

PHYSICAL ACTIVITY LEVEL DURING PANDEMIC – A PILOT STUDY

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ABSTRACT. The aim of our study was to find out about physical activity level, during this pandemic period. Nowadays the entire society is affected, by this pandemic, socially, economically and sport activities as well. According to our data, people from this sample have a high level of physical activity, but they declared to have a lower fitness level reported to previous years.

Keywords: *vigorous physical activity, moderate physical activity, walking activity, gender, physical activity.*

REZUMAT. *Nivelul de activitate fizică în timpul pandemiei - studiu pilot.* În această perioadă umanitatea se confruntă cu mari provocări, medicale, sociale și economice. Stilul de viață al tuturor a avut de suferit, oamenii fiind nevoiți să depună eforturi considerabile pentru a se adapta, cât mai repede, la situațiile apărute. Sectorul activităților fizice sportive, datorită închiderii activității cluburilor sportive, a avut și el de suferit, cu implicații asupra nivelului de fitness.

Cuvinte cheie: *activitate fizică viguroasă, activitate fizică moderată, mersul pe jos, gen, activitate fizică.*

Introduction

This pandemic situation, caused by the COVID-19, still affects the entire world, economically, socially, sports events being included too. During lock down, and immediately after, sport activities were affected, many of them being forbidden, in order to reduce the virus spreading (Ashley, 2020, p. 39). In Italy

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and in several countries, for reducing the spread of the virus, people have to adopt self-isolation and trying to find home workout in order to stay active (Maugeri et al., 2020, p.1). The actual pandemic represents a real threat for health and lifestyle of humankind. The field of physical activities, which is part of a healthy lifestyle, was also affected (Woods et al., 2020, p.55).

The restrictions imposed by this pandemic, lockdown, school closures, have increased the stress for parents and kids. If this situation will continue, kids risk for developing depression, anxiety, and cognitive problems, which could affect their adulthood life (Arantes de Araújo, Veloso, Matheus de Campos Souza, Coelho de Azevedo, Tarro, 2020, p.9).

Schools closures in most of the countries, reduced physical activities which could conduct to increase the risk for obesity (Ruopeng, 2020, p. 302).

During lockdown the fitness sport clubs were closed, the pandemic situation has affected the lifestyle of adult peoples too. Many adults and children have changed their usual sport activities. Some of them have preferred to be involved in outdoor activities like running, cycling, open water swimming, hiking, in this way trying to stay in shape physically and emotionally. In Romania some of the swimming pools are still closed, therefore most of the children who were attending swimming classes have switched to basketball, football, tennis and track and field practices.

Material and methods

In this study we have used the following research methods: bibliography study, IPAQ self-administrated short form (International Physical Activity Questionnaire (<http://www.ipaq.ki.se>), it was translated and adapted, on Google formula, for being used on line, and SPSS 19 statistical program. We have also used Chi square test at $p=.05$ significance level and cross tabulation. The BMI was calculated and expressed in units of kg/m^2 (National Heart Lung and Blood Institute, Calculate your body mass index, n.d. para.1).

To establish the physical activity level, starting from what the subjects have declared, we have used the IPAQ scoring protocol (<https://sites.google.com/site/theipaq/scoring-protocol>).

Total days and time (in minutes) usually spent by being involved in vigorous activities (called MET, minutes a week), were multiplied by a given value 8. The number of days multiplied with the time spent by doing moderate activities was multiplied by a given value 4. Concerning walk activities, the time spent walking were multiplied by the value 3.3. After obtaining all the values (the total minutes in each category), these were added up to establish the physical activity level into the following categories: low, moderate and high.

The guideline for “the data processing and analysis of the IPAQ” describes three categories of physical activity.

High – in this case we have two aspects - vigorous intensity, at least, 3 days and accomplish at least 1500 minutes/week; or 7 days walking, moderate, vigorous activities achieving 3000 minutes/week.

Moderate – means 3 or more days with vigorous activities spending at least 20 minutes/day; 5 days walking or moderate activities for a period of minimum 30 minutes/day; 5 or more days walking, moderate and vigorous intensity minimum 600 min/week.

Low – for those who do not accomplish the criteria mentioned in the two situations presented above (IPAQ, IPAQ scoring protocol, n.d. para.1.).

A total of 57 people (average age 41.36), female (n=29), male (n=28) were involved in our study.

