longer hours of work and a more stressful work environment. These factors could have also been contributors to the high degree of burnout identified in this study.

6. Limitations

This study's low response rate is a major limiting factor. This could be due to the study being conducted during a pandemic that has increased the workload of this study's population manifold.

The low response rate increases the likelihood that trainees that were most affected by or interested in burnout responded. This increases the risk of response bias.

Studies using the Copenhagen Burnout Inventory in a Maltese population were not available. Therefore, the cutoff score of 50 for all three burnout scales, used in other research, had to be adopted for this study.

The study did not go into causative factors of burnout. Another paper investigating the role of the educational environment in the development of burnout is planned.

7. Conclusion

The high level of burnout so early in the career of Maltese postgraduate medical trainees is of concern. More studies are needed on the causality of this burnout and what factors are associated with burnout in this population. While efforts by the Foundation Programme to tackle burnout with trainees identified to be at risk are in place, more efforts may be needed aiming at dealing with the risk of burnout at an organizational and institutional level.

Ethics Approval and Consent to Participate

Ethics approval was obtained from the Faculty Research Ethics Committee at the University of Malta. Permission to conduct the study was also obtained from the Foundation Programme, Malta. Informed consent was obtained from all participants. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for Publication

We give our consent for the publication of the manuscript.

Availability of Data and Materials

The datasets generated and/or analysed during the current study are available in the [NAME] repository:

https://figshare.com/articles/dataset/An_evaluation_of_the_educational_environment_and_burnout_at_the_Malta_Foundation_Programme-3_numbers/13215428/1.

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Authors' Contributions

Marco Grech was the main contributor to this manuscript having written and

reviewed all the manuscript. Stefania Grech contributed with data collection and analysis and reviewing of the manuscript.

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Conflicts of Interest

No competing interests to report.

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