Author's response to reviews

Title: Burnout and training satisfaction of Greek residents: will the European Work Time Directive make a difference?

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We would like to thank the reviewers for their comments and input regarding the above manuscript. Please find below our responses to the reviewers' comments.

Reviewer 1: Dr Jelle T. Prins

Comment: “However they also present to much assumption in the background the paragraph. For example the second section in the background is filled with statements which the authors which they don’t make plausible to the reader. It seems that this are individual experiences. Please add some good references to this part.”

Response: We revised the background section and added references for all mentioned points. More specifically, we cited the reviews by Tountas et al. (2002), Mossialos et al. (2005), Exadaktylos et al. (2005) and Siantou et al. (2009) which provide an extensive overview of the Greek NHS and its peculiarities compared to other medical systems [18-21].

Furthermore, we referenced a number of recent papers demonstrating the significant financial and organizational deficiencies of the Greek NHS. More specifically, we cited a recent paper by Liaropoulos et al. (2008) [23] showing the widespread use of informal payments within the Greek NHS, a study by Tountas et al. (2005) [25] demonstrating the growing imbalance between the Greek public and the private health sector, a recent systematic review by Lionis et al. (2009) [22] which found that Greek integrated primary health care remains widely underdeveloped and proposes specific, urgent organizational reforms to ameliorate these deficiencies, as well as the recent paper by Aletras et al. (2007) [24] which evaluated the effects of previous Greek NHS reforms on the efficiency Greek health services and concluded that a number of additional reforms are necessary.

In addition, we cited two extensive reviews by Tountas et al. (2002) and Davaki and Mosialos (2005) which illustrate the “continuous crisis” (as was described by Tountas et al.) of the Greek health system and the urgent need for widespread reforms [20, 26]. Furthermore, we added a number of references demonstrating the significant lag of the Greek medical education system [27-30] as well as the paper by Avgerinos et al. (2004) demonstrating the current oversupply of doctors in Greece resulting in increased unemployment risk [32]. With regards to current educational shortcomings in surgical residencies (described in page 5, second paragraph of the EWTDisubsection in the background section,), we cited two articles by Kostakis and Mantas (2008) [29] and by Sakorafas G and Tsiotos G (2004) [31] illustrating the lack of log-books in many training centers and the significant heterogeneity of residency curricula.
Comment: “The last sentence in the second section of the background which starts with Thus, it can be concluded….. To my opinion the authors here jump to conclusions which can not be made referring to the text. Once again is seems to me that the authors do not differ that much between scientifically research en private opinions. Please consider to be more scientifically on this point.”

Response: We extensively reworked and clarified this part by summarizing certain scientifically documented conditions within the Greek NHS which may aggravate a number of factors that are known to be associated with burnout and provided references to justify this part [1-2, 18-26, 34-36].

Comment: “In the part of the text about the ETWD please add a date of writing in the text”

Response: As suggested, we added the date (April 2010) of the latest revision of the manuscript. The EWTD working hours limit has yet to be implemented in Greece.

Comment: “Also please explain the last sentence of this section where I think the authors do not make their point clear to the reader.”

Response: A number of concerns have been expressed by other European states that have already adopted the EWTD regarding its effects on resident training. Surgical residents in particular may experience reductions in the number of didactic outpatient and operative sessions as well as discontinuity of presence during clinical and postoperative care [38-42]. Such problems may be more pronounced in Greece due to the notable limitations of structured resident training as described by previous studies cited in the text [27-31]. Particularly in the surgical residencies, log-books have not been formally adopted by all training centers, the residency curricula among the various clinics have not been systematized and there exists significant heterogeneity in quality of the various training programs [29, 31]. The Greek educational system is thus largely based on the informal practical training of younger residents by those most experienced. Decreasing the active working hours may reduce clinical and operative experience as well as significantly limit the time available for senior residents or specialists to teach younger residents. We have revised the EWTD paragraph to clarify these points.

Comment: “In the first paragraph of the background it should be more appropriate to refer on two reviews on burnout among medical residents by Thomas and by Prins et al.”

