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RESEARCH ARTICLE

STATE OF STRESS IN NURSING AND TECHNICAL HEALTH PROFESSIONS IN MOROCCO

Hanane Hababa[1], Leila Lafdili[2], Samia Boussaa[2] and Yasmine Bezzaz[3]

1. Regional Directorate of Health and Social Protection Marrakech-Safi Morocco.
2. National School of Public Health Rabat Morocco.
3. Moroccan Obseratory of Management Practices in Morocco.

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Abstract

In a world where success is often measured by academic performance during university studies, and where everyone seems to be increasingly suffering from psychosocial illnesses linked to various types of pressure, it seems important to evaluate these two dimensions and to connect between them, in order to isolate favorable conditions for good mental health, combined with good academic results. The nursing student population is exposed to different stressors than the rest of the students, which is why this study is an attempt to evaluate the determinants of stress in this population within the ISPITS of Marrakech, as well as the impact of those on academic performance. The instruments used are self-administered questionnaires to students in S2 and S6 (N = 324) including a perceived stress scale. The results were analyzed using a correlational design. The findings show high levels of stress that appear to be correlated with age, sex, and work activity, with no apparent or significant connection to academic performance through appreciation. Our analyzes appear to grasp an interesting effect of the efforts made versus the rewards obtained as well as perceived demands on the stress experienced, with a slight gender effect.

Introduction

Over the past few decades, stress research has undergone a remarkable development as evidenced by numerous studies (1-4), and while work-related stress is a hot topic, student mental health has become a major public health concern. According to the World Health Organization (WHO), stress occurs in an individual whose personal resources and coping strategies are overwhelmed by the demands placed upon them (5). Leka et al (6) state that stress affects many people in different ways, and unusual and counterproductive behaviour at work can be a consequence of occupational stress resulting in physical and mental health impairment. "Stressed workers are more likely to be unhealthy, unmotivated, less productive and less compliant with workplace safety rules" (6). A study conducted by Campbell (2) with patrol officers shows a strong relationship between patrol officers' subjective stress and their level of organizational commitment. In a study of 66 nurses, Aucoin (3) revealed that stress is omnipresent in the practice of health care personnel and that there is a significant relationship between the level of stress felt and certain stressors related to the work environment (work conditions, lack of personnel, nature of the context in which they practice).

Corresponding Author: Hanane Hababa
Address**:** RegionalDirectorateofHealthandSocialProtection Marrakech-Safi Morocco.

The high psychological load, the low support of the hierarchy, the working conditions are the main factors of stress among the general practitioners of the Nouacer Province (4).

Stress is a health problem that should not be underestimated. Several studies have shown correlations between, on the one hand, the process of identity development (professional, personal, sexual), a high workload, strong competition, financial difficulties, worries generated by the socio-economic context and, on the other hand, perceived stress in students (8). Lisiecki (8) adds that one third of first year university students suffers from psychological distress according to a survey conducted in Canada in 2004. A group of researchers (9) have shown that stress in students is due to stressors that are specific to student circumstances such as lack of material and financial independence, fear of unemployment, fear of not succeeding and daily living conditions. The majority of students experience stress in the face of an academic challenge (10) and it is a classic reaction to this threatening situation, but too high a level of stress can have consequences on the student's performance (11). Stress among students is a universal problem that closely affects the life and future of students, which has prompted us to approach this complex phenomenon by describing the level of stress among students at the Institut Supérieur des Professions Infirmières et Techniques de Santé de Marrakech.

Objective of the study

This study aims to describe the level of stress in students pursuing a bachelor at the Higher Institute of Nursing and Technical Health Professions (ISPITS) of Marrakech.

