

THEORETICAL AND PRACTICAL CONSIDERATIONS REGARDING WORK CAPACITY ENHANCEMENT IN THE DENTAL TECHNIQUE LABORATORY

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Abstract: The activity performed by the dental technician is very comprehensive and complex. It is mainly aimed at creating, by different methods, fixed or mobile prosthetic restorations. Because of the extremely varied tasks, dental technicians as well as the clinical staff have to carry out, they are overworked. Moreover, they have to cope with both physical and especially mental workload given that, for most professionals, the 8-hour workday is just a memory. In this context, a dramatic decrease in the dental laboratory personnel work capacity has been noticed. Thus, in the present paper, we attempt to bring several well documented arguments to public attention related to some very simple methods that can be employed to enhance work capacity in the dental laboratory.

INTRODUCTION

Following the study of the literature in the field of risk assessment for work related stress, three types of stress are noticed: physical stress, mental stress and complex stress. However, in practice, jobs are rarely classified according to these criteria as the workplace reality is much more complex than theoretical studies, meaning that there are more and more jobs in which several components of the above-mentioned types of stress are present. The job of a dental laboratory technician is an example in this regard, as the three types of work related stress are intertwined.(1-5)

General data:

Before presenting the statistical study conducted by us, we try to clarify some of the notions mentioned throughout the study and even in the title of the paper.

Thus, through work capacity, we understand the ability of an individual to perform an activity for a long period of time without compromising own health. Work capacity (in the dental laboratory including) is highly dependent on the way in which the individual (in our case, the dental technician) is able to integrate in the professional activity as well as on the factors that govern this process, as follows:(1-6)

- anatomo-physiological (constitution and organic and functional structure, gender, age, health status etc.);
- psychological (work motivation, emotions, aptitudes etc.);
- psychosocial (interpersonal relationships, cultural and professional background, moral and material incentives etc.);
- work environment (activity organisation, technology, risk factors etc.);
- acquired characteristics (among which the most important ones are exercise and training);
- adaptation to work, work duration, pace and arrangements;
- measures to promote sanogenesis etc.

PURPOSE

In general, work capacity is also influenced by some concrete and specific aspects of work organisation such as the work duration, pace and arrangements.(1-6) Thus, more and

more studies have demonstrated over time that the employee performance decreases directly proportional to increasing work duration. Based on such well documented theories, the 8-hour workday is established as the optimal work time and stipulated by laws accordingly.(1-6) Working for more hours daily definitely results in fatigue and poor performance and, over time, accidents and morbid conditions can also occur.(1-6)

In general, there are 2 types of fatigue: physical and general. Most authors consider fatigue as a process that regulates an activity: the fatigue-specific sensations are usually a warning sign.(1-6) Overcoming transient fatigue can result in the chronic fatigue syndrome, characterised by altered body functions that cannot be recovered by rest or sleep. The prolonged fatigue, defined in the literature as “exhaustion”, definitely leads to a drastic decrease in the work capacity, which can dramatically affect the productivity of the company, the dental laboratory in our case.(1-6)

Given that the dental technician profession is a job in which each and every practitioner, having many tasks to perform to make fixed and mobile prosthetic restorations in a very short period of time, has to spend even 12 hours at the workbench, errors can definitely occur as far as the quality and accuracy of prosthetic parts are concerned.

Thus, in the present paper, considering the arguments mentioned above, we attempt to find and provide, based on a questionnaire, some simple, reliable and feasible solutions to enhance not only the work capacity but also the quality of the process.

MATERIALS AND METHODS

To conduct the study, the questionnaire method was employed. The questionnaire used in this paper is an abridged and simplified version of the initial questionnaire that consisted of 30 questions/items. The 10 questions selected from the initial questionnaire can provide an overview of some simple solutions to enhance both the work capacity and the work process in the dental technique laboratory.(1-6) The questionnaire (both extended and abridged versions) was administered to 143

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subjects. 55 of them are students of “Carol Davila” University of Medicine and Pharmacy in București, Faculty of Midwifery and Nursing, Dental Technology specialty (38.46%), and 88 subjects are dental technicians that work in București (61.54%) (figure no. 1).