Results

There is statistically significant difference between genders regarding the BMI ($\chi^2= 27.7$, $df = 3$, $p \leq 0.001$). Most men who were involved in this study, 18 of them fell into the overweight category, meanwhile 23 women out of 29 have normal weight (Chart no.1).

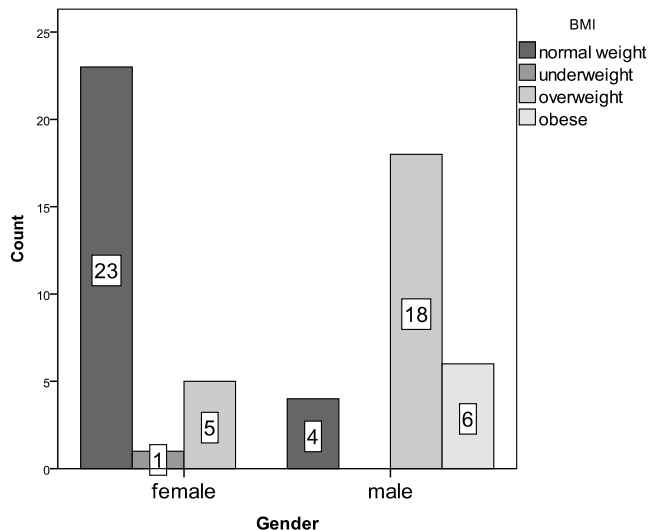


Chart no. 1. Gender and body mass index

Among 57 participants of the study, 10 of them declared that they took part in vigorous activities five days per week, while 11 of them aren't involved in any vigorous activities (Chart no. 2). Cross tabulation research method revealed that statistically there is no significant difference between genders respecting vigorous activities ($\chi^2= 5.29$, $df = 7$, $p= .624$).

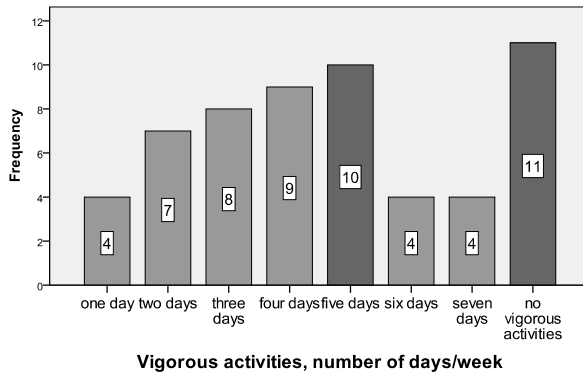


Chart no. 2. Vigorous activities per week

According to the results, statistically there is no significant difference, at the level of gender, concerning the time spent in vigorous activities ($\chi^2= 15.01$, $df = 12$, $p= .240$). Thirteen participants out of 57 were involved in vigorous activities within 30-40 minutes once a week as they have declared (Chart no.3).

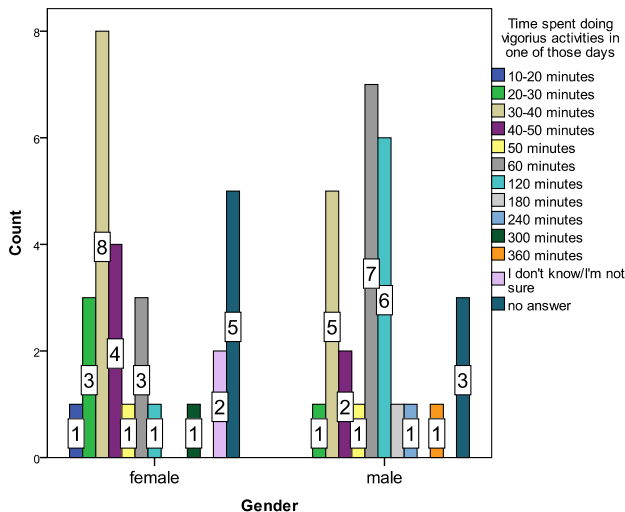


Chart no. 3. Gender and time spent doing vigorous activities

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Cross tabulation disclosed that there is no statistically significant difference between genders respecting their participation in moderate activities during a week ($\chi^2 = 12.75$, $df = 7$, $p = .078$). Six females, from 29, are involved three days in moderate activities, meantime 4 male out of 28, reported the same number of days (Chart no.4).

