

Day off after Night Shift: Rest and Recovery?

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ABSTRATO

Introdução: A profissão médica apresenta aspectos bastante estressantes, como a exigência de grande dedicação de tempo, o envolvimento de muita responsabilidade pessoal, além do constante contato com o sofrimento de pacientes e familiares. Em vista dos efeitos deletérios do estresse descontrolado sobre o médico, o paciente e a população em geral, são necessárias medidas para interromper este ciclo. Realizamos este estudo para avaliar se a ter um dia de folga após o plantão noturno pode alterar o nível de estresse entre estudantes de medicina, residentes e médicos.

Métodos de Pesquisa: Estudo descritivo comparativo transversal, realizado no período de fevereiro a abril de 2016, em que estudantes, residentes e médicos foram submetidos a um questionário validado de forma voluntária, com preenchimento on-line.

Resultados: Trezentas e sessenta e duas pessoas responderam ao questionário online. Cerca de 56% delas afirmaram ter folga pós-plantão noturno e 97,7% consideram que a folga melhora a qualidade de vida. Na escala de estresse percebido, estes atingiram 19,926 pontos. Comparando o nível de estresse entre internos, residentes e médicos que têm folga e aqueles que não têm, não houve significância estatística ($p = 0,9886$, $p = 0,8014$ e $0,0969$, respectivamente).

Conclusão: O estresse está presente em todas as categorias estudadas. Entre os estudantes de medicina e médicos, a maioria tem folga pós-plantão noturno. Médicos, residentes e estudantes de medicina estão mais estressados do que a população da mesma idade. Quase todos responderam que consideram a folga importante para a qualidade de vida, mas não houve significância estatística entre os níveis de estresse entre médicos, residentes e estudantes de medicina.

Palavras-chave: Dia de folga, Estresse, Estudante, Medicina, Médico, Perceptor, Qualidade de vida, Residência, Trauma.

ABSTRACT

Introduction: The medical profession has quite stressful aspects, such as requiring great dedication of time, the involvement of a lot of personal responsibility, as well as the

constant contact with the suffering of patients and families. In view of the deleterious effects of uncontrolled stress on the physician, the patient and the public at large, definite steps are required to stem this tide and proffer solutions. So, we performed this study to assess if the possibility of having a day off after a night shift can change the level of stress between internship students, residents and doctors.

Research methods: A descriptive cross-sectional comparative study was performed during the period from February to April 2016, internship students, residents, and doctors were subjected to a validated questionnaire voluntarily, with online filing.

Results: Three hundred sixty-two people answered the online questionnaire About 56% of them have a day off after a night shift and 97,7% consider that having a day off would improve their quality of life. In the perceived stress scale they reached 19,926 points. Comparing the level of stress between interns, residents, and doctors that have a day off and those who do not have we did not found a statistic significance ($p = 0.9886$, $p = 0.8014$ and 0.0969 respectively).

Conclusion: Stress is present in all the categories studied. Among the Medical students and doctors, most have a day after night shift off. Doctors, residents and medical students are more stressed than a population of the same age. Almost all subjects responded that they consider the day off important to quality of life, but we didn't found statistical significance between stress levels and the presence or absence of this rest period among doctors, residents and medical students

Keywords: Day off, Doctor, Medicine, Perceptor, Quality of life, Residency, Stress, Student, Trauma.

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INTRODUCTION

Medical practice is an art composed of complex and diverse skills that require patience and perseverance to develop continuously and contemporary way, professional skills, attitudes, and intellect. Thus, there is no end to this search for professional development. Therefore, it is a profession that requires dedication and sacrifices throughout all the formation. In the construction of the real physician, there are indispensable requirements, in addition to contemporary and updated perennial study, such as morality, ethics, moral rectitude, sincere empathy, welcoming otherness,

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social consciousness, and humanistic inclination.¹ The doctor, therefore, from students to graduates, is a human being, the result of objective and subjective experiences that shape his moral uniqueness, affective, emotional, character, belief and intellectual baggage, all imbued with the sincere desire of the medical practice. Thus, the person in the role of doctor will only achieve fullness in his office when aware of his own role in the society in which it is inserted.² Furthermore, the medical profession has quite stressful aspects, such as requiring great dedication of time, the involvement of a lot of personal responsibility, as well as the constant contact with the suffering of patients and families.