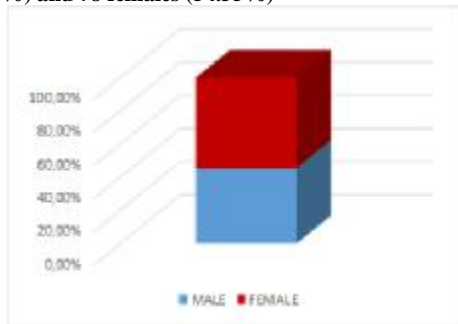
The selected dental technicians (both graduates and students) are both males and females, aged between 20 and 60. As mentioned previously, because of the limited space allotted, we chose only 10 questions out of the 30 in the questionnaire, which we considered to be the most representative for the study. A brief statistical analysis was conducted based on the questionnaire, very suggestively represented using graphs.

Of the total 143 dental technicians questioned, 65 respondents, namely 45.45%, are males, and 78 respondents, namely 54.55%, are females (figure no. 2).

Figure no. 1. Distribution of the dental technicians to whom the questionnaire was administered: 55 students in dental technology specialty (38.46%) and 88 dental technicians (61.54%)



Figure no. 2. Gender distribution of the dental technicians to whom the questionnaire was administered: 65 males (45.45%) and 78 females (54.55%)



The questionnaire administered to dental technicians:

1. Do you work on average more than 8 hours per day, 5 days a week (except holiday periods, holidays or other events)?
2. When you work for more than 8 hours a day, are you aware, besides fatigue, of a decrease in the work capacity and performance related to the precision and accuracy of the prosthetic restorations you make?
3. In the event of failure in the execution of prosthetic parts, was there any connection between the failure and the fact that you worked for more than 8 hours a day in the dental laboratory?
4. What do you do to combat the decrease in the work capacity, often manifested through the chronic fatigue syndrome: physical activity, reading, seeing films (other activities) or a combination between the first and the second?
5. Do you smoke?
6. Do you regularly or occasionally drink alcohol?

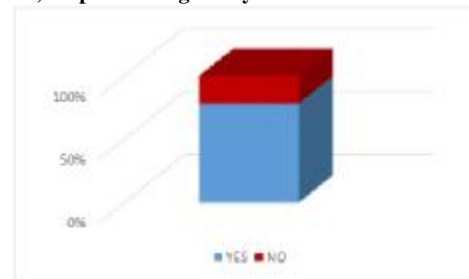
7. Have you ever received relaxing massage services?
8. Have you been engaged in outdoor or indoor (at home, the fitness centre or the gym) physical activity?
9. Have you regularly or only occasionally been engaged in outdoor or indoor physical activity?
10. Were you aware of an increase in the work capacity and performance in the dental laboratory, namely the enhancement of the precision and accuracy of the prosthetic restorations you made, following relaxing activities such as physical exercises, reading, seeing films or a combination of them?

RESULTS

Following the analysis of the responses to the questions in the questionnaire, we noticed that some of them were very interesting. We present the responses using very concise graphs as follows:

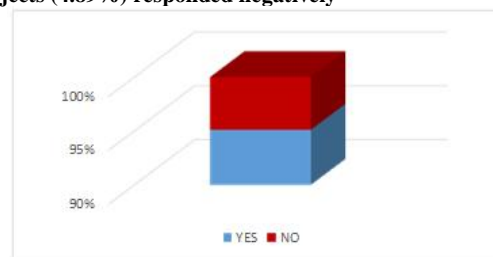
- to the first question in the questionnaire, related to the fact that the dental technicians to whom the questionnaire was administered worked for more than 8 hours per day, 5 days a week (except holiday periods, holidays or other events), 112 subjects (78.32%) responded affirmatively, and 31 subjects (21.68%) responded negatively (figure no. 3);

Figure no. 3. Distribution of the dental technicians' responses related to the 1st question in the questionnaire: 112 subjects (78.32%) responded affirmatively and 31 subjects (21.68%) responded negatively



- to the second question in the questionnaire, related to the fatigue awareness following working for more than 8 hours a day in the dental laboratory, 136 subjects (95.01%) responded affirmatively, and 7 subjects (4.89%) responded negatively (figure no. 4);

Figure no. 4. Distribution of the dental technicians' responses related to the 2nd question in the questionnaire: 136 subjects (95.01%) responded affirmatively, and 7 subjects (4.89%) responded negatively



