PJSS
dergipark.gov.tr/psbd

Pamukkale Journal of Sport Sciences

2020 Vol. 11 No. 3, 28-41

ISSN: 1309-0356

accepted: 19.09.2020

Physical activity and physical fitness levels of convicts/detainees remaining in closed penalty execution institutions

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Abstract

The purpose of this study was to determine whether the levels of physical activity and physical fitness of convicts/detainees in Gaziantep L Type Closed Penal Execution Institution differs according to the age and length of the sentence and their relationship with the time spent in prison. Overall, 463 male convict and detainees participated in the study. The average age of the participants was 30.05 (SD= 8.66). The Leisure Time Exercise Questionnaire and Physical Fitness Questionnaire were used to collect data. Within the scope of the research, the necessary ethics committee approval and permissions were obtained from official institutions before data was collected. Only volunteer convicts/detainees were included in the research. In terms of research findings, a difference was found between the physical activity levels of convicts/detainees between age groups that the physical activity level of convicts/detainees aged 30 and lower was higher than those of convicts/detainees aged 41 and older, but the level of physical activity of convicts/detainees aged between 31-40 was similar to that of the other two age groups. The physical activity levels of the convicts/detainees did not make any a difference in terms of the length of the penalty received. In general, the physical activity level of convicts/detainees was found as "active" (30 years old and below) and "moderately active" (31-40 years old, 41 years old and above). It was found that the physical fitness level decreased with increasing age. Physical fitness levels of younger convicts/detainees were higher. In terms of the sentence period received, the level of physical activity showed difference, and the physical fitness level of the convicts/detainees, whose sentence was 10 years or less, were found to be higher than those of 11-20 years or more. However, in general, physical fitness levels of convicts/detainees emerged as “inactive”. While the findings obtained showed high levels of physical activity based on the statements of convicts/detainees, they do not indicate the same positive finding at the level of physical fitness. For this reason, it is recommended to conduct more research on physical fitness and physical activity levels of convicts/detainees and to examine them with different samples.

Keywords: Physical activity, leisure time physical activity, physical fitness, convict, detainee

“This study was supported by the Research Fund of Mersin University in Turkey with Project

Number: 2017-2-TP2-2550”.

1.INTRODUCTION

The physical activity is defined as energy expenditure as a result of anybody movement through skeletal muscles, which requires energy consumption above basal level (Saygın, Karacabey, & Saygın, 2011; World Health Organisation [WHO], 2018a). The positive effects of regular moderate-intensity (walking, cycling, etc.) on diseases such as cardiovascular diseases, diabetes, colon and breast cancer, depression has been scientifically proven; and it was determined that the absence of physical activity is among the important causes leading to death in the world with 3.2 million people every year (WHO, 2018b). According to WHO (2010) data, 23% of individuals aged 18 and over in the world in 2010 had insufficient physical activity levels; in Turkey, this ratio has been reported to be 28.1%. In its report published in 2018, WHO stated that inadequate physical activity is among the 10 important causes of death; one in every four people in the world is not active enough; and more than 80% of the world adolescent population is being inadequately active. To benefit from the effects of physical activity, adults between the ages of 18-64 recommended to do at least 150 min of moderate intensity physical activity throughout the week; at least 75 min high intensity; or physical activity involving a combination of moderate to high intensity activity; increasing physical activity to 300 minutes per week for physical activity to provide additional health benefits; and muscle strengthening activities involving the main muscle groups are also recommended to be done 2 or more days a week (WHO, 2018c).

Physical fitness is the set of qualities that people possess or attain, unlike physical activity, which is related to the movement of individuals (Caspersen, Powell, & Christenson, 1985). The components of physical fitness are basically divided into 2: health-related physical fitness and skill-related physical fitness. Health-related physical fitness includes cardio respiratory endurance, muscular endurance, muscular strength, body composition, and flexibility; skill-related physical fitness includes agility, balance, coordination, speed, strength, and reaction time (Caspersen et al., 1985). Physical activity and physical fitness are closely related that physical fitness is determined as a result of physical activity performed for certain weeks or months; and physical fitness of individuals who do physical activity often increases (Blair, Cheng, & Holder, 2001). Research has shown that physical activity and physical fitness reduce the mortality rate from all causes of death, including cardiovascular diseases, but it has not precisely determined how intense physical activity has an impact on the stated causes of death. Some researchers argued that moderate and high intensity physical activity had more impact, while others emphasized that moderate intensity physical activity would be safer, especially for individuals who followed a sedentary way in their previous lives (Warburton, Nicol, & Bredin, 2006; Faff, 2004; Paffanger, Hyde, Wing, & Hsieh, 1986).

