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Brief communication

The emotional burden of the SARS-CoV-2 pandemic on medical students in Greece

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ABSTRACT

Everyday human life has recently been affected worldwide by the SARS-CoV-2 pandemic. Medical students were found to be a vulnerable population, facing many challenges with the temporary suspension of clinical activities, as well as their confrontation with violent changes in their chosen profession. The purpose of the present study is to record and detect possible signs of emotional burden on the psychological profile of northern Greek medical students in the second wave of the European pandemic at the hitherto culmination point. 342 medical students completed a questionnaire investigating some very rough and easily self-reported affective psychiatric symptoms and their responses were statistically evaluated. The results disclosed experienced emotional burden among medical students with a general exacerbation of various non-specific affective symptoms, but a decrease in suicidal ideation and auto-destructiveness was nevertheless observed. On the contrary, a moderate increase in wishes for illness was noted among medical students. Findings of emotional burden were disclosed among medical students with a general worsening of various non-specific affective symptoms in turn connoting feelings of discomfort in adapting to the multiple constraints and fear of insecurity for the newly-formed reality created by the outbreak of the new coronavirus pandemic.

KEYWORDS: SARS-CoV-2, students; occupational psychology, medicine, pandemic.

Introduction

Everyday human life has recently been affected worldwide by the SARS-CoV-2 pandemic as well as measures proposed by expertise and implemented by governments.[1] In Greece, the new coronavirus pandemic broke out and expanded from February 26, 2020 onwards, but began to escalate uncontrollably in northern Greece from November, 2020, and remained so until May 2021, with emergency measures taken by the Greek government, including suspension of operation of all educational structures at all levels, compulsory relocation of medical staff and patients, suspension of all leaves for healthcare workers as well as compulsory requisition of private health structures.[2] Many healthcare professionals and some of their close relatives were infected. This resulted in a violent change of employment status for

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many workers, especially those in the healthcare sector. The reality in everyday medical practice has been differentiated by far. Medical students being the future of the scientific medical community have been confronted with multiple challenges including the temporary disruption of university studies and educational activities as well as the eminent confrontation with a violently changed profession in both academic and practical environments. Initial reports suggest that students constitute a vulnerable population but have been conducted in a much milder phase of the SARS-CoV-2 pandemic and most included students from various faculties, but the present study focuses only on students of medicine and to the authors' knowledge is the first one carried out in the second wave of the European pandemic at the hitherto culmination point with all that this time parameter entails.[3,4]

The purpose of the present study is to record and detect possible signs of emotional burden among northern Greek medical students to the period of implementation of restrictive measures and the occupational impact of the pandemic.

Material and Method

The authors of the present article are a team of mental health professionals working in both reference hospitals for the novel coronavirus incidents in northern Greece. On November 21, 2020, 342 medical students of northern Greece (Democritus University of Thrace and Aristotle University of Thessaloniki) voluntarily completed an online questionnaire exploring self-reported psychiatric symptoms and changing habits among before and after February, 2020, referring to the month just before the onset of the pandemic in Greece. The study was approved by the ethics committee affiliated to Democritus University of Thrace, Department of Medicine and a written (electronic) informed consent was obtained from all participants.

The aim of the study was to assess the psychological burden of the SARS-CoV-2 pandemic on Greek medical students in a clinical interview. Therefore, phrases from questionnaires were used in order to match questions that we commonly ask during the clinical examination. In order to achieve its remote administration in the form of an anonymous and fast digital reply, and for the homogeneity of the results, we used some questions from the questionnaires Mini-International Neuropsychiatric Interview (MINI), Montgomery and Asberg Depression Rating Scale (MADRS), Hamilton Depression Rating Scale (HAMD) and Beck Depression Inventory (BDI). It is highlighted that the primary goal was to quickly retrieve such information as part of a screening routine in an ad hoc questionnaire and not to complete a validated questionnaire that would yield a score or a diagnosis.[5–8]