Method

This study took place at the Higher Institute of Nursing and Technical Health Professions in Marrakech. The study population consisted of students from all five streams while the accessible population consisted of students from both levels S2 and S6 of the 2018-2019 academic year from 9 different nursing majors. 324 students participated in this study. The choice of S2 (first year) is because this population includes students who have just entered undergraduate studies, the interest is to study their perceptions of stress at a time of transition between two different educational systems. While the choice of S6 (final year) allows us to answer the question related to the stress coping strategies developed by the students at the end of the study course. In this study a census of the entire population was conducted (n=324), and we used a non-probability purposive sampling. Two data collection instruments were used in this study, a questionnaire for undergraduate students at both levels S2, S6, and a scale to measure perceived stress for undergraduate students at both levels S2 and S6. The stress measurement scale that was administered was the (Perceived stress scale PSS) used to measure the perception of stress. Ethical considerations were taken into account to protect welfare and confidentiality of the study participants.

Results

This study involved 324 students from 9 different majors, distributed over two semesters: 214 students (66%) in S2 and 110 (34%) students in S6. The gender distribution is as follows: 247 female students (76%) and 77 male students (24%). 237 students are between 17 and 20 years old (72%), 92 between 21 and 24 (28%). 200 students come from Marrakech (62%), 112 from other regions of Morocco (35%) and 12 students come from abroad (4%). 316 students are single (98%), 5 are married (2%), and 3 are divorced (1%).

- **Status of stress in the study population**

To measure stress, the PSS scale was used to assess the frequency with which life situations are generally perceived as "threatening, i.e., not predictable, uncontrollable, and distressing" (57). The scoring of participants responses to the following categories:

1. Can handle stress (A) = Score below 21. This is a person who knows how to manage stress, who knows how to adapt and for whom there are always solutions.
2. Can generally cope with stress (B) = Score between 21 and 26. While this is generally someone who can handle stress, they cannot handle some situations. A feeling of helplessness that leads to emotional disturbances sometimes drives them. They can overcome this feeling of helplessness by learning change strategies.

3. Life is a perpetual threat (C) = Score greater than 27. Life is a perpetual threat for this person: he/she feels that he/she is undergoing most situations and that he/she cannot do anything but undergo them. This strong feeling of powerlessness linked to their representation of life can make them fall into illness. It is desirable to work on their thought pattern and to change her way of reacting.

Table 1: Frequency and percentage of stress in the total study population

	Frequency	%
Can manage stress (A)	7	**2%**
Can generally copewith stress (B)	52	**16%**
Life is a perpetual threat (C)	265	82%

This table allows us to observe the distribution of perceived stress in the entire study population (S2 and S6). The percentage of students who consider life to be a perpetual threat is 82%, those who know how to cope with stress in general represent 16% of students while only 7% know how to manage their stress. According to Figure 1, 83% of S2 students consider life to be a perpetual threat (C), On the other hand, 16% know how to manage stress in general (B) and only 1% know how to manage stress (A). This percentage increases slightly when moving to S6, as 5% of the students know how to manage their stress (A), the percentage of those who know how to generally cope (B) remains unchanged with 16% of the respondents, while the students who perceive life as a perpetual threat (C) decreases to 79% of the population.