Moreover, the exercise of medical professionalism is hampered by the political and cultural environment of health, which many doctors consider disabling. The conditions of medical practice are critical determinants for the future of professionalism.^{3,4} Stress in medical practice has always been a topical issue. This is particularly because medical service involves taking care of other peoples' lives and mistakes or errors could be costly and sometimes irreversible. It is thus expected that the medical doctor himself must be in a perfect state of mind devoid of morbid worries and anxieties. This is however not usually the case, because the doctor apart from being affected by the same variables that impose stress on the general population, is also prone to stress because of the peculiarities of his work situation.⁵

OBJECTIVES

In view of the deleterious effects of uncontrolled stress on the physician, the patient and the public at large, definite steps are required to stem this tide and proffer solutions. Therefore, it is important to investigate ways to achieve this goal. And one of this measures is addressed in this study: the real effect of a day off after a night shift, this really means rest and recovery? So, we performed this study to assess if the possibility of having a day off after a night shift can change the level of stress between internship students, residents, and doctors.

RESEARCH METHODS

A descriptive cross-sectional comparative study was performed during the period from February to April 2016, internship students, residents, and doctors were subjected to a questionnaire voluntarily, with online filing. It used a validated questionnaire of the consisted of questions related to the stress level at which they were going during the 30 days preceding their application, allowing the formulation of a perceived stress scale, with value to be compared with the control population at the same range

of age (control A: American population and control B: population of teachers in Southern Brazil). They were also questioned if they have a day off after night shift or not. Data analysis was performed with simple statistical percentages. Continuous variables were analyzed with the student t-test and discrete variables with the Chi-square test.

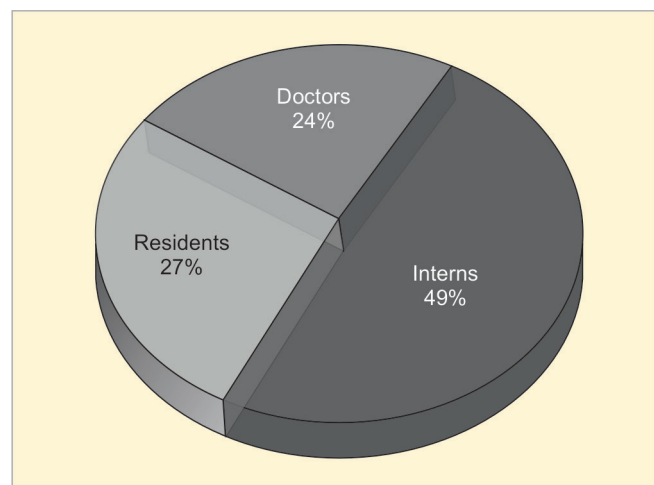
RESULTS

Three hundred sixty-two people answered the online questionnaire. One hundred seventy-seven were medical students of fifth and sixth years (interns), 97 were residents and 88 were preceptors (doctors), as shown in Graph 1.

Regarding the internship students, the mean age was 24.6 years. About 56% of them have a day off after a night shift and 97.7% consider that having a day off would improve their quality of life. Besides, 39.8% of them feels mad about something that happens unexpectedly and 34.9% consider unable to control important things in their personal life. In the perceived stress scale (EPS-10) they reached 19,926 points.

For the residents, the mean age was 27.7 years. 42,3% have a day off after a night shift and 95,9% consider that having a day off would improve their quality of life. We also found that 40.2% feels mad about something that happens unexpectedly and 36.10% consider themselves unable to control important things in their life. Furthermore, residents got 19,670 points on the EPS-10.