Specifically, the questions concerned: pessimistic thoughts[6,7] (representing thoughts of guilt, inferiority, self-reproach, sinfulness, remorse and ruin), death wishes6 (representing the feeling that life is not worth living and that a natural death would be welcome), suicidality[5,6] (suicidal thought content, intent to hurt oneself either passively or actively, absence of presence of plan/ preparations for suicide), suicide attempts[5,8] and other self-destructive actions5, irritability,[5,8] inner tension[6,8] (representing feelings of ill-defined discomfort, edginess, inner turmoil, mental tension mounting to either panic, dread or anguish) and sleep disorders[5,6,8] (representing the experience of reduced duration or depth of sleep compared to the subject's own normal pattern). Furthermore, the consumption of alcohol and the use of substances as well as wishes for illness were investigated. Wishes for illness included hypochondriasis[8] as well as various other non-specific minor etiologies, such as a deep need for attention/ to be empathized/nurtured, avoidance of daily responsibilities due to lassitude6 or low self-esteem and self-doubt, expressed desire to get away from the exhausting and stressful reality, etc.

Relationships between self-reported signs of emotional burden and individuals' demographic variables, their history of alcohol consumption or substance abuse, attitudes towards illness and autodestructive behavior were statistically examined. Statistical significance was tested with Mann-Whitney U test and Fisher's exact test. All tests were performed in IBM SPSS software 25.0, were two-tailed, and the significance level was set at $p < 0.05$.

Results

The age of the participants ranged between 18 and 53 years with a mean age of 22.71 (Median=22; Variance=19.37; Standard Deviation=4.40). Females outnumbered males with a M:F ratio; 1:1.6. Results disclosed that subjects experienced a 64.9% self-reported increase in feelings of anxiety and agitation ($p<0.01$), a 51.2% self-reported increase of pessimistic thoughts ($p<0.01$), a 46.5% self-reported increase in confrontational behavior against others and feelings of anger ($p<0.01$), a 42.4% self-reported increase in sleep disturbances ($p<0.01$), as well as a 24.3% self-reported increase in alcohol consumption ($p<0.01$), and an 11.4% increase in substance consumption ($p<0.05$) compared to the situation prior to February, 2020. Furthermore, 1.52 times higher wishes for illness were noted among subjects compared to the same variable prior to February, 2020, which was moderately significant ($p=0.05$). 25.7% of medical students admitted having expressed death wishes at least

once in lifetime, while self-reported death wishes decreased almost in half (1.9:1) after the outburst of the pandemic (p<0.01). In addition, 10.2% of medical students had committed a suicide attempt and 11.1% had engaged in physical self-destructive actions in their lifetime, while self-destructive actions self-reportedly fell to 1.7–fold lower compared to the same variable prior to February, 2020 (p<0.05). Self-destructive thoughts also fell to 1.52 times lower compared to the same variable prior to February, 2020 (p<0.05).

Regarding gender differences, females seemed to experience more perceived psychological burden compared to males, in self-reported increase of pessimistic thoughts, feelings of anxiety and agitation, and sleep disturbances (p<0.05) (table 1).

Discussion

Data extracted from international literature as well as different national health and educational systems have indicated that medical students stand for a population of increased vulnerability to burnout and suicidality.[9,10] Specifically, a study by Zis et al on a sample of Cypriot medical students concluded significantly higher levels of exhaustion among students of the sixth year of medical education during the Covid-19 pandemic (in contrast to the pre-pandemic era; p<0.01), significantly deteriorating general mental health among students of the first, third and sixth year of medical education during the pandemic (in contrast to pre-pandemic era; p<0.01) as well as higher levels of cyniscism across all years of education (p<0.01).[11] Furthermore, an earlier study by Kaparounaki et al. on a sample of Greek medical students had detected a "horizontal" increase in anxiety levels (73.0%), depression (60.9%), overall suicidality (20.2%), quantity of sleep (66.3%) as well as a deterioration in sleep quality (43.0%), sexual life (38.6%), and overall quality of life (57.0%) in a sample of Greek medical students.[12] A similar study conducted by Torun et al on a sample of Turkish medical students found the perceived stress level in females higher compared to males, and concluded that the status of having personal medical history of a chronic disorder, low family income, and close relationship with a person infected with COVID-19 were aggravating factors for anxiety among medical students. In addition, the same research study detected increase in sleep (29.5%) and appetite disturbances (36.4%), while found the status of being married or living with family to be protective factors for anxiety dur-