Response: We accordingly revised the first paragraph of the background section and updated the reference list to include the suggested reviews.
Comment: “In the objectives section the authors clearly state their aims of the study. However, that last aim namely to delineate the status of Greek residents with regard to burnout is far beyond the scope of the article.”

Response: We accordingly removed that part of the objectives section.

Comment: “As described by Brenninkmeijer V, van Ypereren N. How to conduct research on burnout: advantages and disadvantages of a unidimensional approach in burnout research. Occup Environ Med 2003;60:16-20, the way the authors diagnose burnout is not usual. It gives an overestimation of burnout. Please use the calculation as described in the reference given before. Using it will give a smaller amount of burnout in the population. This means that in all sections the prevalence of burnout has to be changed!”

Response: We adopted the above recommended criteria (exhaustion + 1) for obtaining a unidimensional dichotomous burnout score and accordingly recalculated and modified the unidimensional burnout rates throughout our study. Thus, resident responses with a high score on the emotional exhaustion subscale combined with a high score on depersonalization or a low score on personal accomplishment were classified as having burnout resulting in a burnout prevalence of 154 out of 311 respondents (49.5%).

Comment: “It is strange to my opinion that no significant correlates were found between demographics, EWTD etc and burnout. As known from literature depersonalization always shows a difference between men and women. Please check if you have done the right statistics. If so please add if the outcomes differ from what is found in literature.”

Response: We have revised our results section to include the specific statistical tests used for each analysis. While it is true that depersonalization has often been shown to be affected by gender this is not always the case, particularly in Greek studies. Thus, in their study of burnout among Greek internal medicine physicians (both residents and fully trained specialists), Panagopoulou et al. (2006) found no association between depersonalization scores and gender in either group [52]. Three studies of burnout among Greek nursing staff also did not report a gender difference in depersonalization scores [57-59]. Similar results have been reported among other Greek populations. Bibou-Nakou et al. (1999) did not find a significant gender difference in depersonalization scores among 200 Greek elementary teachers [60]. Furthermore, Kokkinos C. (2006) validated the Maslach Burnout Inventory – Educators Survey (MBI-ES) in 771 Greek Cypriot teachers and reported no significant differences in depersonalization scores between men and women [61]. Our data, which are based on the largest sample of Greek physicians reported to date, are consistent with the above findings and indicate the potential influence of cross-cultural variation or of other unknown factors on the relationship between gender and depersonalization scores. We added a new paragraph on page 14 of the
discussion section to clarify these points. In addition, we have revised the discussion section on pages 14-15 to include additional comments on our data as well as further comparisons of our results with the published literature.

Comment: “Furthermore as no relationship is established between burnout and EWTD the authors have to be very careful in their conclusions on EWTD and burnout.”

Response: The lack of association between Greek residents’ opinion towards the EWTD and burnout has now been further emphasized and discussed on page 16 of the discussion section. In addition, we have accordingly revised the manuscript’s abstract and conclusion sections to particularly note this finding.

Comment: “Please be more extensive on why the residents in your study performed better as a group of general practitioners this is odd as may be expected that those in training (residents) are less personal accomplished as people who finished their training.”

Response: It is indeed generally expected that fully trained specialists should feel more accomplished compared to physicians still in training. However, general practice has a number of unique characteristics compared to other medical specialties in Greece, which may explain the declining over time of subjective feelings of personal accomplishment. The role of general practice within the Greek NHS is underrecognised and general practitioners are not highly regarded by other specialists [69-70]. Furthermore, the general practice residency curriculum is fundamentally different compared to all other medical specialties in Greece [71]. It consists of 4 years of training with only the final 10 months being spent in a primary health care center where residents work with and are trained by general practice specialists [71]. During the first 3 years, general practice residents rotate through various residency specialty programs, beginning with 6 months of internal medicine, where they are grouped and trained as indistinguishable members of each program’s medical team. It is during the final 10 months that they are practically introduced to the challenges and esteem issues peculiar to general practice and at this point they may begin to further question their own competence and performance [69-70, 72-73]. The present study was not conducted in a primary health center and it is therefore conceivable that the general practice residents surveyed have not yet been exposed first-hand to the low esteem held by other specialists towards the work carried out by general practitioners. It should also be noted that the Greek general practice data reported by Soler et al. (2008) [50] were collected between 2003-2004, while the present study was conducted during 2008. A number of legislative reforms and other interventions aimed at encouraging general practice as a career choice have been introduced during this time (all such recent legislative reforms and interventions are listed by the Greek Union of General Practitioners [74]). Therefore, further research is required to determine whether the finding of reduced personal accomplishment over time will be replicated in a study.
synchronously comparing Greek fully licensed general practitioners with
general practice residents rotating in secondary institutions or finishing their
residency training in primary health centers. We have revised the discussion
section (pages 17-18) to clarify these points.