Among doctors, the mean age was almost 47 years. 53,4% have a day off after a night shift and 96.6% consider that having a day off would improve their quality of life. Moreover, 73.8% of them were satisfied with themselves and 59.1% reported that sometimes they had negative feelings like bad mood, anxiety or depression. The average stress level was 15,988 points Interns who have a day off reached 19,919 points



Graph 1: Percentage of participants in each category

comparing with 19,936 points reached by the ones who have not a day off. About the residents, the ones who have a day off made 19,902 points and the ones who have not a day off scored 19.5 points. Finally, preceptors with a day off after a night shift scored 14,978 points versus 17,146 points reached by ones without a day off.

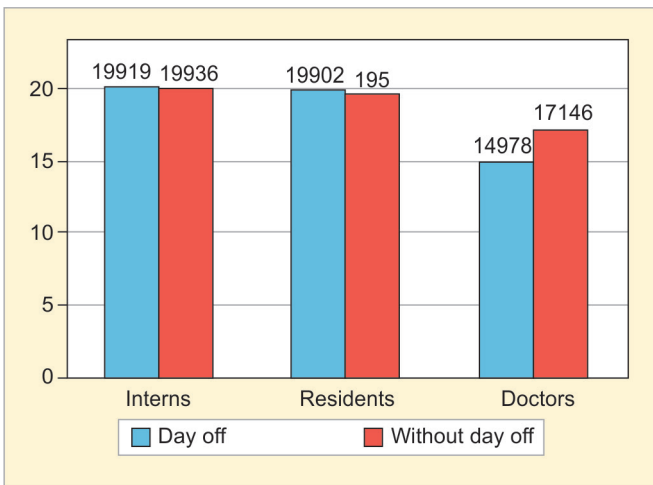
Comparing the level of stress between interns, residents, and doctors that have a day off and those who do not have did not find a statistic significance [($p = 0.9886$, $p = 0.8014$ and 0.0969 respectively (Graph 2)].

When we compare stress levels to control populations we compared the EPS score of our subjects to two control populations. As control A a same age American population defined by Cohen, in 1984 and as control B a population of teachers in southern Brazil defined by Reis in 2004. The results of this comparison are found in Graphs 3 to 5.

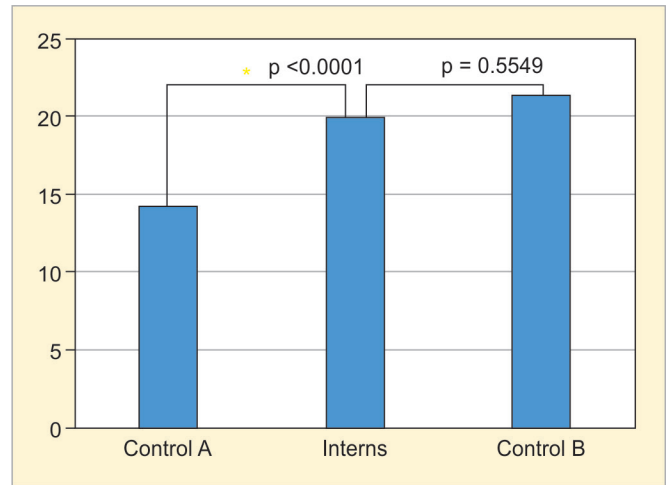
DISCUSSION

The medical residence is an intense and exhausting work experience, with the privacy of amenities like recreation and rest. Most of the doctors experience this phase of medical education, with taxes as high as 62%.6 The resident learning comes from intense dedication and interaction with experienced physicians. Contacts with the patient and adverse medical care scenarios are amplified, and often this involves large amounts of hours worked.

