

## Investigation of High Stress Level Causes among Medical and Dental students in Algeria.

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**BACKGROUNDS AND OBJECTIVE:** Overall, and in all countries, Medicine and dentistry are considered by far the most respected disciplines, the most desired but also the most tiring, stressful and anxious, the rate of headaches, stress and anxiety is clearly high among medical and dental students, however this rate is variable depending on the country, in Algeria, this rate reaches a critical level very widely noticed, the purpose of this research is to determine the major causes of stress among Algerian medical and dental students.

**METHODS AND MATERIALS:** This study was conducted in Algeria between February and June 2021 on several universities that gather medical and dental students from all states of the country, the study included dental students from 1st year to 6th year and medical students from 1st to 7th year of both genders who have experienced during their academic career at least one stressful or even depressing period, the participating students completed an online anonymous questionnaire that consisted of demographic information and probable causes causing anxiety and stress among them.

**RESULTS:** out of 2100 students evaluated, 1321 of them find that the large number of exams and their difficulties, the bad treatment of their teachers are the main cause of stress and sometimes even depression during their studies, 688 students find that the poor conditions of the university residence, the given food, transportation and financial conditions are the main cause of stress, however, only 91 students find the fact that these fields were not their dream specialties but rather a forced choice is the main reason for them to have periods of stress and anxiety during studies.

**DISCUSSIONS AND CONCLUSION:** We can conclude from this study that in Algeria, the academic career itself represents the major cause of stress and anxiety among Algerian medical and dental students and therefore an improvement of the educational system, the evaluation system and the teaching qualifications is extremely necessary, the study and living conditions also are a flagrant reason of anxiety and even depression among medical and dental students and must be radically rehabilitated, it is also important to change the criteria for access to universities so that they are compatible with student's dreams and motivations.

**KEYWORDS:** Algeria, Anxiety, Dentistry, Depression, Exams, Hospitals, Stress, Students, University.

### I. INTRODUCTION:

Stress is considered to be any intrinsic or extrinsic stimulus that elicits a biological response, it is an unpleasant state of emotional arousal that occurs in people who face threatening situations, the environmental and personal factors that cause stress are called stressors.<sup>[1,2,3]</sup> Definitely, even if stress is an inevitable part of every human life, it can no longer be considered as a simple symptom, it can according to its severity, its duration and its type be at the origin even of serious complications, it is proved that the stress lead to several physical and mental problems, chronic excessive stress also promotes cancer and weakens the immune system.<sup>[2]</sup> It is well reported the increase of stress levels in students, related to the hardness of studies, exams, disorganization, lack of sleep and the different difficulties to reach graduation.<sup>[1,4,5]</sup> In particular, stress is becoming widespread among medical and dental students, as these disciplines are considered by far the most demanding, tiring, interesting and competitive, students find themselves most of the time stressed because of exposing to work overload in a Competitive manner with constant pressure of examinations and regular assessment, the complexity of these fields and the competition among themselves, this could lead to decreased life satisfaction and unhealthy behaviors like smoking, physical inactivity and poor diet etc...This is why stress management becomes mandatory, physical support, individualized advice, incentive awards, anxiety management skills education, physical activity incentives and urging enjoying extracurricular activities, practicing yoga and therapies are

considered as great solutions for stress management to avoid as much as possible its side effects whether on mental health or physical problems, to avoid poor academic performance and especially to avoid a direct impact on future students' patients. That while stress is normal in medical and dental students, it is not the case in Algeria, its levels reach a critical and dangerous threshold, it becomes very noticeable in reality, on social media and its consequences are very reported after graduation, during professional career or during residency programs.<sup>[1,3,4,5,6]</sup> The main objective of this research is to try to determine the major causes of stress in Algerian medical and dental schools.