Figure 1: Distribution of perceived stress among students by semester of study

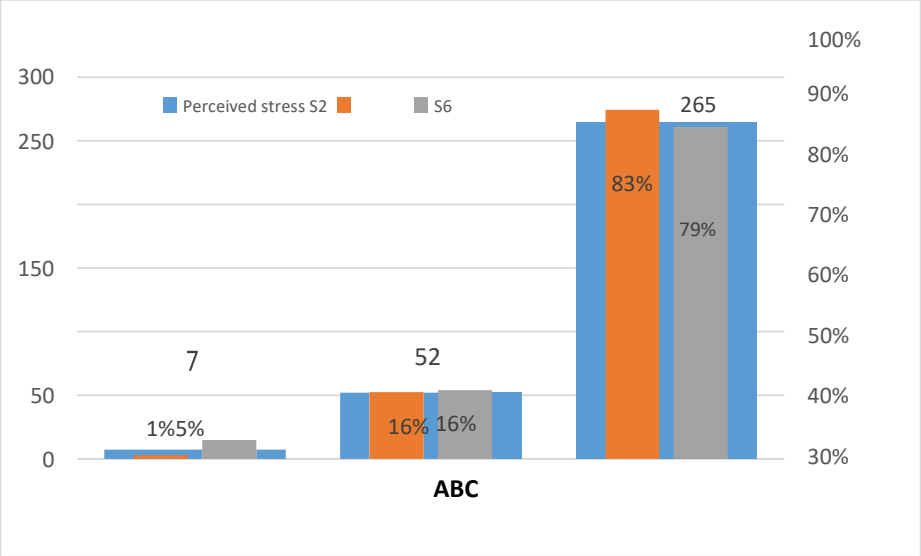

Table III presents perceived stress among students by study major. Nursing majors are characterized by a high percentage of students who view life as a constant threat: 87% of general nurses, 85.7% of emergency and critical care nurses, and 81.8% of psychiatric nurses. Anesthesia and Critical Care students had the lowest percentages, with 65.1% experiencing severe stress. Students in the Family and Community Health Nursing option appear to suffer the most stress, with 94.1% considering life a perpetual threat. The Health Technical track includes 78.9% of Laboratory Technicians for whom life is a perpetual threat and 21.1% who are generally able to cope with stress. 70.8% of Radiology Technician students consider life a threat, 25% are generally able to cope with stress and 4.2% are able to cope with stress. Midwifery is also slightly less valuable than other training, with only 68% of students saying they feel life-threatening, and 23% and 9% more or less knowing how to deal with stress.The re-education and rehabilitation field, composed of ortho- prosthetists, presents the highest figures, since life is a perpetual threat for 100% of them.

Table 2: Frequency and percentage of perceived stress among students by option.

Branch	Study option	Stress Percu	Frequency	Percentage
	Multi-skilled nurse	A	1	**0,9**
		B	13	**12,0**
		C	94	**87,0**
		Total	108	**100,0**
Nursing field	Emergency and Critical Care Nurse	A	0	**0**
		B	6	**14,3**
		C	36	**85,7**
		Total	42	**100,0**
	Nurse in anaesthesia-intensive care	A	1	**2,3**
		B	14	**32,6**
		C	28	**65,1**
		Total	43	**100,0**
	Mental Health Nurse	A	2	**9,1**
		B	2	**9,1**
		C	18	**81,8**
		Total	22	**100,0**
	Family and Community Health Nurse	A	0	**0**
		B	2	**5,9**
		C	32	**94,1**
		Total	34	**100,0**
Midwifery sector	Midwife	A	2	**9,1**
		B	5	**22,7**
		C	15	**68,2**
		Total	22	**100,0**
Technical health sector	Laboratory	B	4	**21,1**
		C	15	**78,9**
		Total	19	**100,0**
	Radiology	A	1	**4,2**
		B	6	**25,0**
		C	17	**70,8**
		Total	24	**100,0**
Rehabilitation branch	Orthoprosthetist	A	0	**0**
		B	0	**0**
		C	10	**100,0**
		Total	**10**	**100,0**

- **Stress management in the study population**

Tobacco use by students (Table XI) is concomitant with very high levels of stress (life is a perpetual threat).Tobacco use was not significantly related (P = 0.97) to students' reported stress levels. After calculating the Chi-square in the male population to determine the correlation between tobacco use and perceived stress, this test wasalsofoundtobe insignificant (P=0.93).

Table 3: Frequency and percentage of perceived stress among students by tobacco use.

Tobacco	Perceived stress	Frequency	Percentage
No	A	7	**4,6**
	B	52	**16,7**
	C	263	**78,7**
	Total	322	**100**
Yes, 1 year	A	0	**0**
	B	0	**0**
	C	1	**100**
	Total	1	**100**
Yes, 6 years	A	0	**0**
	B	0	**0**
	C	1	**100**
	Total	**1**	**100**

Students who spend time on hobbies perceive stress equally to their peers who have no hobbies outside the Institute. The results indicate no statistically significant relationship (P = 0.36) between the two variables (hobbies and stress level).

