

Future Health Care Workers-Mental Health Problems and Correlates

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Abstract: The aim of this study was to determine the presence of mental health problems among healthcare students and to examine its relation to work-related stress and physical pathologies. The study was performed using data collected between 2012 and 2013 from Italian healthcare students of the University of Florence. Participants were also submitted to an interview and a physical examination was carried out by a resident physician in Occupational Medicine. We used the GHQ-12 questionnaire to evaluate if the respondent had experienced a particular symptom or behaviour recently and a physical examination to report the presence of pathologies. The hierarchical regression had the GHQ-12 as dependent variable, demographics in the first block, dimensions of physical pathologies in the second block and work-related stress in the third block. The results pointed out that both pre-existent diseases and work-related stress affect the mental health status of students. We found that there is a significant correlation between work-related stress and existent physical pathologies with mental health problems among health care students. Preventive and intervention measures should be taken in order to prevent work-related stress in healthcare students during their university career, in particular if they have a history of pre-existing clinical pathologies.

Key words: Healthcare Students • Healthcare Education • Work-Related Stress • GHQ-12 • Mental Health • Job Stressors

INTRODUCTION

Healthcare education is long and stressful and students may suffer from mental distress, with significant consequences for student's health and quality of life [1, 2].

Several researches showed that many healthcare students have to face challenges to their well-being during their training [3]. Mental health, distress, anxiety, emotional exhaustion, depressive disorder, depression and professional burnout are highly prevalent during healthcare schools (age-matched peers by the later years of training) with significant potential consequences for student health, professionalism and patient care [4].

We know that healthcare professionals, with particular regard to nurses, are exposed to several job stressors that can adversely affect both their mental and physical health and also decrease work engagement [5]; this may be enhanced in students or young workers with physical pathologies.

It was also described a correlation between work-related stress and voluptuary habits (e.g. alcohol consumption, cigarette smoke) in healthcare students which may negatively affect academic performance and the job for which they are in training [6]; there is also a difference in the ability to handle stress and the workload, linked to the gender and between individuals of different ages [7].

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In addition, healthcare students, encounter other potential sources of stress such as the emotions involved in dealing with patients and the learning of applied clinical skills [8, 9]. Stress in healthcare students has been associated with increased levels of depression [10, 11] use of drugs and alcohol and increased anxiety [6, 12] and attrition [13, 14].

As over observed, healthcare students have to face challenges to their well-being during their training [3]. In particular, Literature shows deterioration in student's mental health as they go through it [15]. Another particularly stressful time in the career of the students is the clinical training; in fact during this period they experience, for the first time in their life, a direct contact with patients and a related increase in responsibilities. This issue may increase the sense of inadequacy regarding the course of study: empathy, altruism and professionalism with patients may also decrease as a consequence [15, 16].

It is known in literature that stress in the workplace can facilitate the onset of some medical conditions, like hypertension and heart diseases [17-19]. It has been also showed that there is a dose-response association between exposure to work related stress and the metabolic syndrome [20].

The aim of this study was to determine the presence of mental health problems among health care students and to examine its relation to work-related stress and existent physical pathologies, while controlling for demographics. Gender, age and alcohol consumption were used to control for the relationship between work-related stress, physical pathologies and mental health problems, since these demographic variables might be related to health related constructs. Particularly, healthcare students may be frequently exposed to psychosocial stressors that, if persistent, can lead to depressive disorders.

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being. Depressed people may feel sad, anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, hurt, or restless due to inappropriate response to chronic emotional and interpersonal stressors in the workplace or to activities that are psychologically similar to work such as students' workload [21-23].

MATERIALS AND METHODS

We collected our data between 2012 and 2013. A survey was administered by occupational physicians

to a consistent sample of Italian healthcare students of the University of Florence at the first or second year. In total, 412 students-belonging to seven professional courses of study-participated in the study. A consistent part of students attended a nursing degree. Regarding gender, 70.6% of the participants were women and 29.4% were men. The average age was 23.8 years with a standard deviation of 7 years.

Respondents were asked also to participate in an interview and in a medical visit. Interviews and medical visits were held by resident physicians in Occupational Medicine with the aim of investigating physical health and the presence of existing pathologies. Through the establishment of questionnaires, physicians traced a profile with the presence or non presence of main pathologies.

A written informed consent was obtained both for the questionnaires and the visits. Ethical clearance of the protocol was obtained from the University of Florence's Research Ethics Committee.

Instruments

The General Health Questionnaire (GHQ-12): The scale asks whether the respondent has experienced a particular symptom or behavior recently. Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual or much more than usual) and it gives a total score of 12 or 36 on the basis of the scoring method selected. Six of the items are positively worded; the other six are negatively worded. The customary type of scores used are a bimodal scale (0-0-1-1) and a 4-point Likert-type scale (0-1-2-3); there is evidence to suggest that the latter allows better discrimination between competing models in confirmatory factor analyses of the GHQ-12. This was used for this study. A higher score indicates a greater degree of psychological distress. The version that was translated into Italian by Fraccaroli *et al.* [24] was used in this investigation.

Higher Education Stress Inventory: The present study wanted to use recent model of stress developed for students. All participants filled two scales of the Higher Education stress inventory [25]: (1) *job demands* (4 item; e.g., "The pace of studies is too high"), which measures the perception of quantitative demanding aspects of the studies; and (2) *non commitment* (two item; e.g., "I am satisfied of my choice of career), which measure the involvement in the studies and with the future profession.

