

Student Stress during Pre-Clinical Practical Activities (PPAs): Descriptive Study among 4th Year Dental Students

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Received: December 28, 2021; **Published:** January 31, 2022

Abstract

Introduction: Studies in dentistry seem to be one of the most stressful fields. Stress can affect physical and moral well-being of students.

Objective: The objectives of this study were to evaluate the stressors among undergraduate dental students during their pre-clinical practical activities (PPAs) and suggest some recommendations.

Material and Method: To achieve these objectives, we carried out an epidemiological, descriptive and quantitative cross-sectional study using an online questionnaire (Microsoft Forms) due to the health situation caused by covid-19, imposing the social distancing. The survey was conducted during the month of August 2020, among the 4th year students of the Faculty of Dentistry of Casablanca, enrolled during the academic year 2019 - 2020.

Results: Of the 123 4th year students, 111 completed the questionnaire correctly. The majority of respondents were female, with a proportion of 67.6%.

The average student stress score was 21.30. Students mainly complained about equipment issues (82.9%) and the supervision (68,5%). Restorative Dentistry and Endodontics PPAs were rated as the most stressful (70.5%) in the third year and the Fixed Prosthodontics (64.2%) in the second year.

Discussion: Students' perceived stress during practical training was moderate, 21.30.

The students complained about the poor quality of the material, which can be explained by lack of maintenance.

Supervision is a major stressor; supervisors sometimes give contradictory recommendations. To overcome this problem, instructions must be given to all the staff by the head doctor responsible for the session.

Overall, the PPAs of fixed prosthodontics and the restorative dentistry and endodontics were considered very stressful because the procedures required of the students are meticulous, and difficult to master the first time.

Conclusion: Students express very high levels of stress during the PPAs. Various stressors were identified: material, demonstration and supervision.

Alleviating this student stress is essential in order to provide more favorable conditions for learning and practice. Also, the future dentists must learn to manage stress, to be ready to exercise one of the most stressful professions.

Keywords: *Stress; Pre-Clinical Practical Activities; Undergraduate Dental Students; Mental and Physical Health*

Abbreviations

PPAs: Pre-Clinical Practical Activities; MVPS: Moroccan Version of the Perceived Stress Scale; PSS: Perceived Stress Scale; RDE: Restorative Dentistry and Endodontics; FP: Fixed Prosthodontics; PO: Pediatric Odontology; RP: Removable Prosthodontics; DA: Dental Anatomy; OCC: Occlusodontics; DFO: Dentofacial Orthopedics

Introduction

“Stress” is a response of the body to physiological or psychological stressors, as well as to emotions (pleasant or unpleasant) requiring adaptation [1].

Dental training is associated with many sources of stress. Some are common to all students; others are specific to the field of dentistry [2].

Pre-clinical practical activities (PPAs) in dental training allow the student to apply what he has learned in the theoretical courses. Nevertheless, it has been well established that students experience considerable levels of stress during these practical activities. In the absence of de-stressing measures, the accumulation of stress felt by students can have a negative impact on their ability to learn, their health and consequently on their quality of life [2,3]. In this context, a better understanding of students’ stress factors is necessary, and will allow teaching and supervisory staff to create favorable learning conditions.

Objectives of the Study

The objectives of this study are to:

- Evaluate the stressors of students during their preclinical training.
- Suggest solutions.

Material and Method

To achieve these objectives, we carried out an epidemiological, descriptive and quantitative cross-sectional study using an online questionnaire (Microsoft Forms) due to the health situation caused by covid-19, imposing the social distancing. The survey was conducted

during the month of August 2020, among the 4th year students of the Faculty of Dentistry of Casablanca, enrolled during the academic year 2019 - 2020.

The institution's ethics committee approved the research protocol. The students were fully informed of the objectives of the study and of their right to refuse to participate. Our study was conducted with anonymity and confidentiality. In order to collect the necessary data for our work we established an anonymous online questionnaire with 24 questions grouped under 5 main sections as follows:

1. **Socio-demographic characteristics of the students:** gender, age, social status, socio-economic level, main residence and mode of transport to the faculty.
2. **Perception and characterization of stress in students:** The purpose of this section is to assess the psychological state of students, using the Moroccan version of the Perceived Stress Scale (MVPS), translated from the PSS (Perceived Stress Scale). It allows us to measure the importance with which situations in life are perceived as unpredictable, uncontrollable and painful. The fact that this scale is in Moroccan dialect, helps the student to be more precise and specific in his answers.