## **II. METHODS AND MATERIALS**

The study was conducted on N= 2100 randomly selected of which 1280 medical students from 1st year to 7th year and 820 dental students from 1st year to 6th year of all the universities in Algeria through an online questionnaire, 1377 of these participants were female and 723 were male, the eligibility criteria consisted of the fact that the student must have already had in his academic career at least one period of intense stress or depression, the student must have passed at least 10 exams in the university which is equivalent to one semester, for a better determination of the causes of stress and anxiety in medical and dental students, proposals are introduced in the questionnaire, the student is also free to add other reasons provided that they are not personal, the questionnaire also included questions about the intensity of stress according to the different academic years and the different periods during the year, the participating students assigned an approximate stress value out of 100%. The survey was conducted between February and June 2021 in the period of evaluation and exams in medical and dental schools, all effects of the Covid-19 pandemic on mental health during this period were excluded from the study results, Data were carefully collected and analyzed with Google form.

## **III. RESULTS:**

Out of a population of N= 2100 Algerian medical and dental students who answered the questionnaire, 62.9% (1321) report that the difficulty of the evaluation exams, their complications, their exaggerated numbers in a limited period of time and the mistreatment of their professors in hospitals or during teaching are the major causes of excessive stress, anxiety and even depression during their study careers, (688) students of the study population which represents a percentage of 32.7% find financial conditions, miserable conditions including public transportation to the University and hospitals, poor quality of university and residential canteens and the high budget for the purchase of books, materials and necessities of studies and hospital are the main reason for their stress and overthinking, however, only 4.3% (91) of students find that the fact of studying these specialties forced either by their parents, entourage or even their obliged choice is the main reason of depression and continuous stress during their academic careers, this forced choice at the expense of their dream specialties is because of a more or less defective system of access to the University, because of the good reputation of the medical field and the fear of unemployment after choosing other specialties.

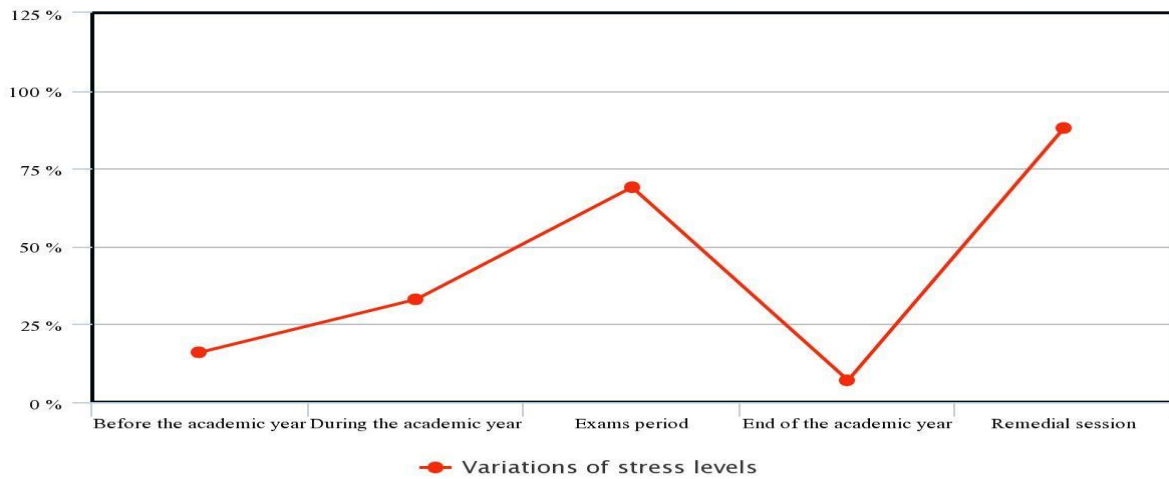
About the approximate values of stress intensity according to the academic year, the participating students agreed that the beginning of the clinical cycle which corresponds to the 4th year is the most exhausting year where stress reaches critical levels, and that the internship which corresponds to the last year is the least stressful, however, during the internship year for medical students, stress levels are higher than among dental students due to the preparation for the residency exam since the specialty in Algeria becomes almost mandatory. Regarding the different periods of the academic year, results reported that the end of the academic year is the least stressful period, but however, stress and anxiety still exist because of overthinking about the next academic years and professional life, the participants reported that the period of exams is the most stressful, those who did not pass their exams and have been addressed to the remedial session confirmed that the intensity of stress during this period is unbearable.