Control Variables: Gender and age alcohol consumption (yes or not) were included as control variables because they have been identified as possible confounders of the relation between job characteristics and physical problems and outcome variables.

Presence of Pathologies: After the physical examination and the interview, physicians reported the presence (yes) or the non-presence of pathologies (no).

Procedure and Data Analysis: Descriptive statistics, Pearson's *r* correlation and hierarchical regressions were performed on the study data.

RESULTS AND DISCUSSION

Descriptive statistics and the correlations between demographics, mental health problems, stress and existent pathologies were reported in Table 1.

There were medium-low negative correlations between stress dimensions and GHQ-12. In contrast there were weaker correlations between physical pathologies and GHQ-12. Alcohol consumption correlated neither with GHQ-12 nor with stress factors.

Table 2 shows the results of the regression analyses:

The second analysis was the hierarchical regression with GHQ-12 as dependent variable and with demographics in the first block and the dimensions of physical pathologies and work-related stress respectively in the second and third block. In the first block, demographic data didn't account for any significant variance in the mental health. When the dimension of physical pathologies was added in the second block, the model was significant and this dimension accounted for the 3% of variance. Finally, when job demand and commitment were added in the third block, the model was significant and these dimensions accounted for the 7% increase in variance.

The concept of stress has been widely discussed in relation to healthcare students and reports of high levels of perceived stress amongst these groups are common [8, 12, 26, 27, 28].

Results of our research confirmed that stress among healthcare students is a current and growing problem.

Particularly high workloads and low commitment with the studies seem particularly harmful. All students experience the demands of course work, a new environment and new people, however those that are not able learning to manage their job demands seem at risk of developing mental health problems.

Table 1: Means, Standard deviations, Alpha and correlations.

Variable	M	SD	Alpha	1	2	3	4	5	6	7
1 Age	23.8	7	--	--	.00	.07	.04	-.15**	.02	.07
2 Gender	1.7	.45	--		--	.05	.01	.08	-.14**	.03
3 alcohol	1.9	.20	--			--	-.07	.06	-.03	.05
4 Pathologies	1.8	.30	--				--	.00	-.03	.17**
5 Job demand	7.5	1.7	.70					--	.09	.26**
6 Non Commitment	3.1	1.2	.80						--	.12*
7 GHQ-12	9.5	3.9	.75							--

Table 2: Hierarchical regression with mental health as criterion variable.

Predictors	Mental health		
	Block 1	Block 2	Block3
Age	-.08	-.08	-.05
Gender	.03	.03	.03
Alcohol consumption	.05	.04	.03
Physical pathologies	-	.17***	.17***
Non commitment	-	.	.13*
Job demand	-	-	.25***
<i>R</i> ²	.00	.03***	.10***
ΔR^2	-	.03***	.07***

p*<.05; *p*<.01; ****p*<.001.

It is important to address these issues and provide support within the educational system to help students to recognize their abilities to cope with workload. The exhaustion may be particularly detrimental to students for who worrying induces feelings of insufficiency or poor self-confidence.

Finally, the non commitment to the chosen career among these healthcare students was indeed dangerous because it seems to spill over on the general mental health.

This finding that work-related stress students experienced higher levels of mental health problems is consistent with some previous Literature for the general population of adults [29- 33].

Unexpectedly, alcohol consumption was associated neither with mental health nor with stress. This result might be due to the fact that the study was conducted in Italy; cultural differences probably exist in alcohol consumption between different countries. The levels of alcohol consumption may be highest if the sample studied was drawn for instance from North European countries where there is generally a particularly strong focus on drinking among students.

Literature shows that the presence of pre-existing pathologies could be considered as an additional risk factor in the development of mental disorders with an impact on the students' future job [34, 35]. In our series we found a positive association between pre-existing pathological health conditions and the onset of mental health problems in healthcare training. After performing a regression model and checking the effect of demographic variables (especially gender and age) and lifestyle (consumption of alcohol) we may assert that the pre-existing health problems (3% of variance)-in association with the workload and the limited involvement (7% of variance)-influence the state of mental health of students. It may also probable that the presence of pre-existing health problems pathology increases the sense of inadequacy in the students in their profession, making the study load, the lack of leisure time, family and friends less tolerable [36].

A limitation of our study consists in the lack of evaluation of some issues, such as the influence of the personality of individual students on the ability to react to stressors, the social and familiar context, the economic condition, etc. All these factors may positively or negatively affect the onset of mental illness [37, 38]. In addition, In the present study, we focused on GHQ-12 thus did not examine the full range of mental health problems prevalent in student populations.

Finally, the sample was drawn from a single university, thus limiting the generalizability of the present findings. Further studies are needed to generalize the results of our and similar researches and to enable a comparison between healthcare students and other students' stress perceptions [39].

In our study increased mental health problems were associates with concurrent demands from studies or work, as expected and further predicted by non commitment and pre-existing physical diseases.

Perhaps the most striking finding was that students who reported having pre-existing pathologies were substantially more likely to develop mental health problems. These results demonstrate that exist a significant association of physical and mental health.

Our results, in line with the Literature, show a correlation between the presence of pre-existing physical diseases and a lower tolerance for study related stress as well as mental health problems in a population of healthcare students. Therefore, it is important to consider these issues as a possible source of risk for the development of pathologies such as anxiety, depression or burnout syndrome not only among students but also in their future professions [40]. Indeed, the longer the duration of these problems the severer might be the consequences on mental health.

In consideration of such perspective, we underline the need of promote and improve health surveillance, screening and prevention programs and, where necessary, expert medical advices and psychological support.

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