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Analysis of the Level of Physical Activity of University Faculty Members during the Coronavirus Pandemic

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ABSTRACT

The purpose of this study was to investigate the level of physical activity of faculty members at Allameh Tabatabai University during the coronavirus pandemic. This applied research has been done by a descriptive method. The statistical population of the study was the Allameh Tabatabai University faculty members in Iran. 284 people were selected through the available sampling method. A valid and reliable researcher-developed questionnaire was used for data collection, and a T-test was conducted for data analysis. The results of this study showed that the faculty members of the university do not have intense and moderate activities during the COVID-19 pandemic. But the general knowledge about the benefits of exercising during the coronavirus period has increased. In a general conclusion, COVID -19 crisis has created inactivity among university faculty members. Therefore, it is necessary to design and implement plans to increase the physical activity level among faculty members.

Introduction

The worldwide spread of Covid-19 has caused concern among all governments and peoples around the world, and it is so important that it is even recognized as the most important global health issue. According to the world health organization, the spread of the new coronavirus should be considered as an international health issue(Pokhrel & Chhetri, 2021). The crisis has prompted the government to take protective measures, including lockdowns, travel bans, closures of shopping malls, cultural centers, leisure centers, sports centers, schools and universities(Eyal, Lipsitch, & Smith, 2020). This restriction has disrupted human activity(Stockwell et al., 2021).

Staying at home seems to be the best way to prevent the spread of the virus(Narzisi, 2020). But it can also lead to reduced physical activity(Chen et al., 2020).e This causes sedentary, behaviors(Abukabda & Razzaque, 2021). On the other hand, staying home for long periods of time

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can increase anxiety and depression(Hyland et al., 2020). However, regular physical activity is, associated with health(Sailani et al., 2019).

Physical activity reduces the levels of mental and emotional disorders, reduces musculoskeletal disorders(D. Woods, Breslin, & Hassan, 2017), increases self-confidence(P.-J. Chang, Wray, & Lin, 2014), and reduces levels of stress, anxiety and depression(Y.-C. Chang, Yeh, Pai, & Huang, 2018). In this regard, research shows that regular physical activity leads to strengthening the immune system, which is one of the most important factors in combating Coronavirus disease(Li et al., 2020). Exercise at home using a variety of safe, simple and applicable exercises is suitable to prevent sedentary lifestyle. These exercises can include stretching, balance, dynamic, and other weight-bearing exercises. Maintaining regular physical activity and daily exercise at home is an important strategy for a healthy life during the coronavirus crisis(Wang et al., 2020).

There has been a lot of research on the benefits of physical activity in Covid-19 conditions. These studies show the benefits of physical activity. Even relatively low volume of simple physical activity, such as walking or cycling has been shown to induce favorable effects on various metabolic markers nneearrhy add eeeeaeet p..... .. iittee as ii n ff tttt -meal walking may blunt the glycemic response in healthy women and in women at ffnnnhhhbbbbeerrrr r aaiiii et ahhddddd tttt tttt n a another easily available physical activity, stair climbing and descending sufficed to reduce post-prandial glucose levels in inactive middle aged men with impaired glucose tolerance (Füzéki, Groneberg, & Banzer, 2020).

A goal of any beginning PA or exercise program is to progressively work toward completing at least one-half hour of moderate PA every day or at least twenty minutes of vigorous PA every other day of the week. Ideally, strengthening-type activities are included in daily activities at least twice a week. Individuals susceptible to chronic diseases such as cardiovascular or pulmonary disease should seek advice from health care providers regarding safe exercises(J. A. Woods et al., 2020). Recommendations for children and youth aged five to 17 years are the accumulation of at least 60 minutes of moderate - to vigorous-intensity daily PA. In addition, vigorous-intensity activities that strengthen muscle and bone are recommended at least three times per week(Maugeri et al., 2020).

As mentioned, the public health recommendationsc(i.e., stay-at-home orders, closures of parks, gymnasiums, and fitness centers) to prevent SARS-CoV-2 spread have the potential to reduce daily physical activity (PA). These recommendations are unfortunate because daily exercise may help combat the disease by boosting our immune systems and counteracting some of the co-morbidities like obesity, diabetes, hypertension, and serious heart conditions that make us more susceptible to severe COVID-19 illness. The COVID-19 pandemic has a negative impact on physical activity. Because the level of physical activity reduction caused levels of mood disorders, physical activity programs should be highly encouraged (Puccinelli et al., 2021).

Puccinelli et al. (2021) found that the level of physical activity during the social distancing caused by COVID-19 pandemic was lower than the period before the pandemic(Puccinelli et al., 2021). According to a study conducted by Amini et al. (2020), the level of physical activity decreased significantly during COVID-19 compared to pre-COVID-19 in both sexes and age groups(Amini et al., 2020). Different research conducted around the world demonstrated that physical activity behaviors changed during COVID-19 pandemic, and some studies showed that while most people decreased their physical activities, some increased their(Caputo & Reichert, 2020; Constant, Conserve, Gallopel-Morvan, & Raude, 2020; Maltagliati et al., 2021).