Since scientific research findings is demonstrated that physical activity and a certain level of physical fitness are beneficial not only physically but also psychologically for all individuals (Paluska & Schwenk, 2000; Netz, Wu, Becker, & Tenenbaum, 2005), programs for increasing physical activity and physical fitness level are implemented in every segment of society. Convicts/detainees who are in prisons for various crimes are also part of the society, and the right to organize activities that will contribute to the mental and physical development of prisoners is among the duties of the state to protect and ensure the physical and mental health of the convicts/detainees (Ministry of Justice, 2020). Diseases threatening the world with a death such as cardiovascular diseases, cancer, respiratory system diseases, diabetes create more danger for convicts/detainees. According to WHO's research findings on Prisons and Health in 2014, 48% of deaths in prisons worldwide are caused by cardiovascular diseases, 21% cancer, 12% respiratory system diseases, and 3.5% diabetes; the vast majority of these deaths occur in low and medium income countries. It was also stated that the four important factors causing these deaths in prisons were smoking, unhealthy nutrition, inactivity and excessive alcohol (WHO, 2014).

While physical fitness and physical activity have been given importance in terms of public health, research conducted for the convicts/detainees not only in Turkey, but also in the world is limited. The scarcity of these scientific researches prevents the problem from being revealed. In the limited number of studies conducted abroad, it was emphasized that the prison population is more disadvantageous in terms of health than the general population, and physical activity and physical fitness levels are inadequate (Mannocci et al., 2015; Fazel & Baillargeon, 2011; Olaitan, Shmaila, Sikiru, & Lawal, 2010). However, there are also studies showing that the prison population has a higher level of physical activity and physical fitness than the general population. The number of studies especially examining physical activity and physical fitness levels of convicts/detainees is so limited. Considering that prisons are not just a punitive place where criminals stay for punishment, but also a rehabilitation area, it is a fact that convicts'/detainees' healthy lives in prisons will be reflected in their life after prison. From this point of view, it is important to reveal the physical fitness and physical activity levels of convicts/detainees in prison, in order to take precautions regarding the issue beforehand. For this reason, the purpose of this study is to examine whether the physical fitness and physical activity levels of the convicts/detainees staying in the Gaziantep Closed Penal Execution Institution differ according to age and the duration of the sentence, and whether physical fitness and physical activity levels are related to the period of conviction.

2.METHOD

The descriptive model that aims to identify and quantify the variables measured in this study as they exist; the comparative research model aimed at examining the differences between two or more groups on one or more dependent variables; and the correlational model that examines the causal relationships between two or more variables in one or more groups were used (Fraenkel, Wallen, & Hyun, 2011).

Participants

In total, 463 male convicts/detainees who stayed in Gaziantep L Type Closed Penitentiary Institution participated in the study. The age range of the participants varies between 19-72 years. Mean age was found 34.05 (*SD*= 8.66). Of a total of 463 participants, 39.3% are aged 30 and under, 40% are between 31-40 years old and 20.7% of them are 41 years old and above. In addition, 21.4% of the convicts/detainees who participated in the study were sentenced to 10 years or less, 29.6% to 11-20 years, and 47.1% to 21 years or more.

Data Collection Instruments

In order to collect data, "Demographic Information Form", "Physical Fitness Questionnaire" and "Leisure Time Exercise Questionnaire" was used in the research.

Demographic Information Form

In the Demographic Information Form developed by the researcher, there are questions regarding the age, punishment and conviction, detention period for convicts/detainees.