It is composed of two parts; the first one includes six questions measuring the perception of stress, while the second one includes four questions measuring the adaptation to stress [4].

Students were asked to rate how often in the past month they encountered certain stressful situations.

The answers were given on a 5-point Likert scale: For questions 1, 2, 3, 6, 8, 9 et 10: ("never - نَرَمَّحْ = 0, "almost never - أَبِيرِقْتْ = 1, "sometimes - ضَعَبْ تَارْمَلْ = 2, "fairly often - فَارْبْ تَارْمَلْ = 3, et "very often - أَمِيَادْ أَبِيرِقْتْ = 4).

While the four positively stated items 4, 5, 7 and 8, which used the reverse notation, have been recoded (0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0).

The total perceived stress score is the sum of the points with a range of 0 to 40 points.

The higher the score, the greater the perceived stress.

Scores from 0 to 13 correspond to a low level of stress.

Scores ranging from 14 to 26 correspond to moderate stress.

Scores ranging from 27 to 40 correspond to high perceived stress.

Finally, the average score of all students is calculated [4].

3. **Identification of sources of stress during PPAs:** Equipment and materials; Modalities of demonstrations; Supervision and course of session.
4. **Stress level in PPAs.**
5. **Solutions:** Student suggestions for improving the way the PPAs are carried out.

Data collection was carried out using the Microsoft Forms platform. Data entry was performed using EXCEL software. Statistical analysis was performed using IBM SPSS software.

Results

Socio-demographic characteristics of the students

Of the 123 4th year students, 111 completed the questionnaire correctly. The majority of respondents were female, with a proportion of 67.6%. The average age of the students is 21.9 years, with a minimum age of 20 and a maximum of 24 years. They are mostly single (97.2%). 91% of students belong to the middle social class. 49% of them live with their parents, while 55.9% walk to school (Table 1).

Variables	Headcount	Percentages %
Gender		
Female	75	67,6
Male	36	32,4
Age		
20	1	0,9
21	24	21,6
22	67	60,4
23	13	11,7
24	2	1,8
No Answer	4	3,6
Marital status		
Single	106	97,2
Married	3	2,8
Divorced	0	0
Socio-economic level		
Medium	101	91
Low	6	5,4
High	4	3,6
Main place of residence for studies		
Parental housing	54	48,6
Personal rental	39	35,1
University accommodation	18	16,2
Main mode of transport to reach the faculty		
Walking	62	55,9
Tram	26	23,4
Car	11	9,9
Bus	9	8,1
Train	3	2,7

Table 1: Socio-demographic characteristics of the study population.

Perception and characterization of stress among students

Student stress and health

78.2% of students consider themselves to be stressed.

The manifestations of stress mentioned by the students in this survey are: sleep disorders (54.7%), eating disorders (54.7%), concentration difficulties (53.7%), psychological disorders (46.3%), digestive disorders (32.6%) and cardiac disorders (21.1%).

Moroccan version of the perceived stress scale

Student responses were grouped in table 2. Overall, students' perceived stress was moderate, 21.30; with a mean score of 20.97 for male and 21.44 for female.

