



PSYCHOSTIMULANT SUBSTANCES USE AMONG RESIDENT DOCTORS

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Abstract: The use of psychostimulants is more and more common lately, especially in the medical guild. The term “burn-out” is an occupational phenomenon, not a disease, and 25-60% of doctors in different specialties have the burn-out syndrome. The method was to complete a questionnaire-type test by 204 medical residents. The results shows us that 72.1% (147) of the respondents drinks coffee, 25.9% of them smokes cigarettes during hospital hours and 13.7% consumes energy drinks. Furthermore 5.9% drinks alcohol during shifts. Among of all, those who are consumers of at least one psychostimulant substance, the risk of them having at least one of the symptoms of burnout is 1.3 times higher than those who do not consume anything at work (RR-1.3453, $p = 0.0152$). Psychostimulant substances are consumed to improve the efficiency and resistance at work. It's important to manage the time in order to avoid extreme fatigue and distress.

INTRODUCTION

The use of psychostimulants substances is more and more common lately, especially in that category of workers who, by the nature of their profession, tend to work for a long time, including nights. Recently, the term “burnout” has been introduced, which is in fact an occupational phenomenon, not a disease.(1) It is defined as a syndrome resulting from chronic stress at work, stress that has not been managed properly. It is defined by three coordinates: chronic fatigue, lack of energy; negative thoughts about work; reduced efficiency at work.(2)

Numerous studies have shown that between 25-60% of doctors in different specialties have burn-out syndrome.(3)

Continuous changes in health systems have created pressure on physicians, both working time and events that continuously harm them: self-blame, accusations from relatives, perfection required by the job itself, continuous training.(4)

A study conducted by Shanafelt et al. which assessed the prevalence of stress in physicians and included 6880 physicians in various specialties showed that 54.4% of physicians reported at least one symptom of burnout compared to 45.5% in 2011. The same study shows that first-line physicians (emergency medicine, neurology, internal medicine, anesthesia and intensive care) have a higher risk of stress.(2)

The most used psychostimulants are: coffee, energy drinks, cigarettes, alcohol. Caffeinated beverages such as coffee, tea, and energy drinks are used to be alertness, cope with stress, and enhance cognitive performance. Caffeine intake also help to stay awake, may exaggerate the sympathetic-adrenal medullary responses to stressful events, negatively affecting resident's quality of life.(5) The stimulating effects of nicotine give the sensation of relaxation and increase of resistance during working hours to those who frequently smokes.(6) Wetter et al., in a sleep cohort study, found that current smokers were more

closely associated with snoring and moderate or severe sleep-disordered breathing than non-smokers.(7)

A study by Eleanor P. Stoller shows that some residents who quit smoking began smoking again in residency. Despite of these, cognitive abilities such as attention, decision making, and executive functioning degrade significantly after extended periods of wakefulness.(8)

Energy drinks generally contain methylxanthines (including caffeine), taurine, glucuronolactone, B Vitamins, and herbs. They are used for energy boost and wakefulness. They also have negative effects on cardiovascular system, on heart rates and blood pressure. It was also proven that its consumers have experienced neuropsychosis as caffeine induces psychosis in those without a previously diagnosed psychotic disorder.(9,10)

Although less used at work, alcohol can give a feeling of relaxation and safety. Depending on the blood alcohol concentration (BAC), it can affect the body as follows:

- 02 to .03 BAC: relaxation, mild euphoria, decreased inhibition;
- 05 to .06 BAC: increased euphoria, further decrease of inhibition, exaggerated behaviour. Over 0.6 there is a decline in motor skills that is not our area of interest.(11)

AIM

The aim of this study is to see the incidence of psychostimulant substance used among resident physicians and to highlight the importance of managing both sleep periods and activities performed, in order to increase effectiveness and concentration at work.