Comment: “Please remove the whole policy implications section. It is not in
balance with the rest of the paper and as stated before I do not think this
section must be in a scientifically paper, although I can imagine and can
agree the content of it.”

Response: In accordance with the reviewer’s suggestion, we completely
removed the policy implications section and revised the discussion section
which now strictly focuses on commenting the scientific findings of our study.

Reviewer 2: Dr Yannis Tountas

Comment: “1) In the abstract: The Methods section could improved. The
listing of the statistical tests used is awkward.”

Response: The methods section of the abstract was modified according to
the reviewer’s suggestion.

Comment: “2) Background- Resident Burnout section: two sentences from
the end “Thus, it can be hypothesized that these conditions....”. Which are
these "conditions"? Please summarize or paraphrase them. It is unclear from
the previous sections which are these conditions.”

Response: The organizational and financial problems of the Greek NHS [18-
26] may result in higher work-related stress, role ambiguity and higher
uncertainty about the future prospects of residents. Furthermore, the
underdevelopment of Greek integrated primary health care [22] intensifies the
workload of residents working in secondary institutions. In addition, the
widespread use of informal payments within the Greek NHS [23], the growing
imbalance between the Greek public and private health sector [25] as well as
the perceived inefficiency and inequity of Greek health care [18, 20, 24-25]
result in increased patient dissatisfaction which may aggravate conflicts
between patients and residents. These factors (i.e. higher work-related stress,
work role problems, anxiety about the future, work overload and
confrontations with patients) have previously been associated with burnout [1-
2, 34-36] and may thus render those residents who do choose to train in
Greece vulnerable to this syndrome. We revised this part (page 4) to
summarize and clarify these points.
Comment: “3) Objectives section: 5th sentence from the end. Which are the “factors that are associated with these opinions”? The nature of the factors (organisational, educational etc?).”

Response: The factors tested for potential relationships with Greek residents’ subjective opinions towards the EWTD were demographic (age, gender, marital status and parenthood) and work-related (residency field, burnout). We added this information in the objectives section.

Comment: “4) Statistical analysis section: The choice of tests is based on whether the data permit parametric or non-parametric analysis.”

Response: We added the suggested information to the statistical analysis section.

Comment: “5) Future outlook section: Mention in the discussion section why the General Hospital of Crete was an exception.”

Response: Indeed our results showed that residents training at one General Hospital located in the city of Heraklion (Crete) were significantly more likely to be unoptimistic about their future employment prospects compared to their peers from any of the other hospitals surveyed. However, the present study did not ask respondents about a number of individual, familial, cultural, economical and workplace determinants which may influence self-perceived job insecurity [62-63]. Such unmeasured potential confounders may explain the observed institutional difference in our study and should be explored in future research. We added a comment on this issue in the discussion section (page 15).

Comment: “6) Policy implication section: Improve the second paragraph. The authors did not really measure effort-reward imbalance. The explanation here seems forced.”

Response: We agree with both reviewers’ conclusion that a large part of the policy implication section may not be satisfactory substantiated by the present study’s scientific data. We therefore agreed with the previous reviewer’s suggestion to remove this part and accordingly improved and extended the discussion section by focusing on the scientific data of our study.

Updated references:

Please note that we updated the list of references and added the following references to the text according to both reviewers’ suggestions:


71. Aristotle University of Thessaloniki: Career Services Office: Comprehensive List of Medical Residencies' Curricula. Available from URL: http://www.cso.auth.gr/OldPages/Greek/DrKatalogos.gr.htm [In Greek]