امیاد ابیرقت		د فازب تارمل		ضعب تارمل		ابیرقت فرمتح		فرمتح	
Very often		Fairly often		Some-times		Almost never		Never	
N	%	N	%	N	%	N	%	N	%
6	5,8	38	36,9	45	43,7	9	8,7	5	4,9
1. In the last month, how often have you been upset because of something that happened unexpectedly? هل فت ع ل ع ث ع ق و ه ج ا ع ي ش ب ا ب س ب ت ق ل ق ت فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت									
6	5,8	34	33	41	39,8	18	17,5	4	3,9
2. In the last month, how often have you felt that you were unable to control the important things in your life? م م ه م ل ا ح ي ا و خ ل ا ف م ك ع ث ت ش ر ذ ا ق ا م ل ف س ا ر ب ت ي س خ فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت هل فت ا ي خ ف ت									
5	4,9	44	42,7	43	41,7	8	7,8	3	2,9
3. In the last month, how often have you felt nervous and "stressed"? ز ت و ت م ل و ب ص ع م ل ف س ا ر ت ي س خ فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت									
4	3,9	24	23,3	60	58,3	9	8,7	6	5,8
4. In the last month, how often have you felt confident about your ability to handle your personal problems? ل ن ح ت / هل ا ي ذ ل ك ل ا ش ن م ل ا ع م ل م ا ع ث ز ذ ا ق ل ف ر ا ت ي س خ فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت هل ا ي ذ ل ك ل ا ش ن م ل ا									
0	0	13	12,6	65	63,1	17	16,5	8	7,8
5. In the last month, how often have you felt that things were going your way? ي غ ا ب ا ت ن ا م ك ه ي د ا غ ر و م ا ل ا ي ل ب ت ي س خ فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت									
3	2,9	23	22,5	59	57,8	14	13,7	3	2,9
6. In the last month, how often have you found that you could not cope with all the things that you had to do? ل ك ا ع م ل م ا ع ث ت / ه ج ا و ت ش ر ذ ا ق ا م ل ف س ا ر ت ي ق ل فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت ز ي د ل ف ص ن ا ح ي ل ن ح ي ا و خ ل									
1	1	18	17,5	60	58,3	18	17,5	6	5,8
7. In the last month, how often have you been able to control irritations in your life? ح ي ا و خ ل ا ف م ك ع ث ت ز ذ ا ق ل ف س ا ر ت ي ق ل فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت هل فت ا ي خ ف ت ل و ب ص ع ي ك ي ل									
0	0	21	20,6	67	65,7	11	10,8	3	2,9
8. In the last month, how often have you felt that you were on top of things? هل ا ب ي ت ق ي ل ح ي ا و خ ل ا ف ح ا ن ل ف ر ا ت ي س خ فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت									
4	3,9	33	32,0	49	47,6	14	13,6	3	2,9
9. In the last month, how often have you been angered because of things that were outside of your control? ت ت ش ن ي ت ر ذ ق ا م و ع ق و ح ي ا و ح ب ا ب س ب ت ب ص ع فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت م ه ي ف م ك ح									
8	7,2	20	19,4	47	45,6	23	22,3	5	4,9
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? ي ت ح ف ا ز ب و ذ ي ز ي ك ت ا ب و ع ص ل ا ب ت ي س خ فر م ن م ل ا ح ش ن ، ز ا د ي ل ز م ش ل ا ذ ا ه ف ت م ه ي ل ع ب ل ع ث ش ن ي ت ر ذ ق ا م									

Table 2: The Moroccan version of the perceived stress scale (MVPS).

Causes of stress related to personal and social life

73% of students believe that PPAs are not the only source of stress. Among the sources confirmed by students: exam overload (84.7%), lack of rest time between semesters (75.3%), financial problems and debts (35.3%), family problems (29.4%) and health problems (20%) (Table 3).

Variables	Headcount	Percentage %
Exam overload	72	84,7
Lack of rest time between semesters	64	75,3
Financial problems and debts	30	35,3
Family problems	25	29,4
Health problems	17	20

Table 3: Stressors related to personal and social life.

The different ways students adopt to cope with stress:

The different means adopted by students to cope with stress are cited as follows:

- Talk to colleagues about difficulties (51%).
- Listen to music (51%).
- Stay alone (37.3%).
- Practice sport (33.3%).
- Religious practices (29.4%).
- Traveling (24.5%).
- Consume anxiolytics and antidepressants (23.5%).
- Spend more time with the family (20.6%).
- Smoking and drugs (17.6%).

Sources of stress during PPAs

We have identified a multitude of factors likely to stress students in the different PPAs (Table 4).

Variables	Headcount	Percentage %
Equipment and Materials	92	82,9
Insufficient equipment	65	73
Financial difficulty in acquiring the necessary equipment	52	58,4
Poor quality of the equipment	38	42,7
Insufficient materials	35	39,3
Démonstration	70	63,1
One demonstration for too many students	52	76,4
Lack of demonstrations for certain acts	44	64,7
Lack of time reserved for demonstration	31	45,6
Supervision	76	68,5
Contradictory judgments of supervisors	53	68,9
Attitude of the supervisors	44	57,1
Insufficient number of supervisors	33	42,9
Supervision not provided during the entire session	12	15,6
Session	64	57,7
Difficulty performing the act for the first time	46	71,9
Insufficient time reserved for performing the act	42	65,6
Learning gestural and technical precision during each session	13	20,3

Table 4: Distribution of stressors during PPAs.