MATERIALS AND METHODS

Prospective, observational study that included 204 residents from all over the country aged between 25-40 years

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between March 2020 and June 2020. The method was to complete a questionnaire-type test with 20 questions, completed anonymous, by Romanian Post Graduated Y1-6 residents (PGY1-6), from all specialties. We evaluated the work schedule, coffee, tobacco, energy drinks and alcohol consumption. After collecting the data, we performed the statistics using the Mixrosoft Excel program.

RESULTS

Our study included 204 (PGY1-6), 85.4% (n = 174) are between 25-30 years old, 74% (n = 151) are female and 92.2% (n = 188) are from urban areas. Demographic characteristics are presented in table no. 1.

Table no. 1. Demographic characteristics of the study sample

Sex	Frequency	Percentage
Male	53	26%
Female	151	74%
Age		
25-30 y	175	85.3%
30-35 y	24	11.8%
35-40 y	4	2%
>40 y	2	1%
PGYs		
PGY-1	111	54.4%
PGY-2	38	18.6%
PGY-3	25	12.3%
PGY-4	14	6.9%
PGY-5	11	5.4%
PGY-6	5	2.5%

Of those surveyed, 54.4% (n = 111) are residents in first year of residency, 18.6% (n=38) in second year, 12.3% (n=25) in third year, 6.9% (n=14) in fourth year and 7.8% those of fifth and sixth year of residency (table no. 1). The most frequent specialties of the residents were Anesthesia and intensive care (AIC), Cardiology, Primary care, Emergency, Internal medicine.

The work schedule that the residents have is between 6-8 hours, and those from the specialties AIC, Cardiology, Emergency medicine work more than 8 hours per day (figure no.1) 30.4% (n = 62) of the residents perform approximately 2 - 3 night shifts per month, 16.2% 4-5 night shifts/ month and 9.3% do more than 5 night shifts per month.39.7% (n=81) thinks that they work more than other doctors but that do not affect their decision-making capacity (67.6%) (figure no. 2).

Figure no. 1. Work schedule

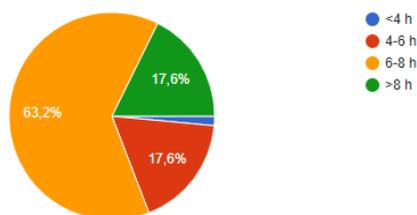
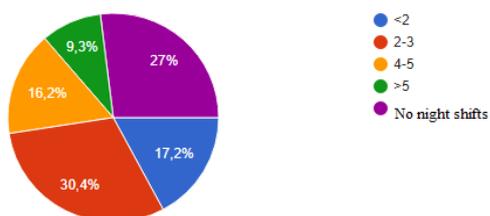
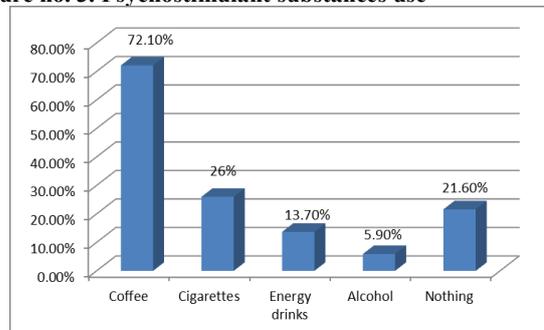


Figure no. 2. Nightshifts per month



72.1% (n=147) of respondents drinks coffee and 16.1% (n=28) of them started consuming it once the residency started.32.18% (n=56) of them drinks approximately 2-3 coffees / day / nightshift because they believe that helps them stay awake. 25.9% of respondents smokes cigarettes during hospital hours, 3% (6) smokes since they started residency and 13.8% (n=28) started in college.8.4% (n = 17) believe that smoking behaviour help them increase alertness (figure no. 3.)

Figure no. 3. Psychostimulant substances use



The incidence of those who consume energy drinks is 13.7% (n=28), 5.4% (n=11) of them think that they help them stay awake and have more energy during work. Alcohol consumption is 5.90% (n=12) and everyone does it just because they like it and not because it would help them at work. One important fact is that all those who are consumers, use them every working day or in every night shift. (61.8% (n=126).