Leisure Time Exercise Questionnaire

The Leisure Time Exercise Questionnaire (LTEQ) used in the study includes questions about the exercise habits of individuals in their free time at least 15 minutes in a week and aims to reveal the activity level of individuals (Godin & Shephard, 1985, 1997; Godin, 2011). The LTEQ was adapted to Turkish for use in the adult population by Yerlisu Lapa and Yağar (2015). Although the questionnaire

is single-factor, it consists of 3 questions in total and determines the level of strenuous, moderate and mild/light leisure time exercise in line with the answers given to the questions. To calculate the total score; the scores obtained by multiplying the high-intensity activities with 9, medium intensity activities with 5 and mild-intensity activities 3 and adding scores obtained. The total score obtained shows the level of activity of the individual in leisure time. The evaluation ranges are designed to be "active" with scores of 24 and above, "moderately active" with scores of 14-23, and "insufficiently active/sedentary" with scores of 13 and below. LTEQ is formulated as follows:

LTEQ score= (9 x strenuous exercise) + (5 x moderate exercise) + (3 x mild/light exercise)

The test-retest reliability coefficient of the original questionnaire is .74 for the overall questionnaire and .94, .46 and .48 for each question, respectively (Godin & Shephard, 1985); in the process of adapting the questionnaire to Turkish, the reliability coefficient was calculated as .84 for the overall questionnaire and .80, .76 and .72 respectively for each question (Yerlisu Lapa & Yağar, 2015). In order to calculate the test-retest reliability coefficient within the scope of this study, a questionnaire was applied to a 200 *convict* and detainee group twice with an interval of about two weeks. The test-retest reliability coefficient obtained was calculated as .87 for the overall questionnaire was .84, .89 and .87 for each question.

Physical Fitness Questionnarie

Researches have revealed that aerobic fitness is one of the important indicators of cardiovascular health and the most valid and accepted procedure that determines aerobic fitness is the maximum oxygen intake (ventilatory gas analysis). While VO2peak expresses the maximal use of oxygen used by the individual when he exercises large muscle groups; indirectly, the treadmill depletion time can be measured by obtaining the submaximal amount of work or the response of the heartbeat to exercise. Although the importance of aerobic physical fitness for health and VO2peak is naturally known, these measurements are generally performed by few people in health centers or laboratory environments due to their expensive and time consuming features. For this reason, "nonexercise" measurements came to the agenda and gained popularity. The purpose of these measurements is to estimate VO2peak with easily accessible information such as age, gender, physical activity based on the declaration, and body composition. The "exercise-free" VO2peak (cardiorespiratory fitness) method used in this study is the method that the research group, which Nes, Janszky, Vatten, Nilsen, Aspenes and Wisloff (2011) belong to, has validity with a sample of 4637.

Parameters used in the determination of physical fitness within the scope of the current research; gender, age, height (cm), body weight (kg), maximum heart rate (220-age), frequency of exercise, duration of exercise, degree of difficulty of the exercise, waist circumference, resting heart rate. As a result of entering these parameters, a physical fitness score is obtained. For men, these parameters are formulated as (Nauman et al., 2017; Nauman, Tauschek, Kaminsky, Nes & Wisloff, 2017; Nes et al., 2011; Nes, Vatten, Nauman, Janszky, & Wisloff, 2014):

Physical Fitness Score= 100.27 - (0.296 X age) – (0.369 X waist circumference) – (0.155 X resting herat rate) + (0.226 X physical activity)

Data Collection Procedures

Before starting the research, necessary permits were obtained from Mersin University Social Sciences Research Ethics Committee and General Directorate of Prisons and Detention Houses. After obtaining the official permissions, the convicts/detainees who remained in Gaziantep L Type Closed Penitentiary Institution were visited and given information about the research and only those who volunteered to participate in the research were included.

Data Analysis

In analyzing the data, IBM SPSS 20.0 Statistics Package Program was used. In order to determine whether there is a statistically significant difference between physical activity and physical fitness levels in terms of convicts/detainees according to their age groups (age 30 and under, age 31-40, age 41 and over) and penalty periods (10 years and under, 11-20 years, 21-30 years) Kruskal-Wallis and Mann Whitney-U Test; and to determine whether there is a statistically significant relationship between convicts'/detainees' convict/detention periods in terms of physical activity and physical fitness levels the Spearman's Rank Order Correlation was used.