Stress level in PPAs

The stress level of the students within the PPAs is reported in the table (Table 5).

	Non-stressful		Little stressful		Stressful		Very stressful	
	Headcount	%	Headcount	%	Headcount	%	Headcount	%
2nd year								
Fixed Prosthodontics (FP)	9	9,5	25	26,3	47	49,5	14	14,7
Pediatric Odontology (PO)	5	5,2	37	38,5	38	39,6	16	16,7
Restorative Dentistry and Endodontics (RDE)	3	3,1	43	44,8	34	35,4	16	16,7
Removable Prosthodontics (RP)	18	18,8	49	51	23	24	6	6,3
Dental Anatomy (DA)	14	14,7	54	56,8	20	21,1	7	7,4
3rd year								
Restorative Dentistry and Endodontics	6	6,3	22	23,2	49	51,6	18	18,9
Pediatric Odontology	4	4,2	29	30,5	40	42,1	22	23,2
Removable Prosthodontics	10	10,4	25	26,0	33	34,4	28	29,2
fixed Prosthodontics	6	6,5	27	29,0	35	37,6	25	26,9
Occlusodontics (OCC)	9	9,7	31	33,3	31	33,3	22	23,7
Dentofacial Orthopedics (DFO)	14	14,9	39	41,5	34	36,2	7	7,4

Table 5: Stress level in PPAs.

Student suggestions for improving the quality of PPAs

A classification has been made of the students' suggestions, going from the most cited to the least cited.

Regarding supervisors:

- "Show more understanding and empathy towards the students"
- "Give constructive criticism"
- "Improve the attitude of supervisors"
- "Be more attentive"
- "Be more cooperative and less indifferent".

Regarding the material:

- "Provide the necessary materials and equipment".

Regarding the duration of the session:

- "Give more time to PPAs sessions"
- "Give students more time to carry out the acts".

Discussion

Of the 123 students, 111 responded to the questionnaire. We obtained a high response rate (90.2%), largely due to the anonymity of the questionnaire which allowed the students to respond with transparency and sincerity.

Demographic characteristics

Gender

Several studies have focused on the relationship between gender and the perception of stress in dental training. Our study revealed that female students suffer from this stress more than male. In fact, 81.3% of female students consider themselves stressed against 66.6% for male students.

The results cited in the literature are contradictory in this regard.

A study of 520 students at the University of Jordan conducted by Abughazaleh, *et al.* in 2000, aimed at assessing the level of psychological stress as well as the perceived sources of stress in these students, also noted that women are more susceptible to stress (73%) than men (63%) [5].

On the other hand, some studies have mentioned that men are more stressed than women. This is the case with the study conducted in India in 2002 by Acharya to determine stressors in dental students, at Bapuji dental college with 256 students [6].

For other authors, stress in dental students is not influenced by gender, but women express more their stress [7,8].

Marital status

Married dental students were found to be more stressed than singles in Saudi Arabia [9].

However, a study of dental students in Keran, Iran did not show a significant difference between the stress rates of married and unmarried students [10], this can be explained by the responsibilities of the married couple in some societies.

Socio-economic level

In recent years, numerous publications had shown that stress can be related to socio-economic level [11]. Indeed, Roberts et al. carried out a survey of 360 British students which showed that poorer mental health was related to longer working hours outside the university and difficulty in paying bills [12].

Another survey of 351 students at a UK university confirmed that financial difficulties can increase British students' levels of anxiety and depression and then their academic performance [13].

Perception and characterization of stress in students

Student stress and health

Stress for some can be relatively positive, as it allows the student to be motivated. However, for others, it can be particularly harmful, and can be the source of several symptoms.

The most frequent symptoms are sleep disorders (54.7%), eating disorders (54.7%) and concentration difficulties (53.7%).

Sleep disorders: A study in Saveetha Dental College and Hospital, Saveetha University, Chennai has shown that dental students in general have poor sleep quality [14].