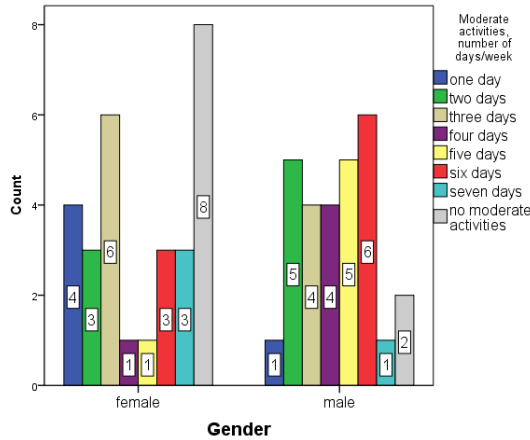


Chart no. 4. Gender and moderate activities days/week

According to our statistical analysis the subjects are involved in moderate activities, usually, one hour (Chart no. 5). There is no statistically significant difference at the level of gender and their time spent in moderate activities ($\chi^2 = 11.3$, $df = 10$, $p = .334$).

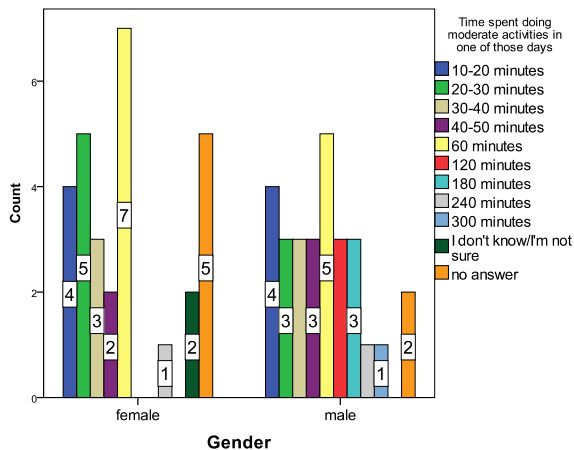


Chart no. 5. Gender and time spent involved in moderate activities

One of the items, from the IPAQ, was about walking activities during a week. There is no statistically significant difference at the level of gender and their walking activity realized in a week ($\chi^2 = 9.62$, $df = 7$, $p = .211$). Five female and five male, from the total subjects, declared that they walk (from different locations to another) 5 days per week. Twenty-two of them declared that they walk seven days per week. (Chart no. 6).

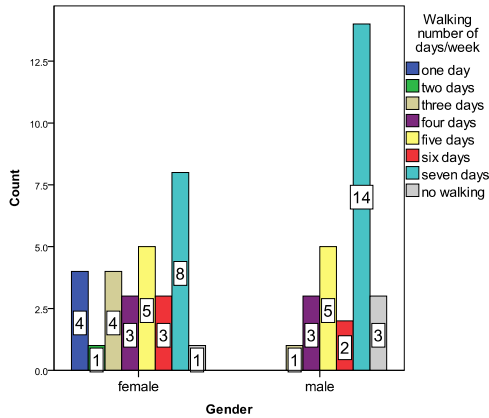


Chart no. 6. Gender and walking activity per week

Most subjects involved in our study 12 out 57, spend one hour of walking activities (Chart no. 7). At the level of gender there is not a statistically significant difference respecting the time spent walking ($\chi^2 = 11.66$, $df = 11$, $p = .390$).

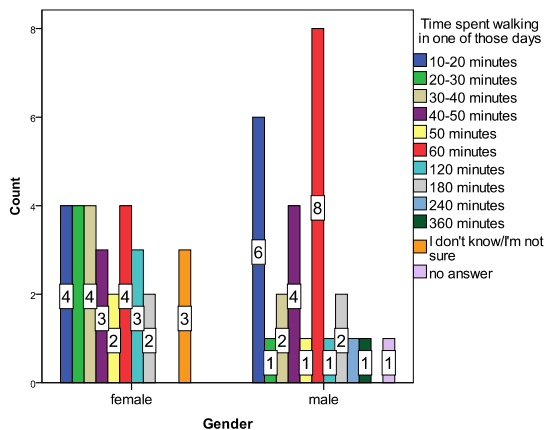


Chart no. 7. Gender and the time spent walking

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People from this study, more exactly 14 out of 57 declared that they spend six hours per day sitting during a week (Chart no. 8). There is not a statistically significant difference at the level of gender and the time spent seated ($\chi^2 = 5.77, df = 9, p = .763$).