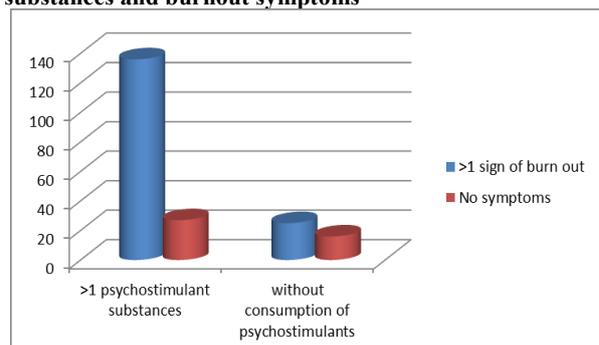
As well, 11.9% (n=24) of smokers smoke approximately 1 pack per working day / nighthshift and 2% (n=4) exceed 1 pack. Most people who consume energy drinks do not exceed more than 1 energy drink.

50% (n = 102) of consumers are convinced that the use of these substances increases their efficiency and resistance at work but 45.1% would not give up consumption if they had a more permissive schedule. 66.5% (135) of respondents mention that most of their colleagues use at least one of these substances to be more effective at work.

The symptoms of burnout can be: extreme fatigue, guilt, job dissatisfaction, the feeling that they do not have enough knowledges.

Our results shows that 64.7% (n=132) think they do not have enough knowledge, 36.3% (n=74) feel guilty for not doing enough at work, 24% report extreme fatigue (49) and 13.7% (n=28) have negative thoughts about work. Among all, those who are consumers of at least one psychostimulant substance, have a 1.3 higher risk to have one of the symptoms of burnout than those who do not consume anything at work (RR- 1.3453, 95% CI 1.0588 to 1.7092, z statistic 2.428, p = 0.0152) (figure no. 4).

Figure no. 4. Correlation between psychostimulant substances and burnout symptoms



DISCUSSIONS

In this study, we investigated lifestyle quality in Romanian residents (PostGraduatedYear1–6). Our data indicate a high prevalence of coffee, cigarettes and energy drinks consumption. Furthermore, we identified that those who use them have a higher risk for burn out syndrome.

Multiple studies show sleeping habit is likely to have a major impact on residents' abilities to perform their work.(9) Shift work is associated with negative health effects. Night shift workers have a higher risk to develop cardiovascular events than day workers.(11)

On-going use or overuse of these stimulants and sedatives can create dependence, which can lead to a need to use higher doses for the same effect.(9)

The obtained results are in accordance with multiple studies.(12) Excessive psychostimulant substances might expose the residents to decrease in attention, poor judgement and risk of accidents .

More than 70% of our respondents drink coffee, 25% are smoking and 13.7 % consume energy drink but also 45% would not give up consumption if they had a more permissive schedule. Maybe it is not the fatigue which makes them use all of these substances and future studies should investigate in depth a possible causal link.

It is important to mention that some studies have shown the negative effects of coffee like sleep disorders, behaviour disorder or nervousness but also the positive effects, and a cup of coffee is not considered a health hazard.(10)

But, in the end how can they manage sleep deprivation? Healthful eating is important in order to schedule every meal and to avoid junk food, consumption of high fat, high sugar, which can make them more tired. Another strategy for staying awake is making exercise to maintain a high activity level, or just keep moving. Other strategies mentioned in literature are showering, listening to music, napping, "front load" or "load up" on sleep before being on call, exposure to light.(13)

Current treatment guidelines suggest nonpharmacologic interventions. US Food and Drug Administration approved modafinil and armodafinil to improve wakefulness in patients with excessive sleepiness and shift work disorders.(14)

CONCLUSIONS

In conclusion, psychostimulant substances are consumed to improve the efficiency and resistance at work. It is important to manage the time at work and to avoid extreme fatigue for taking the best decisions possible for patients.

It is worth studying in detail the burnout syndrome and its effects. We consider opportune to make regular interventions for the resident doctors regarding relaxation and learning the best methods and management of stress and sleep.

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