Eating disorders: There are three types of eating disorders: anorexia nervosa, bulimia nervosa and binge eating disorder. The National Eating Disorder Association describes anorexia as a self-starvation technique to lose weight due to an individual's distorted perception of their body image. Bulimia nervosa involves eating large amounts of food and then purging or using laxatives to get rid of the calories. Binge eating is distinguished from bulimia by the lack of weight control and therefore the absence of vomiting, laxatives or excessive sports practice. All eating disorders are serious and can be viewed in the extreme as potentially life-threatening diseases that are more common in society than most people realize [15].

A study of students at a university in the United States showed that 21% of students reported having an appetite less than usual and 23% of students experienced an increase in appetite [16].

Concentration difficulties: A study of students at the Faculty of Dentistry in Nancy showed that 17.5% suffer from concentration problems, compared to 53.7% in our sample [2].

All sources of stress, their psychological and physical manifestations, can strongly influence the student's performance.

Moroccan version of the perceived stress scale

Overall the perceived stress of the students is moderate: 20.30, with a mean score of 20.97 for male and 21.44 for female. Our results are close to that found in the study conducted by Bourzgui, *et al.* in the Faculty of Dentistry of Casablanca in 2019 where the score was 22.5 [17].

Nevertheless, the mean PSS-10 score among dental students in the study conducted in Russia 17.4 was much lower than that reported in our study. However, our results remain relatively close to those reported in Romania 20.6 and Malaysia 21.7 [18].

Causes of stress related to personal and social life

Social and personal life is a source of stress for 73% of students.

Students complained about the overload of exams and the lack of rest time between the two semesters. Indeed, in his study, Bourzgui reported a significant increase in perceived stress from 19.17 outside the exam period to 22.85 during the exam period [17].

The study by Pohlmann, Jonas and Harzer including the three faculties of dentistry in two European countries (Germany and Switzerland), found that the lack of relaxation and leisure time was the most stressful factor [3]. In Saudi Arabia, the percentage of students suffering from lack of relaxation time (69.4%) is close to that found in our study (75.3%) [19].

Financial problems (35.3%) are not a major source of stress, which supports the studies conducted in Jordan [5] and Greece [20]. This is explained by the fact that students receive free tuition and that parents continue to finance their children's education [5]. However, in countries where students finance their own education, such as Canada or the USA, financial problems are a real stressor [21].

Health problems (20%) are also a small source of stress, which is consistent with the study conducted in India [6].

The different ways students adopt to cope with stress

Leisure activities, sports activities and support from family and friends were mentioned by the majority of students and are indicative of good stress management.

Indeed, communication and expression of feelings of anxiety and worry, allows the individual to externalize all the negative energy.

Music has been one of the most widely adopted means of stress management among students. An American study [22] tested the impact of music therapy on 75 nursing students, and found that after 6 sessions, burnout decreased and mood improved.

Studies showed that physical activity has beneficial effects on health, notably a reduction in anxiety and depressive disorders [23].

While some of the strategies adopted by students, to manage stress, can be positive, others can be risky, such as drug use or medication.

In the literature, some solutions have been recommended to cope with stress in the healthiest way possible:

- **Sleep:** Stress influences sleep which, once disturbed, will increase stress. This can become a vicious circle. Thus, cognitive and behavioral therapies through a non-medicinal approach can be proposed [24].
- **Combating risky behaviors and addictions:** Addictive practices, from smoking to drugs, constitute a risk to health, and the subject can even affect his environment afterwards [24].

- **A balanced diet:** Which provides all the nutrients in required amounts and proper proportions [24].
- **Religion:** It has an influence on the emotional state and reduces stress [24].
- **Other solutions:** Relaxation, meditation, yoga, acupuncture, music therapy, social support, communication, massage and physical therapy can also be very beneficial [24].

Nevertheless, before thinking about stress management, it is essential to teach the student how to face the stressor in the first place. Coping is the set of actions and efforts developed to manage and tolerate the event as well as its consequences at the somatic and psychic level [25].

Lazarus and Folkman [25,26] have identified three types of strategies:

- **Problem-focused coping:** Which includes efforts made by the individual to control or modify the stressful situation. This coping could lead to a better adaptation to academic work.
- **Emotion-focused coping:** It regulates the emotions induced by the stressful event, by for example, avoiding thinking about the situation. This type of coping seems to be effective in the short term but not in the long term with the appearance of a depressive state, physical symptoms and eating disorders.
- **Coping centered on social support:** It consists of obtaining the sympathy and help of others [25,26].