Discussion

Like other research on the subject (14), our study showed that students at ISPITS Marrakech have very high levels of stress (between 83% for S2 students and 79% for S6 students). These results lead us to question the characteristics of the population and the environmental conditions that favor the installation of stress and influence its level among students of different nursing and health technical professions in Marrakech. The sociological theory of stress (8, 65, 66) proposed that new entrants to the university were more vulnerable because of the transitory nature of this first arrival in these new academic setting. The latter present many changes to which students must adapt. This is confirmed in our context, as Semester 2 students are more stressed than Semester 6 students. However, the correlation is not statistically significant, which corroborates the 1998 edition of the Canadian campus survey (8). This study found no effect of year of enrolment on psychological distress. Our survey was conducted in March, which may explain why students were able to learn to manage their stress with a slight attenuation of the effect of the transition.

However, we need more evidence on this point, such as a survey of first semester student numbers, before we can draw any conclusions. In theory, the various types of extracurricular activities should be the source of socialization and therefore positively influence the mental health of those who practice them; conversely, non-practice would be a source of distress and stress. A study by Lisiecki (8) sometimes observed a positive association between leisure activity and stress, depending on the importance of the activity. Our study found no significant association between time spent in leisure and perceived stress levels. Investigation of these variables should therefore include an assessment of the nature of these activities and their social dynamics. Note that although ISPITS has a student association, its weight is still limited in relation to the population's need for extra-curricular activities.Giving more prerogatives to such associations and encouraging their initiatives could be a protective factor against stress, if they are properly set up and if their planning is easily integrated into the busy schedule of nursing students. Other common strategies used by students to manage stress include smoking. Studies of student nurses in France have concluded that they are more prone to risky behaviours such as smoking, drinking and substance abuse than students in other disciplines (14). In our survey, there was no significant relationship between smoking and perceived stress levels. Only two students reported smoking, so the results cannot be considered and analyzed. Others may have used tobacco, but fear or embarrassment prevented them from reporting it on the questionnaire, especially among female students, who they see as disliked in a conservative culture. Consideration should be given to investigating the relationship between perceived stress and tobacco use and its perception as a coping/protection strategy against stress or as an aggravator of stress.

Conclusion

The present study allows nursing, health technician students and us to appreciate the relevance of studying stress in student populations, specifically. This interest is supported by the results of a study that is part of an attempt to measure stress experienced around the world using a tool developed by Cohen.This tool is a direct measure of perceived stress after the transformation of objective events in a subjective manner by the various cognitive, personal and contextual processes of the individual. This study revealed that the state of stress described by students at ISPITS in Marrakech presents very high levels comparable to those found in similar institutions in Morocco and elsewhere. The results point to differences between students despite the non-significant relationship. These differences may also be due to age and age-related improvements in coping skills, or the time lag between the start of the school year and the completion of the questionnaire, temporarily increasing student burden. Transition from one context to another.Our results lead the way to a questioning of the resources needed to protect against stress in academic settings, resources which, after examining the field, could include a psychological support unit, relaxation areas for students, extracurricular activities, and in general easier access to the various academic, social and other resources.

Abbreviations

ISPITS (Higher Institute of Nursing and Health Technology); S (semester); WHO (World Health Organisation)

Declarations

Ethics approval and consent to participate

The research protocol was approved by the Ethics Committee for Bimedical Research under the Faculty of Medicine and Pharmacy of Marrakech. All study participants signed a consent form before the start of the study.

Consent for publication

You will find in attachments the consents for the publication of the two authors.

Availability of data and material

All the database and material used in this study are available.

We confirm that all methods were performed in accordance with the relevant guidelines and regulations.

If someone wants to request the data from this study, he can contact : hababahanane@gmail.com

Competing interests

All authors declare no competing interest.

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Authors contributions

Hanane HABABA developed the first draft of the manuscript

Leila LAFDILI searched the literature, extracted data, synthesized data

Samia BOUSSAA checked the manuscript; provided essential methodological advice.The authors have read and approved the final manuscript.

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