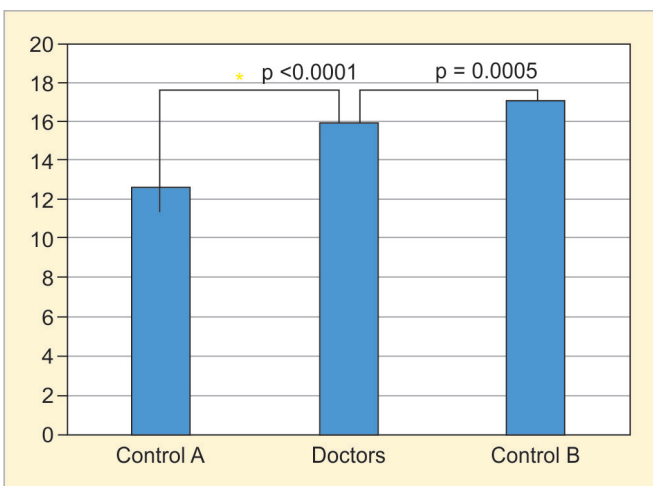
Law 6.932/1981 outlines the juridical aspects of medical residency in Brazil. It assures the resident doctors entitled to one free day per week and 30 consecutive days of rest per year of activity, the residency courses programs must comply with a maximum of 60 hours per week and 24 hours max of continuous duty. Brazilian jurisprudence positions itself clearly as the activities of medical or resident doctor does not constitute working relationship.^{6,7}



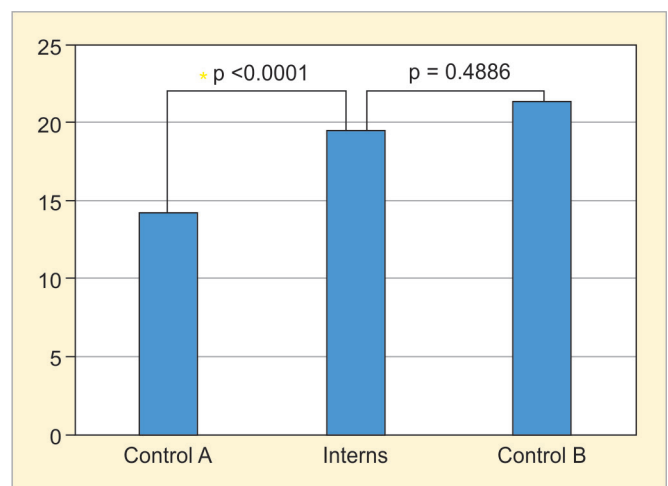
Graph 2: Level of stress in interns, residents, and doctors that have a day off



Graph 3: Comparison of stress levels between interns, control A and control B. EPS score in control A was 14.2, control B was 21.3 and among interns was 19.9. The number of interns that answered the questionnaire was 177, with a mean age of 24 years old



Graph 4: Comparison of stress levels among residents, control A and control B. EPS score in control A was 14.2, control B was 21.3 and among residents was 19.6. The number of residents that answered the questionnaire was 97, with a mean age of 27 years old



Graph 5: Comparison of stress levels between doctors, control A and control B. EPS score in control A was 12.6, control B was 17.2 and among doctors was 15.9. The number of doctors that answered the questionnaire was 88, with a mean age of 46 years old



It's common sense that the medical profession has quite stressful aspects. Doctors are exposed to high levels of stress in the course of their profession and are particularly susceptible to experiencing burnout and long work hours are a risk factor for that. In the emergency department, work overload of extended work hours and not fixed work schedules creates anxiety and is also related to burnout syndrome. Burnout brings the fourth higher risk of making poor decisions; display a hostile attitude toward patients; make more medical errors; and have difficult relationships with co-workers, as well as a variety of mental morbidities. The literature has shown that depression and anxiety are negative predictors of successful medical career.^{8,9}