## **IV. DISCUSSION**

Recently, special attention has been given to the management of excessive and chronic stress in medical and dental students, which is not only considered demoralizing and highly contagious among students, but also a blocker of ambitions, altering the student's sleep and performance, distracting them from healthy lifestyles and subsequently impacting their behaviors and thus impacting their patients.<sup>[4]</sup> It is known that stress levels are higher in third world populations, similarly, medical and dental students in developing countries are more likely to be stressed, to experience longer periods of stress with higher intensities where chronic difficulties and poor financial conditions are the most commonly found.<sup>[7]</sup> In Algeria, high levels of stress, anxiety and depression have become evident, and although the reasons are numerous and varied, the difficulty of the university career seems to be the main cause, it is represented by the difficulty of the passing exams, the evaluation system which implies a very high number of exams during very limited periods of time which implies a heavy and pressing preparation,<sup>[8]</sup> the dreadful number of students who repeat the year, the mistreatment that students suffer from their professors, whether in hospitals in front of patients or at the university, all this pushes the students to

manifest periods of intense and chronic stress and sometimes more serious manifestations, out of 22 participating students, these reasons caused a depression for which they consulted psychiatrist physicians. The approximate determination of stress intensity on a 100% scale among these students in relation to their academic cycle reported high levels of stress during their exam periods, than it reaches its minimum level after the end of the academic year, but for the students who did not pass the year and were addressed to remedial session, the stress levels become very critical and even severe, these students report that they were obliged to drop everything in order to prepare and save their year (Fig.1).

Figure 1: The approximately level of stress among Medical and Dental students during the different stations of the academic year



However, stress remains also variable according to the different clinical, paraclinical or internships cycles among these students, It reaches high intensities after the first direct contact with patients from the 4th year which corresponds to the start of the clinical cycle, the intensities and durations of stress and anxiety decrease when arriving at the last year which corresponds to the internship year, this because the students will not pass any more exams and their trainings are completely practical, however among medical students, the levels of stress remain higher than among dental students because of the preparation for the residency exam for access to the specialty, specializations in Algeria is considered unfortunately as almost mandatory because of the very widespread unemployment among general practitioners and the huge difference in the level of education. (Fig 2 and 3)

Figure 2: Approximately levels of Stress among Algerian dental students according to the curriculum academic year.