Sources of stress during PPAs

Equipment and materials

This parameter was rated as a stressor by 82.9% of students. Especially in the PPAs of RDE (45.7%), and Fixed Prosthodontic (43.5%). Indeed, the good management of time and the efficiency of the procedures depend a lot on the state and availability of the material.

According to the students, the lack of equipment was the major stressor for the students (73%). We noted the same problem when comparing our results with those of a study conducted in Nancy where 71.6% of the students noted a lack of equipment during PPAs [2].

The financial difficulty of obtaining the necessary material also remains one of the most stressful factors (58.4%).

42.7% of students complained about the poor quality of the material. This can be explained by the lack of maintenance.

The faculty could address this problem by providing more equipment to students and ensuring ongoing maintenance.

Demonstrations

63.1% of students complain about the demonstration procedures. Especially in the Restorative Dentistry and Endodontics and Fixed Prosthodontics PPAs, according to the students, this is due to the insufficient number of supervisors.

Projecting educational videos would be a good alternative to demonstrations.

Supervision

Supervision is a very important stressor for 68.5% of students, especially in the PPAs of Pediatric Odontology and Fixed Prosthodontics.

Supervisors sometimes give contradictory recommendations. This contradiction is a source of stress for the students. The study in Canada noted that this element is the most stressful of all the other factors. Almost 73% of students reported it to be a moderately or very stressful factor [7]. This may be related to the individual perception of each supervisor and his personal experience [7]. Explanations and instructions must be given to all supervising staff by the head doctor responsible in order to avoid any contradictions. A supervisor should always be responsible for the same group of students.

The attitude of supervisors is also one of the main sources of stress for 57.1% of students who complained of humiliating remarks from some supervisors. Having a positive attitude towards students must be a priority.

Session

For 57.7% of students, the PPAs session is a stressful element. This can be explained by the fact that some procedures require a manual dexterity that is often difficult to acquire in the first few sessions.

For 65.6% of the students, the duration of the session is insufficient. Nevertheless, Time management is a stressful part of the dental profession, despite years of experience, as testified by the dentists of Lorraine and Bas-Rhin [27].

Optional workshops where the student could develop his skills would be very interesting.

Stress level in PPAs

For 2nd year students, the pre-clinical practical activities of Fixed Prosthodontics were considered by the majority of students to be stressful to very stressful followed by Pediatric Odontology and Restorative Dentistry and Endodontics. Removable Prosthodontics and Dental Anatomy did not seem to generate any stress. However, in the 3rd year it is the practical activities of RDE that comes in 1st position, followed by PO and RP. The least stressful PPAs were OCC and DFO.

We notice a difference between the 2nd and 3rd year which can be explained by a difference in difficulty and requirements from one year to the next. For example, in the PPAs of RDE, students move from preparations on FRASACO teeth to endodontic treatment on natural teeth under conditions similar to clinical conditions, such as indirect vision and correct ergonomics.

Overall, the PPAs of FP and the RDE were considered very stressful. The procedures required of the students are meticulous, with criteria that are difficult to master the first time. They require perseverance on the part of students and patience on the part of supervisors. Students in Germany also consider the practical activities of endodontics and prosthetics as the most stressful [3].

Recommendations

It is important to help students reduce their sources of stress and help them develop appropriate coping strategies.

Reduce stressors

- Provide sufficient and high quality equipment for students.
- Permanently maintain the equipment to avoid frequent breakdowns.
- Recruiting more teachers and supervisors.
- Training in pedagogy for all supervisors.

- Plan more focused; more interactive and shorter presentations.
- Produce downloadable supports and demonstrations (e-learning).
- Increase the number and duration of sessions.

Helping students cope with stress

- Listening effectively to students: Schedule regular meetings between student representatives, the faculty director and teachers.
- Schedule courses on stress management.
- Organize practical relaxation and stress management workshops.
- Psychological assistance: The psychologist could detect psychological disorders and propose help modalities.
- Extra-curricular activities: trips, cultural events...

Conclusion

Students express very high levels of stress during the PPAs. Various stressors were identified: material, demonstration and supervision.

Alleviating this student stress is essential in order to provide more favorable conditions for learning and practice. Also, the future dentists must learn to manage stress, to be ready to exercise one of the most stressful professions.

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