

THE EFFECTS OF DIET, PHYSICAL ACTIVITY AND SOCIAL FACTORS ON STRESS PERCEIVED BY STUDENTS

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ABSTRACT

Background. General health status of students is becoming worse due to an intensive lifestyle: a difficult job or study routine, improper diet, and low physical activity (Poteliūnienė, 2010). One of the common problems among students is stress. Stressful situations on a daily basis have been found to be associated with a worse physical and psychological status, harmful habits or personal relationships with friends (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005; Leppink, Odlaug, Lust, Christenson, & Grant, 2016).

Methods. According to the following questionnaires, dietary habits and some social peculiarities (Grabauskas, Zaborskis, Klumbienė, Petkevičienė, & Žemaitienė, 2004), physical activity (Aadahl & Jørgensen, 2003) and perceived stress (Konduri, Gupchup, Borrego, & Worley-Louis, 2006) by female and male students were determined. The data obtained were processed using mathematical statistical methods. The relationships between qualitative determinants were evaluated by chi square (χ^2) criterion. A value at $p < .05$ was considered significant. Statistical analysis was performed using SPSS (version 17.0) (*Statistical Package for Social Science 17.0 for Windows*) statistical software package.

Results. Male students (54.2%) who were following a dietary regime reported experiencing low level of stress, and those students (45.2%) who were not having a dietary regime perceived moderate level of stress. Married female students (80%) responded that they experienced low level of stress, moderate level of stress was indicated by 72.7% of females living with a partner and 40% of females who had a boyfriend, and 38.5% of single females reported having high level of stress.

Conclusions. Male students who were following a dietary regimen reported experiencing lower level of stress, and those students who were not having a dietary regimen responded that they perceived moderate level of stress. A dietary regimen and perceived stress did not differ among female students. Different levels of physical activity were not associated with stress experienced by female and male students ($p > .05$). Married female students did not perceive high level of stress; moderate level was reported by females living with a partner; high level of stress – by single students. Marital status and perceived stress did not differ in male students.

Keywords: physical activity, diet, social factors, stress.

INTRODUCTION

Frequently perceived stress is a common problem in students, especially in those who started their studies after school. Stressful situations on a daily basis are associated with worse academic performance, physical health and mental status (Leppink et al., 2016). Most commonly stress manifests through chronic diseases, depression,

anxiety, and sleeping disorders. Harmful habits, personal relationships, disagreement with university or college management are associated with stress (Dusselier et al., 2005). According to scientific research, the main stressors are a heavy study workload, sleeping disorders, and social activity (Talib & Zia-ur-Rehman, 2012).

The aim of the study was to analyse the effects of diet, physical activity, harmful habits and some social factors on stress perceived by students.

The object of the study was the effects of diet, physical activity, harmful habits and social factors on stress perceived by students.

METHODS

The research sample included 118 respondents: 52 female and 66 male students. They were the 2nd – 3rd-year students of physiotherapy of the Lithuanian Sports University. Mean age of females was 20.77 ± 2.29 years, and that of males – 21.03 ± 2.63 years.

The study was performed following the Declaration of Helsinki concerning the ethical guidelines for human research. The study was started in November, 2016, and finished in January, 2017. The further sequence included the selection of subjects, familiarization, aim, and methods of the study.

Methods included a *Questionnaire survey*. Using the questionnaires, the following variables were determined: diet patterns, harmful habits and certain social factors (Grabauskas ir kt., 2004), physical activity (Aadahl et al., 2003), perceived stress (Konduri et al., 2006). The overall questionnaire consisted of 23 questions. Anthropometric measurements such as age, body mass and height comprised 1–2 questions, the other questions evaluated as follows: 4–7 – social factors, 8–14 – diet patterns, 15–21 – harmful habits, 22 – the frequency of physical activity and 23 – the frequency of perceived stress.

Statistical analysis. The obtained data were processed using mathematical statistical methods.

The relationships between qualitative determinants were evaluated by chi square (χ^2) criterion. The Student-*t* test was used for the calculation and assessment of means. Factor analysis, principal component analysis and a Varimax rotation were used for the main groups of food. Five dietary factors, which were later transformed into the groups “skipping meals rarely“, “skipping meals sometimes“, and “ skipping meals often“, were developed. A value of $p < .05$ was considered significant. Statistical analysis was performed using SPSS 17.0 for Windows statistical software package.