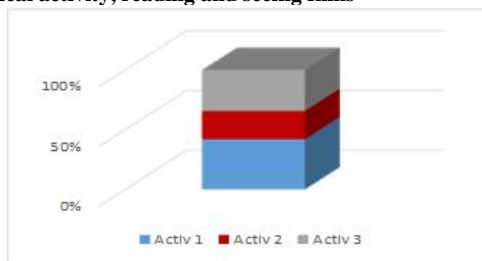
- to the third question in the questionnaire, related to the connection between the failure in the execution of some prosthetic parts and the periods when the dental technicians worked for more than 8 hours a day in the dental laboratory, 110 subjects (76.92%), responded affirmatively, and 33 subjects (23.08%) responded negatively (figure no. 5);

Figure no. 5. Distribution of the dental technicians responses' related to the 3rd question in the questionnaire: 110 subjects (76.92%) responded affirmatively, and 33 subjects (23.08%) responded negatively



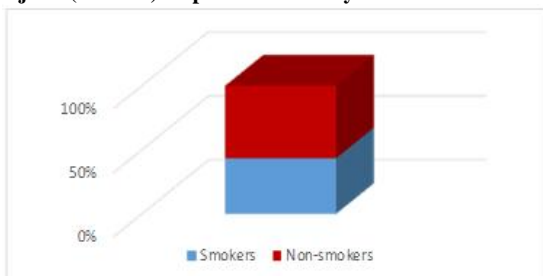
- to the fourth question in the questionnaire, 60 subjects (41.95%) responded that they were engaged in leisure time physical activity, 34 subjects (23.77%) responded that they relaxed while reading or seeing films, and 49 subjects (34.28%) responded that they were engaged in various leisure time activities or a combination between physical activity, reading and seeing films (figure no. 6);

Figure no. 6. Distribution of the dental technicians' responses related to the 4th question in the questionnaire: 60 subjects (41.95%) responded that they were engaged in leisure time physical activity, 34 subjects (23.77%) responded that they relaxed while reading or seeing films, and 49 subjects (34.28%) responded that they were engaged in various leisure time activities or a combination between physical activity, reading and seeing films



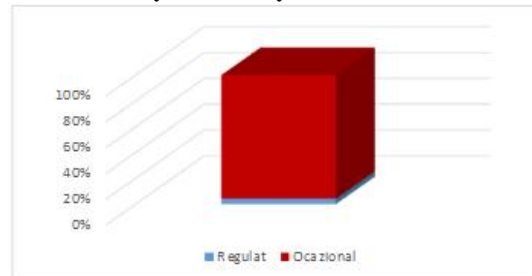
- to the fifth question in the questionnaire, 62 subjects (43.35%) responded that they were smokers, and 81 subjects (56.65%) responded that they were not smokers (figure no. 7);

Figure no. 7. Distribution of the dental technicians' responses related to the 5th question in the questionnaire: 62 subjects (43.35%) responded that they were smokers, and 81 subjects (56.65%) responded that they were not smokers



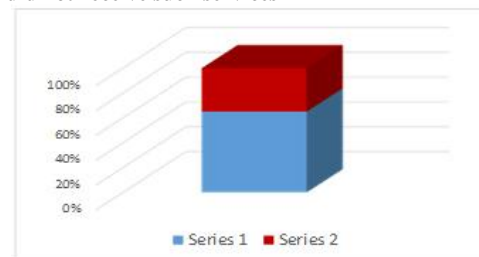
- to the sixth question in the questionnaire, 6 subjects (4.19%) responded that they drank alcohol regularly, and 137 subjects (95.81%) responded that they drank alcohol only occasionally (figure no. 8);

Figure no. 8. Distribution of the dental technicians' responses related to the 6th question in the questionnaire: 6 subjects (4.19%) responded that they drank alcohol regularly, and 137 subjects (95.81%) responded that they drank alcohol only occasionally



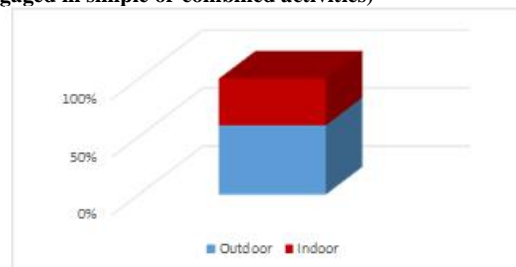
- to the 7th question in the questionnaire, 93 subjects (65.04%) responded that they received relaxing massage services, while 50 subjects (34.96%) responded that they did not receive such services (figure no. 9);