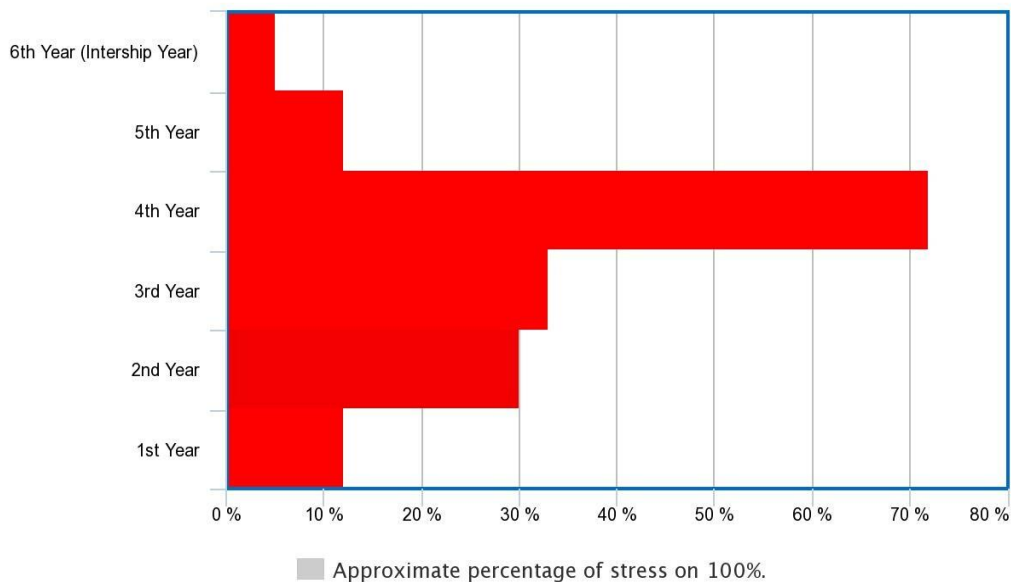
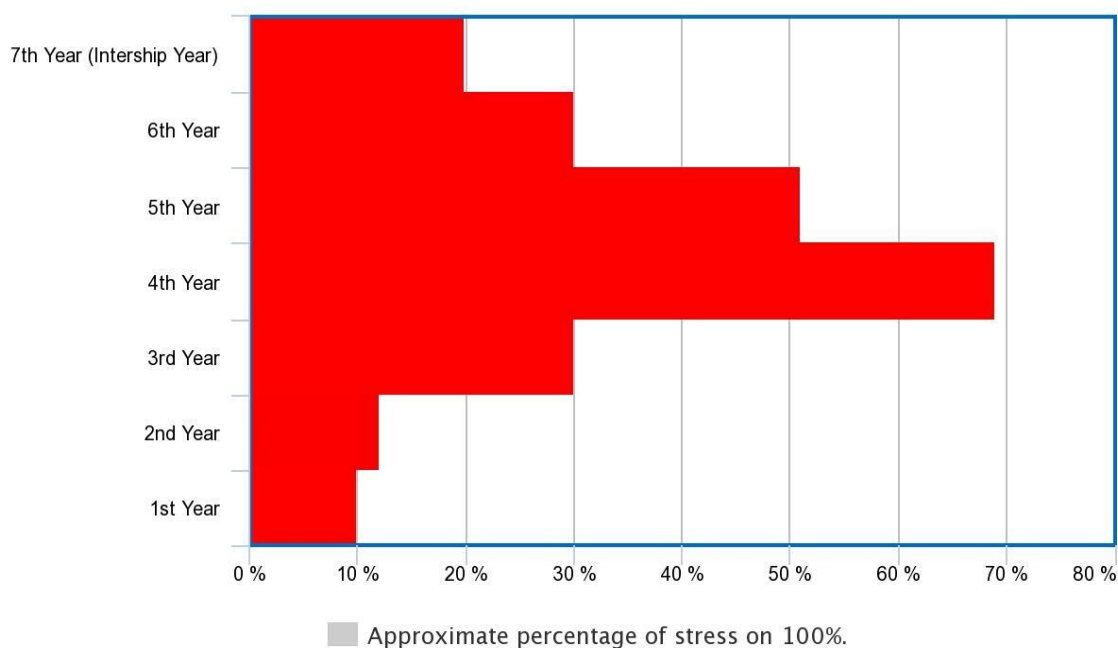


Figure 3: Approximately levels of Stress among Algerian Medical students according to the curriculum academic year.



Secondary, for a large portion of this study population, students find that their limited financial situations, the poor conditions of public transportation, the quality of the university residence and the deterioration of its services, the quality of the food given, the expensive prices of books and materials for their studies present the major source of overthinking and stress, some of them find a job to make money however this increases their stress levels. Finally, a minor proportion of the study population finds that the main reason for their chronic stress is simply being involved into the wrong specialty, it can be the forced choice of their parents or their entourage and it is essentially because of great respect of medicine as a discipline but it can also be their personal choice forced because of the high unemployment rate in other fields or an insufficient score on their baccalaureate exam which makes impossible the access to other areas like the higher school of informatics. In Algeria, to minimize the rate of stress among medical and dental students and thus prevent its mental and physical problems, prevent the alteration of the performance of students and the great impact on their professional career and even on patients, it is not enough to offer moral support and recreational programs or incentive prizes, it is imperative to revise and correct the whole educational and evaluation system, to improve studies conditions even by privatization universities and to ensure a respectful relationship between teachers and students.<sup>[1,8,9,10,11]</sup>

## V. CONCLUSION

Although stress, anxiety and depression are very common emotions among medical and dental students, the critical and obvious rise of these symptoms in Algeria implies an urgent improvement of the study conditions, the evaluation system and the treatment of professors towards students, but also implies the providing of attention, moral support, and personalized advice to reduce as much as possible these emotional disorders that can, over a long period of time, alter the quality of life, create unhealthy behaviors and promote several serious mental health and medical problems.

**Financial support & sponsorship:** None.

**Conflict of interest:** None to declare.

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