Table 1. Questionnaire results from medical students (n=342)

	Total	Fisher's	x^2	p	Males	Females	x^2	p
Overall participants	342 (100%)				130 (38%)	212 (62%)	6.270	0.002
Increase of pessimistic thoughts	175 (51.2%)	<0.001	13.909	<0.001	55 (42.3%)	120 (56.6%)	2.567	0.010
Increase in alcohol consumption	83 (24.3%)	<0.001	6.640	<0.001	33 (25.4%)	50 (23.6%)	0.377	0.704
Increase in substance consumption	39 (11.4%)	0.046	3.074	0.003	12 (9.2%)	27 (12.7%)	0.990	0.322
Present self-destructive thoughts	33 (9.7%)				13 (10%)	20 (9.4%)	0.172	0.865
Lifetime self-destructive thoughts	50 (14.6%)				18 (13.9%)	32 (15.1%)	0.317	0.749
Decline in self-destructive thoughts	17 (5%)	0.082	-1.991	0.047	5 (395%)	12 (5.7%)	0.749	0.453
Present wishes for illness	47 (13.7%)				16 (12.3%)	31 (14.6%)	0.604	0.549
Lifetime wishes for illness	31 (9.1%)				11 (8.5%)	20 (9.4%)	0.304	0.764
Increase in wishes for illness	16 (4.7%)	0.095	1.925	0.054	5 (3.8%)	11 (5.2%)	0.571	0.569
Present death wishes	44 (12.9%)				13 (10.0%)	31 (14.6%)	1.239	0.215
Lifetime death wishes	88 (25.7%)				30 (23.1%)	58 (27.4%)	0.879	0.379
Decrease in death wishes	44 (12.9%)	0.0006	-4.263	<0.001	17 (13.1%)	27 (12.7%)	0.091	0.928
Lifetime suicide attempts	35 (10.2%)				12 (9.2%)	23 (10.9%)	0.479	0.631
Present self-harm	22 (6.4%)				7 (5.4%)	15 (7.1%)	0.619	0.535
Lifetime self-harm	38 (11.1%)				12 (9.2%)	26 (12.3%)	0.867	0.384
Decrease inself-harm	16 (4.7%)	0.059	-2.163	0.031	5 (3.9%)	11 (5.2%)	0.571	0.569
Increase in confrontations with others	159 (46.5%)	<0.001	12.534	<0.001	55 (42.3%)	104 (49.1%)	1.215	0.226
Increase in feelings of anxiety and agitation	222 (64.9%)	<0.001	17.006	<0.001	71 (54.6%)	151 (71.2%)	3.125	0.002
Increase in sleep disturbances	145 (42.4%)	<0.001	11.089	<0.001	46 (35.4%)	99 (46.7%)	2.055	0.039

ing the pandemic. No significant difference was found in terms of tobacco smoking habits and patterns by the specific study.[13] In addition, research by Cao et al on a sample of Chinese medical students indicated that 0.9% of the respondents were experiencing severe anxiety, 2.7% moderate anxiety, and 21.3% mild anxiety during the pandemic. The demographic status of living in urban areas, co-habiting with parents, and family income stability were identified as protective factors against anxiety. On the contrary, living in rural areas, living alone, family income instability, and having a relative or an acquaintance infected with COVID-19 were correlated with more severe levels of anxiety. Furthermore, in the specific study, gender was found to have no significant effect on anxiety.[14]