Figure no. 9. Distribution of the dental technicians' responses related to the 7th question in the questionnaire: 93 subjects (65.04%) responded that they received relaxing massage services, while 50 subjects (34.96%) responded that they did not receive such services



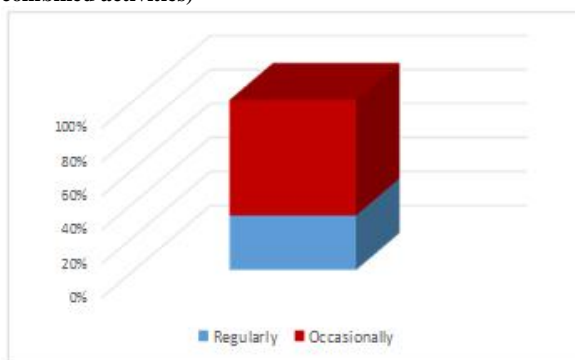
- to the eighth question in the questionnaire, of the 109 dental technicians (76.22%) who responded that they were engaged in only leisure time physical activity or in such activity combined with reading or watching TV, 65 subjects (45.46%) were engaged in outdoor leisure time activities, and 44 subjects (30.76%) were engaged in indoor leisure time activities (the percentage refers to those that were engaged in simple or combined activities) (figure no. 10);

Figure no. 10. Distribution of the dental technicians' responses related to the 8th question in the questionnaire: of the 109 dental technicians (76.22%) who responded that they were engaged in only leisure time physical activity or in such activity combined with reading or watching TV, 65 subjects (45.46%) were engaged in outdoor leisure time activities, and 44 subjects (30.76%) were engaged in indoor leisure time activities (the percentage refers to those that were engaged in simple or combined activities)



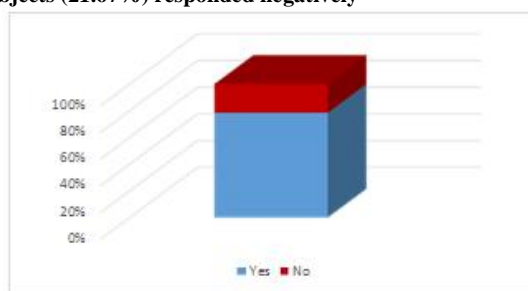
- to the ninth question in the questionnaire, of the 109 dental technicians (76.22%) who responded that they were engaged in simple leisure time activities or combined with reading or watching TV, 35 subjects (32.12%) responded that they were regularly engaged in such activities, while 74 subjects (67.88%) responded that they were engaged in such activities only occasionally (the percentage refers to those that were engaged in simple or combined activities) (figure no. 11).

Figure no. 11. Distribution of the dental technicians' responses related to the 9th question in the questionnaire: of the 109 dental technicians (76.22%) who responded that they were engaged in simple leisure time activities or combined with reading or watching TV, 35 subjects (32.12%) responded that they were regularly engaged in such activities, while 74 subjects (67.88%) responded that they were engaged in such activities only occasionally (the percentage refers to those that were engaged in simple or combined activities)



- to the tenth question in the questionnaire, 112 dental technicians (78.33%) responded affirmatively, while 31 subjects (21.67%) responded negatively (figure no. 12).

Figure no. 12. Distribution of the dental technicians who responded to the 10th question in the questionnaire: 112 dental technicians (78.33%) responded affirmatively, and 31 subjects (21.67%) responded negatively



DISCUSSIONS

Following the analysis of the responses to the 10 questions in the questionnaire, we can state some very important facts as follows:

- the work capacity and performance of the dental technicians who work for more than 8 hours a day can be enhanced by affordable methods, such as leisure time physical activity (team sports, fitness, cycling, skiing or walking);
- a hygienic lifestyle is recommended, in parallel with controlling alcohol, tobacco, stimulants, sweets etc.

consumption;

- periodic health assessments;
- health enhancement, disease prevention, wellness and quality of life.

CONCLUSIONS

Some very important conclusions can be drawn from the conducted study. Among them we can mention the following:

- elimination of risk factors directly or indirectly related to lifestyle and working conditions;
- establishment of some methods to prevent diseases by regularly engaging in leisure time physical activity to enhance and/or maintain health;
- overweight correction, considering biomechanical overload and cardio-respiratory stress.

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