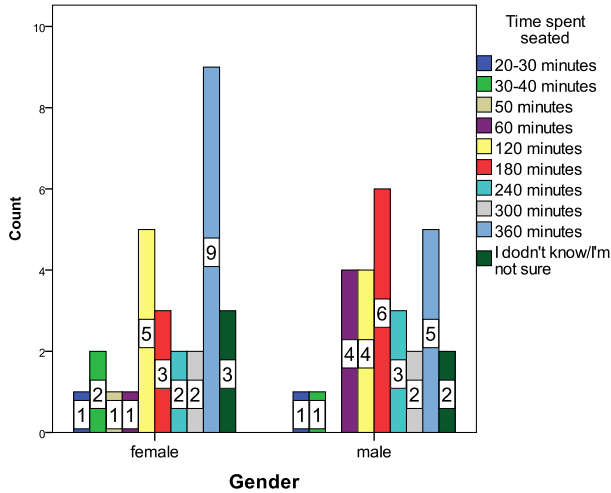


Chart no. 8. Gender and time spent seated

According to our data, which allowed us to establish the total time of vigorous, moderate and walking activities, 29 people have a high level of physical activity, 23 of them a moderate level and 5 of them have a low physical activity level (Chart no. 9). In this case we, also, had a statistically significant difference ($\chi^2 = 6.49, df = 2, p = .039$).

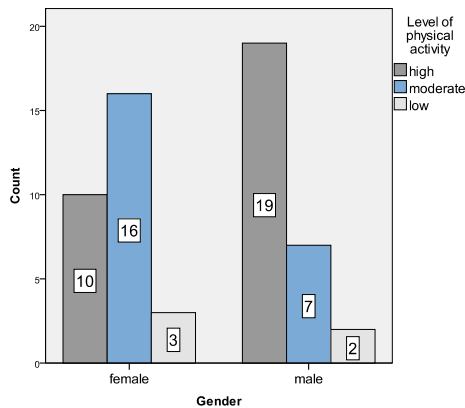


Chart no. 9. Gender and the level of physical activity

Most of the participants, 23 out of 57, declared that their actual fitness level is lower than it was in the previous year, 15 of them have the same fitness level, while 16 of them consider that they are more physically active than the year before (Chart no. 10). There is not a statistically significant difference at the level of gender and the actual fitness level respecting the previous year ($\chi^2 = 5.43$, $df = 3$, $p = .142$).

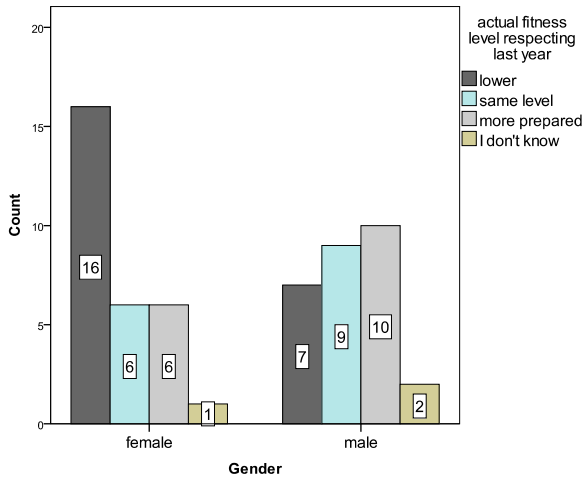


Chart no. 10. Gender and actual fitness level respecting last year

Discussions

In some previous studies there were recommendations on how a person could stay physically active by exercising at home, following on-line fitness programs and how to avoid extended hours of sitting and a sedentary behavior (Woods et al., 2020, p. 62).

In a different study the authors sustain that the main way of being active during the period of lock down was by doing sports activities at home, offering few examples of vigorous activities like carrying loads up and down the stairs (Maugeri et al., 2020, p.6).

In another study it was measured how the physical activity level is affected by the Covid-19 pandemic period. The results evidenced that the level of physical activity have generally decreased moreover at the level of boys, one of the reason was because they have been involved in organized sports activities before restrictions and during pandemic those activities were suspended (Sekulic et al., 2020, p. 11)

If we intend to continue our study, there is necessary to increase the number of participants and also to find/create instruments for measuring how people/youth migrate from a sport activity to another.