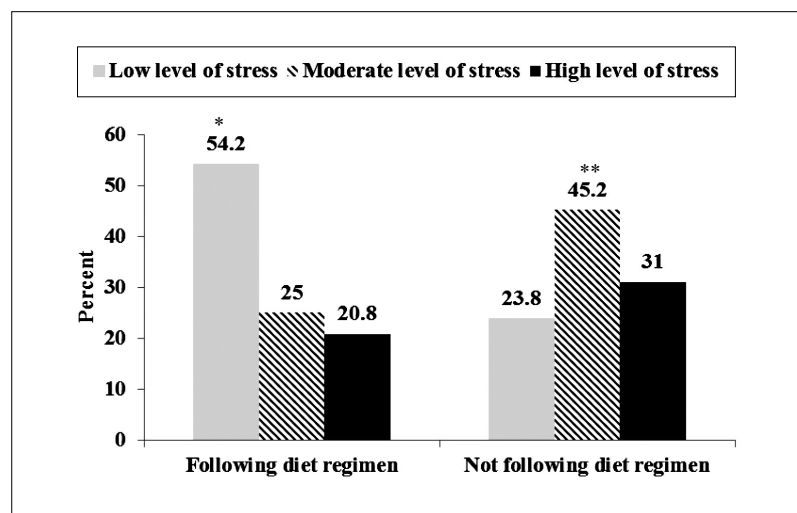
RESULTS

The majority of male students (54.2%) who were following a dietary regime experienced low level of stress, and students (45.2%) without dietary regime reported having moderate levels of stress. The results were statistically significant (Figure 1).

Levels of stress experienced by female students were similar in the groups of sufficient, moderate and insufficient physical activity suggesting that in all groups there were females who reported having high, moderate and low levels of stress (Figure 2). High levels of stress were pointed out by 22% of females with sufficient physical activity, by 25% – with moderate physical activity, and by 47% of students who had insufficient physical activity. The results were not statistically significant.

The results of the study showed that 45% of male students with sufficient physical activity, 40.9% – with moderate physical activity, and 28.6% of males who had insufficient physical activity reported experiencing moderate levels of stress. There were no significant differences (Figure 3).

Figure1. Dietary regime and levels of stress perceived by male students



Note. $\chi^2 = 6.264$, $df = 2$, $p < .05$;

* $p < .05$ comparing males who were following a dietary regime and experienced moderate and high levels of stress;

** $p < .05$ comparing males who were not following a dietary regime and experienced moderate and high levels of stress.

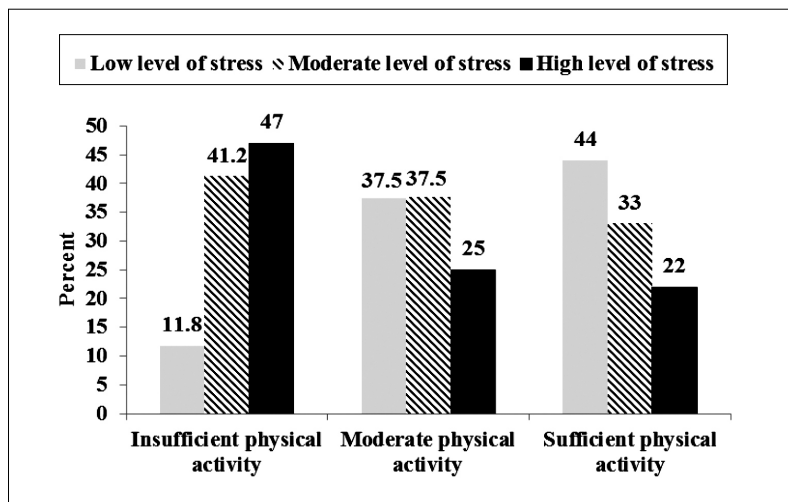


Figure 2. Physical activity and levels of stress perceived by female students

Note. $\chi^2 = 5.421$, $df = 4$, $p > .05$.

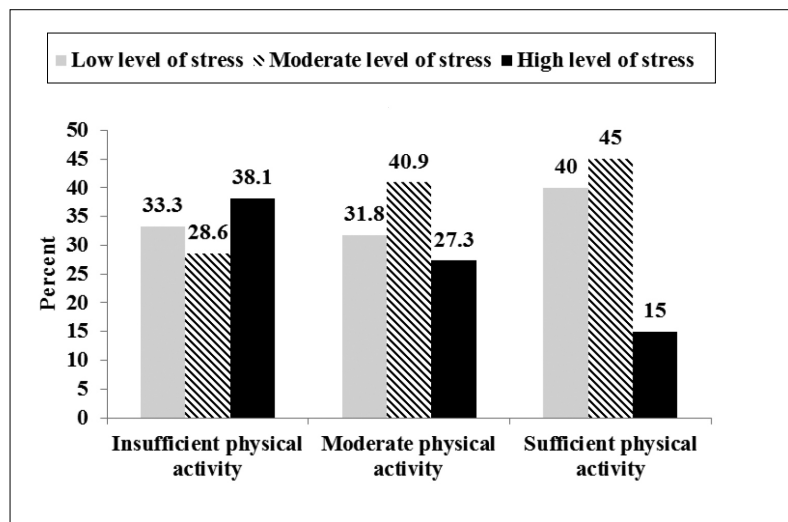


Figure 3. Physical activity and levels of stress perceived by male students

Note. $\chi^2 = 3.046$, $df = 4$, $p > .05$.