One of the sections of society that has been affected by coronavirus is the academic community. Many international students returned home and the student dormitory was temporarily closed. On the other hand, university staff and Faculty members are restricted from going to university, and like most people, they follow a strategy of staying home(ÜÜEE RiiHaoooo”,,, & aaaa ,, 0000). Therefore, considering an integrated and comprehensive approach for reducing the inactivity caused by COVID-19 is of great importance (Amini et al., 2020). Findings of López-Valenciano (2021) showed that physical activity level university students has been reduced during the COVID-19 pandemic in different countries (López-Valenciano, Suárez-Iglesias, Sanchez-Lastra, & Ayán, 2021).

Faculty members of Allameh Tabatabai University, like many faculty members in other countries, follow this strategy to prevent the spread of coronavirus. In this global crisis, universities are offering online classes for students. But as mentioned, this can lead to inactivity among university faculty members. Therefore, it is necessary to measure the amount of physical activity and provide proper recommendations. Because the changes in work environment and life style have negative effects on eeeæ’’’’’’ well-being and health during the distance teaching (Almhdawi et al., 2021), considering their physical activity level during COVID-19 pandemic can be assessed as a problem. Therefore, to achieve the research objectives, this study was conducted to measure the level of physical activity of the faculty members of Allameh Tabatabai University in Iran.

Methodology

The present study is an applied research in terms of nature and purpose, in view point of the type of data search is quantitative, and from the aspect of data analysis method is descriptive that data collection was done in the field. The statistical population of this study includes all faculty members of Allameh Tabatabai University (N=670). This questionnaire was online and was sent to all faculty members through the University Vice Chancellor for Research. Within a month, the questionnaires were completed. According to Morgan's table, 284 correct questionnaires were selected through random sampling and analyzed. Data were collected using a researcher-developed 21-item questionnaire based on the International Physical Activity Questionnaire (IPAQ)t on analysis of physical activity of university faculty members in coronavirus conditions. All items are operationalized with a five-point Likert scale (strongly disagree= 1, completely agree= 5). After confirming the content validity of the questionnaire by experts, the researchers collected quantitative data. The questionnaire included questions about intense and moderate physical activity, people's awareness of the benefits of physical activity, and their motivation to engage in physical activity. In order to evaluate the reliability of internal consistency and its stability, Cronbach's alpha index was used in a preliminary study (including 30 people) that the alpha value for the whole questionnaire was 0.779, which this coefficient was confirmed again after complete collection of questionnaires. In order to analyze the research data, demographic data and a questionnaire were first examined using descriptive statistical methods. In the inferential statistics section, the data distribution was tested using the Kolmogrov-Smirnov test. Then T-test, were used to answer the research hypotheses. Research data were analyzed using SPSS24 software.

Results

Description of the demographic information of the research sample showed that 25% were female (60 people). 75% were male (180 people), and also respondents were mostly in the age group of 36 to 40 years with 41.3% (99 people). 28% of respondents had regular exercise and 72% of respondents did not exercise regularly.

Table 1. Description of the demographic information

Gender	Frequency number	Frequency percentage
Male	60	25
Female	180	75
Total	240	100

Table 2. Description of regular exercise

Activity history	Frequency number	Frequency percentage
physical activities	68	28
Lack of physical activity	172	72

The findings showed that faculty members did not engage in strenuous physical activity during the coronavirus, such as heavy lifting, digging, aerobics, brisk cycling, soccer, and regular running for more than an hour during the day (table 3).

Table 3. One Sample T-test for Intense physical activity

Variables	t	df	Sig. (2-tailed)	Mean Difference	95% confidence interval Low limit	High limit
Intense physical activity	-27.74	239	0.001	-1.23	-1.23	-1.15

Also the findings showed that faculty members did not engage in moderate physical activity during the coronavirus, Such as carrying light loads, medium speed cycling or volleyball, for more than an hour during the day (table 4).

Table 4. One Sample T-test for moderate physical activity

Variables	t	df	Sig. (2-tailed)	Mean Difference	95% confidence interval Low limit	High limit
moderate physical activity	-17.32	239	0.003	-0.95	-0.84	-1.05

As observed, during the coronavirus period, university faculty members did not engage in regular exercise, and this can lead to inactivity in these individuals. The researcher-made questionnaire included questions about awareness of the benefits of exercise during the coronavirus period, to get information about increasing sports information of university faculty members. Table 5 shows faculty members' awareness of the benefits of exercise.

Table 5. One Sample T-test for faculty members' awareness

Variables	t	df	Sig. (2-tailed)	Mean Difference	95% confidence interval Low limit	High limit
faculty members' awareness	16.82	239	0.001	0.75	0.66	0.84

According to the information in Table 5, it can be said that because the upper and lower limits are positive, then the population average in that variable is more than the test value. In fact, university faculty members have learned more about the benefits of regular physical activity during the coronavirus crisis.

Discussion and Conclusion

Due to the prevalence of coronavirus in different countries and the fact that this issue has become the most important health issue in the eyes of the World Health Organization, various researches in relevant fields have been on the agenda of researchers and researchers.