Kim et al. advice that C-reactive protein levels and leukocyte count are significantly higher in current shift workers than in daytime workers. Low chronic inflammation is related to the development of cardiovascular diseases.¹⁰⁻¹⁸ These problems can be avoided by optimal work process development. Having varied work activities and the possibility of deciding when to perform a work task, as well as being able to decide working hours can contribute to excellent workability.¹⁰ Flexible and less-restrictive duty-hour policies for surgical residents were associated with noninferior patient outcomes and no significant difference in residents' satisfaction with overall well-being and education quality.¹¹ On an online publication in February 2013 the Wall Street Journal argued about the work shifts of medical residents putting two lines of thought in the debate. By one side residents working on 24 to 30 hours shift had 36% more serious medical errors than other with a 16 max hours' schedule, and even non-healthcare related problems like more odds of having car crashes. By the other, limitation of duty ours disrupts both education and patient care. Twenty additional rest hours per week translates into perhaps 1,000 fewer hours of learning opportunities per year.^{12,13}

A systematic review made by Harris et al. in 2015 demonstrates evidence of the improved resident quality of life and fatigue but insufficient evidence to show improvement in patient safety and surgical training of orthopedic surgeons.¹² A Canadian national survey conducted by Hamadani et al. that used the world health organization quality of life instrument (WHOQOL-BREF) questionnaire shows that general surgery residents in Quebec, where since 2012 restricted their residents' duty hours to 16 hours maximum, reported a decreased quality of life and sense of ownership of patients in their care.¹⁴

Another systematic review from Ahmed et al. in 2014 shows negative impacts on patient outcomes and performance on certification examinations after restrictions in resident duty hours, and more,

demonstrating an increased morbidity and mortality rates in high-acuity patients.^{15,16} Businger et al. also disagree that a worked hour restriction can improve patient safety after analyzing a 50 hour per week regimen in Switzerland. He emphasizes that focus should be changed for other work process aspects.¹⁵

As verified by Olasky et al. sleep hours and fatigue did not appear to influence performance in laparoscopic surgery simulators, the only experience was a significant determinant factor on this matter.¹⁷

Our objective was to show if a day off after a night shift can really produce recovery by analyzing it stress reduction effect in internship students, residents and doctors.

A day off was considered important for wellbeing in almost all answered questionnaires, but our results display no statistically significant difference between stress levels with or without the day off. These results agreed with most of the reviewed literature putting work hours as a nondeterminant factor of the well-being of residents, and we can extend this idea to other phases of the medical profession. Stress causes are multifactorial and we can suppose that not having a rest period after continuous duty ours is one of this causes.

The EPS-10 was used as a questionnaire, this scale doesn't have a cut point to diagnose or define stress, but it allowed us to compare our populations to controls. We found that doctors, residents, and medical students are significantly more stressed than the same age population and also less stressed then the south Brazilian teachers' population used in the validation study of EPS-10 in Brazil, although only doctors are statistically significant less stressed. We lack to found a study with a more similar population to use on this comparison, also these control populations, A and B, where defined more than 20 and 10 years ago respectively. Although there are many areas of debate with respect to the medical work schedules, this article focused on medical doctors wellness and stress. Unfortunately, other topics such as professionalism, impact on education, costs and patient safety were outside of the scope of this study. Have a day off after night shift helps wellness of medical professionals, but does not fix all the stress that these professionals undergo. Composing this stressful scenario, work conditions, responsibilities, team functioning and the volume of surgeries/procedures/patients are key parts. There are a lot of variables that interfere with the doctor's own mental health. A day off after night shift is a small but really important step to improve this conditions.

CONCLUSION

Stress is present in all the categories studied. Among the Medical students and Doctors, most have a day after night

shift off. Doctors, residents and medical students are more stressed than a population of the same age.

Almost all subjects responded that they consider the day of important to the quality of life, but we did not find statistical significance between stress levels and the presence or absence of this rest period among doctors, residents and medical students

Stress causes are probably multifactorial. So do not take a day off night after duty should be only one of these causes.

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