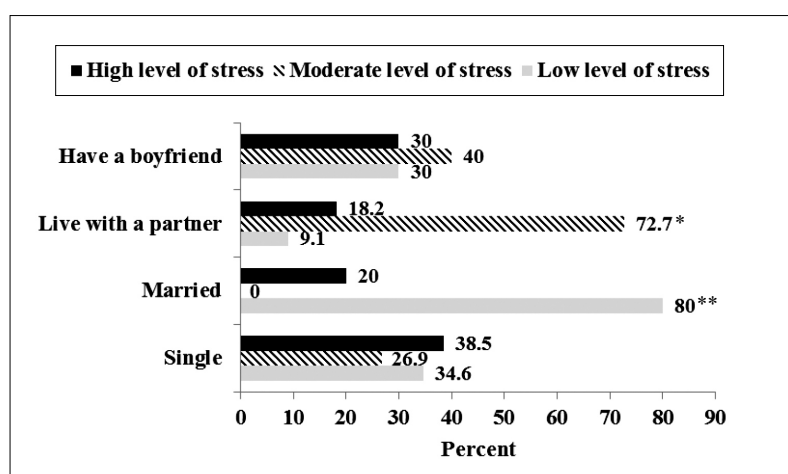


Figure 4. Marital status and levels of stress experienced by female students

Notes. $\chi^2 = 13.066$, $df = 6$, $p < .05$;

* $p < .05$ comparing with females living with a partner and perceiving low and high levels of stress;

** $p < .05$ comparing with married females who perceived high level of stress.

The majority of married female students (80%) responded that they experienced low levels of stress, moderate level of stress was pointed out by 72.7% of females living with a partner and 40% of

females who had a boyfriend, and 38.5% of single females reported having high levels of stress. The results were statistically significant (Figure 4).

DISCUSSION

General health status of students is becoming worse due to an intensive lifestyle: difficult job or study routines, poor sleep quality, not regular meals, low physical activity, and harmful habits (Poteliūnienė, 2010). In order to maintain proper physical health, it is recommended to have a healthy diet, sufficient amount of rest and sleep, as well as regular exercises (Standage et al., 2012). The analysis of our results about diet regime and perceived stress showed that 42.1% of female students who followed a diet regime perceived low level of stress, and 36.4% of students without diet regime experienced high and moderate levels of stress ($p < .05$). The majority of male students (54.2%) who followed a diet regime perceived low level of stress, and moderate levels of stress more frequently were reported by students (45.2%) who did not have diet regime. According to Zvolinskaia, Kimitsidi, and Aleksandrov (2014), one of the common problems among students is improper diet, and Tavalacci, Ladner, Grigioni, Richard, and Villet (2013) argue that stress perceived by students is associated with diet habits.

The main environmental stressors may be linked to academic, non-university, family or relationships with friends (Yusoff, Rahim, Baba, Ismail, & Pa, 2013). According to our results, the majority of married women (80%) perceived low levels of stress, moderate levels of stress were reported by students living with partners (72.7%) and having a boyfriend (40%), and high levels of stress were experienced by single students

(38.5%) ($p < .05$). Among males, moderate levels of stress were pointed out by married (66.7%), having a girlfriend (47.4%) and single students (43.3%). Students (50%) who lived with a partner most frequently experienced high levels of stress. According to Karkockienė (2011), the most common stressors were relationships with a family or friends, financial problems and a heavy study load.

CONCLUSIONS

1. Male students who followed a diet regime perceived lower level of stress compared with moderate stress experienced by students without a diet regime. Diet regime and perceived stress among female students did not differ. Significant differences in eating breakfast, having a snack, intake of food and perceived stress among male and female students were not found.
2. Different physical activity was not associated with stress perceived both by female and male students ($p > .05$).
3. High level of stress was not perceived by married female students, moderate levels – by females living with a partner, high level of stress – by single students. Marital state and stress experienced by male students did not differ. Considering gender, the associations between average mark, subjective study evaluation, incomes and perceived stress were not determined.

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Received on May 19, 2017

Accepted on June 22, 2017

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