Conclusions

The majority of participants involved in this study, more exactly 18 of them are included in the overweight category, meanwhile 23 women out of 29 have normal weight. The result could be influenced by the fact that men have more muscular mass achieved by practicing different sports activities when they were younger.

Participants of this study stated that they usually spend 30-40 minutes of vigorous physical activities, meanwhile, they spend one hour for moderate physical activities.

Some of the participants, 14 of them who were involved in this study spent 6 hours sitting, and this sedentary behavior could affect their state of health.

The most part of those involved in this study, 29 of them, are included in the category of high physical activity level, the majority of them being male. In the category of moderate activity level, we have 23 people, 16 of them are female. There is also a statistically significant difference at the level of genders and physical activity level.

Considering their perception about personal fitness level in comparison to the previous year, 23 of the participants in this study have declared that their fitness level decreased. Therefore, the pandemic situation have also affected their habits concerning sports activities.

REFERENCES

1. Arantes de Araújo, L., Veloso, C., Souza, M., Coelho de Azevedo, J., Tarro, G., (2020), The potential impact of the COVID-19 pandemic on child growth and development: a systematic review, *Jornal de Pediatria*, ISSN 0021-7557, <https://doi.org/10.1016/j.jped.2020.08.008>.
2. Ashley, Y.-Y. W., Ka-Kin Ling, S, Lobo, H.-T., L.,Ying-Kan Law, G., Chi-Hung So, R., Chi-Wo Lee, D., Chung-Fai Yau, F., Shu-Hang Yung, P. (2020) Impact of the COVID-19 pandemic on sports and exercise, *Asia-Pacific Journal of Sports Medicine, Arthroscopy, Rehabilitation and Technology*, Volume 22, Pages 39-44, ISSN 2214-6873, <https://doi.org/10.1016/j.asmart.2020.07.006>.
3. International Physical Activity Questionnaire (n.d.). Retrieved from <https://sites.google.com/site/theipaq/home>

4. Maugeri, G., Castrogiovanni, P., Battaglia, G., Pippi, R., D'Agata, V., Palma, A., Di Rosa, M., & Musumeci, G. (2020). The impact of physical activity on psychological health during Covid-19 pandemic in Italy. *Heliyon*, 6(6), e04315. <https://doi.org/10.1016/j.heliyon.2020.e04315>
5. National Heart Lung and Blood institute, Calculate your body mass index, (n.d.). Retrieved from http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm 10/2020).
6. Ruopeng An (2020). Projecting the impact of the coronavirus disease-2019 pandemic on childhood obesity in the United States: A microsimulation model, *Journal of Sport and Health Science*, Volume 9, Issue 4, Pages 302-312, ISSN 2095-2546, <https://doi.org/10.1016/j.jshs.2020.05.006>.
7. Sekulic, Damir & Blazević, Mateo & Gilic, Barbara & Kvesić, Ivan & Zenic, Natasa. (2020). Prospective Analysis of Levels and Correlates of Physical Activity During COVID-19 Pandemic and Imposed Rules of Social Distancing; Gender Specific Study Among Adolescents from Southern Croatia. *Sustainability*. 12. 4072. [10.3390/su12104072](https://doi.org/10.3390/su12104072).
8. Wong, A.Y., Ling, S.K., Louie, L.H., Law, G.Y., So, R.C., Lee, D.C., Yau, F.C., & Yung, P.S. (2020). Impact of the COVID-19 pandemic on sports and exercise. *Asia-Pacific journal of sports medicine, arthroscopy, rehabilitation and technology*, 22, 39–44. <https://doi.org/10.1016/j.asmart.2020.07.006>
9. Woods, J.A., Hutchinson, N.T., Powers, S.K., Roberts, W.O., Gomez-Cabrera, M.C., Radak, Z., Berkes, I., Boros, A., Boldogh, I., Leeuwenburgh, C., Coelho-Júnior, H.J., Marzetti, E., Cheng, Y., Liu, J., Durstine, J.L., Sun, J., & Ji, L.L. (2020). The COVID-19 pandemic and physical activity. *Sports Medicine and Health Science*, 2(2), 55–64. <https://doi.org/10.1016/j.smhs.2020.05.006>