In this regard, various researches in the field of sports and health have been conducted to determine the impact of exercise and physical activity on this epidemic. Research in the field of sports and health shows that physical activity is highly associated with limiting human health-related injuries due to the epidemic of coronavirus (Li et al., 2020). Encouraging or mandating that people should remain within their homes with discontinued daily life activities may unintentionally increase sedentary behavior, decrease general PA, and inflict negative health consequences. Decreased PA will lower mechanical load, metabolic rate, and energy expenditure, which may result in a decline in physical fitness and an energy surplus. All are well-known risk-factors for future disease manifestations, imposing further economic burden on tomorrow's society(Jakobsson, Malm, Furberg, Ekelund, & Svensson, 2020). Maintaining regular PA during self-isolation is important for the prevention of future chronic health conditions due to a sedentary lifestyle. During crises, functional medical care and vital societal services are of the highest priority. To prevent additional physical and mental distress, governments, public health authorities, and the public itself should care also for maintaining PA during the COVID-19 pandemic.

Physical activity contributes to the reduction of overall cardiovascular risks, lowering both systolic and diastolic blood pressure and remodeling left ventricular hypertrophy(Hegde & Solomon, 2015). PA has also well- known positive effects on metabolic syndrome and insulin sensitivity. Therefore, one can assume that active individuals compared to sedentary people should have better control on high- risk comorbidities that increase susceptibility to severe COVID- 19. There are still, however, open questions regarding PA and COVID- 19 predisposition. Firstly, some reports highlighted that, while moderate- intensity exercise is beneficial for the immune system, single bouts of prolonged exercise can lead to immune suppression (eg, impairment of type I and II cytokine balance) in the hours and days following exercise, which may lead to higher infection risk(Simpson, Kunz, Agha, & Graff, 2015).

These views have been recently challenged by others, suggesting that PA, including high- intensity training, may also be beneficial and does not lead to clinically relevant immune suppression. Secondly, PA effect on ACE2 receptor modulation is reported, especially in animal studies; clinical consequences on angiotensin- related pathways, however, are still unclear in humans(Nunes-Silva et al., 2017).

Sports medicine research shows that with physical activity, active muscles produce chemicals that improve immune function, which in turn reduces the rate of infections and inflammation (Khoramipour et al., 2021).

Physical activity is a powerful preventative and therapeutic intervention for the most common chronic conditions that reduces the risk of severe infections. The effect of physical activity on the prevention and treatment of anxiety and depression can be beneficial during a coronavirus crisis. Physical activity also increases the effectiveness of vaccines, so an active lifestyle will continue to be associated with each stage of the epidemic(Ainsworth & Li, 2020). According to worldwide research, about 23% of men and 32% of women are at risk for coronavirus disease, severe coronavirus infections, and stress-related psychological symptoms. However, staying home for long periods of time can lead to decreased physical activity and increased sedentary behaviors that negatively affect immune function and increase the risk of developing chronic diseases. Given the current situation, research on physical activity and coronavirus is a global health need. In this regard, research related to physical activity can cover a wide range of basic sciences. Among the many research needs, the present study focused on analyzing the level of physical activity of faculty members of Allameh Tabatabai University.

The results of this study show that the faculty members of the university do not have intense and moderate activities and their participation in sports activities is very low and this issue is very worrying. Because these people have been teaching online for long hours and are sedentary under coronavirus conditions, it is necessary to consider exercise and physical activity programs for them.

The results of this study also showed that there was no significant difference between the statistical sample in terms of gender in intense physical activity, while there was a significant difference in moderate activity between females and males and according to the results, females were more active than males, more research is needed in this regard. Females may consider working at home as a physical activity, although scientifically, working at home is not a physical activity; physical activity is an activity in which the heart rate increases and sweating occurs.

The findings also showed that intense physical activity did not differ significantly in any of the age groups, in other words, there was no significant difference between the statistical samples in different age groups. However, regarding moderate physical activity, the findings showed that there was a significant difference between the statistical sample and faculty members less than 35 years old had more moderate physical activity. This group includes a total of 24% of the statistical sample of this study. This has been proven many times in various researches. Unfortunately, sedentary lifestyle is more common among middle-aged and elderly people, so it is necessary to design and implement physical activity programs for this group.

On the other hand, the results of this study showed that the general knowledge and awareness of university faculty members about the benefits of exercising during the coronavirus period has increased. In other words, the statistical population of the research has turned its attention to physical activity and has obtained information in the field of physical activity and health, which is very satisfying. Because increasing people's knowledge about physical activity causes them to participate in physical activity. Other results of this study showed that university faculty members tend to participate in physical activities in post-corona conditions. Therefore, it is necessary to design sports programs and physical activity for the faculty members of the university.

In a general conclusion, it can be said that the faculty members of Allameh Tabatabai University in the conditions and era of coronavirus did not have intense and moderate physical activities and did not participate in physical activities. However, their knowledge and awareness of the benefits of sports has increased and their willingness to participate in physical activities has increased in post-corona situations. Due to the existence of uncontrollable intervention variables in research, more research is needed and generalization of results should be done with caution.

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