The results of the present study disclosed experienced emotional burden among medical students with a general exacerbation of various non-specific affective symptoms; anxiety (64.9%), anger (46.5%), sleep disturbances (42.4%), pessimistic thoughts (51.2%), alcohol consumption (24.3%) – thus, being generally in line with aforementioned literature results, but for a decrease in suicidal ideation and autodestructiveness nevertheless observed.[3,4] Death wishes without actively causing self-harm in the context of passive death ideation remained stable and unaffected. Alcohol consumption and substance abuse increased, in contrast to a previous study on alcohol abuse in the general population during the pandemic and lockdown era in Greece.[15] On the contrary, a moderate increase in wishes for illness was noted among medical students, while a possible interpretation for this finding may be the perceived sense of security provided by immunity, which may be in turn associated with the fear of insecurity and feelings of discomfort in adapting to the multiple constraints and the new reality formed by the novel coronavirus pandemic, while at the same time reflecting qualitative variables related to the appraisal and judgment of the specific situation on behalf of medical students.

More research needs to be invested over the impact of the violent outbreak of the pandemic on matters of occupational and social psychology.

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Σύντομο άρθρο

Η ψυχολογική επιβάρυνση από την πανδημία SARS-CoV-2 στους Έλληνες φοιτητές Ιατρικής

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ΠΕΡΙΛΗΨΗ

Λίαν προσφάτως, η ανθρώπινη καθημερινότητα επηρεάστηκε σε παγκόσμια κλίμακα από την πανδημία SARS-CoV-2. Οι φοιτητές Ιατρικής είναι ένας ευάλωτος πληθυσμός, που βρέθηκε να αντιμετωπίζει πολυάριθμες προκλήσεις με την προσωρινή αναστολή κλινικών δραστηριοτήτων στα πλαίσια της εκπαιδευτικής διαδικασίας, καθώς και την αντιμετώπιση ριζικών και βίαιων μεταβολών σε σχέση με το επάγγελμα αυτό σε πολλά επίπεδα (συνθηκών, αντικειμένου, κλινικής πρακτικής). Ο σκοπός της παρούσας μελέτης είναι να καταγράψει και να εντοπίσει στοιχεία συναισθηματικής επιβάρυνσης στο ψυχολογικό προφίλ των φοιτητών Ιατρικής της Βόρειας Ελλάδας κατά το δεύτερο κύμα της ευρωπαϊκής πανδημίας στο χρονικό σημείο μέχρι την «κορύφωση» της πανδημίας. 342 φοιτητές Ιατρικής συμπλήρωσαν ένα ερωτηματολόγιο σε διερεύνηση κάποιων πολύ βασικών και εύκολα αυτο-αναφερόμενων συμπτωμάτων συναισθηματικών διαταραχών και οι απαντήσεις τους αξιολογήθηκαν στατιστικά. Τα αποτελέσματα της παρούσας μελέτης αποκάλυψαν ενδείξεις συναισθηματικής επιβάρυνσης μεταξύ των φοιτητών ιατρικής με γενική επιδείνωση διαφόρων μη ειδικών συναισθηματικών συμπτωμάτων, αλλά παρατηρήθηκε μείωση του αυτοκτονικού ιδεασμού και της αυτοκαταστροφικής διάθεσης. Αντιθέτως, παρατηρήθηκε μια μέτρια αύξηση των ευχών για νόσηση μεταξύ των φοιτητών Ιατρικής. Ευρήματα συναισθηματικής επιβάρυνσης αποκαλύφθηκαν στον μελετώμενο πληθυσμό φοιτητών Ιατρικής με γενική επιδείνωση διαφόρων μη ειδικών συναισθηματικών συμπτωμάτων, υποδηλώνοντας, με τη σειρά τους, συναισθήματα δυσφορίας για την προσαρμογή στους πολλαπλούς περιορισμούς και φόβο -ανασφάλεια για τη νεοσυσταθείσα πραγματικότητα που δημιουργήθηκε από το ξέσπασμα της πανδημίας του νέου κορωνοϊού.

ΛΕΞΕΙΣ ΕΥΡΕΤΗΡΙΟΥ: SARS-CoV-2, φοιτητές, επαγγελματική ψυχολογία, ιατρική, Πανδημία.

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