3.RESULTS

The mean leisure time physical activity level of the convicts/detainees staying in a closed prison is 24.89 (*SD*= 18.89) and the mean of physical fitness score is 43.75 (*SD*= 6.74). Kruskal Wallis Test was applied to reveal whether the level of physical activity and physical fitness of convicts/detainees differed by age groups (30 and below, 31-40 years, 41 years and above), and the results of the analysis revealed that there was a statistically significant difference between the leisure time physical activity [χ^2 (2)= 6.70, p= .036] and physical fitness [χ^2 (2)= 127.18, p= .001] levels of 3 different age groups. According to the age groups of the participants, the mean averages of leisure time physical activity were 250.74 for the age group 30 and below, 224.67 for the age group of 31-40, 210.58 for the age of 41 and over; physical fitness levels were 303.78 for the age group 30 and under, 222.11 for the age group of 31-40 and 114.98 for the age of 41 and over. The average and standard deviation values of the participants for their leisure time physical activity and physical fitness level is shown in Table 1.

Tablo 1. Means and standard deviations for leisure time physical activity and physical fitness level of participants by age groups

		N	Mean	SD
Physical Activity	30 years and below	182	27.38	18.93
	31-40 years	185	23.96	18.78
	41 years and above	96	21.94	18.61
	Total	463	24.89	18.89
Physical Fitness	30 years and below	182	47.02	6.32
	31-40 years	185	43.52	5.36
	41 years and above	96	37.98	5.94
	Total	463	43.75	6.74

Mann-Whitney U test results applied to reveal the difference between three age groups showed that there was a statistically significant difference between the groups “30 years and below” and “41 years and above” in terms of leisure time physical activity level (U= 7224.00, p= .017); however, it was found that there was no significant difference between the groups “30 years and below” and “31-40 years” (U= 14935.50, p= .060), and “31-40 years old” and “41 years and above” (U= 8336.00, p= .397). According to these findings, the leisure time physical activity level (Mdn= 21.00) of the “30 years and below” group is higher than the participants whose age group is “41 years and above” (Mdn= 18.00). The leisure time physical activity level of the participants whose age group was “31-40 years” was similar to the participants in the other two age groups (Mdn= 18.00).

Mann-Whitney U Test also applied to reveal the difference between the physical fitness levels of participants in three age groups. The results of the analysis revealed that there was a statisatically significant difference between the physical fitness levels of participants aged “30 years and below” and aged between “31-40 years” (U= 10369.00, p= .001); participants aged “30 years and below” and aged “41 years and above” (U= 2137.50, p= .001); and participants aged between “31-40 years” and aged “41 years and above” (U= 4244.50, p= .001). The physical fitness level of the participants aged “30 years and below” (Mdn= 47.00) is higher than the participants whose ages between “31-40 years” (Mdn= 43.00) and participants aged “41 years and above” (Mdn= 39.00). In addition, the physical fitness level of the participants whose age group was “between 31-40 years old” (Mdn= 43.00) was found to be higher than the participants aged “41 years and above” (Mdn= 39.00).

Kruskal-Wallis Test was applied to determine whether there was a statistically significant difference between leisure time physical activity and physical fitness levels according to the period of punishment (10 years and below, 11-20 years, and 21 years and above) that the convicts/detainees sentenced. The mean and standard deviation values of the participants according to the penalty time groups are shown in Table 2. The results of the Kruskal-Wallis Test revealed that there was no statistically significant difference in the leisure time physical activity level of the participants whose penalty period was "10 years and below", "11-20 years" and "21 years and above" [χ^2 (2)= 3.230, p= .199]. The mean ranks of the leisure time physical activity levels of the participants whose peanlty period was "10 years and below", between “11-20 years" and "21 years and above” were similar and 246.34, 215.56 and 226.45 respectively.

The results of the Kruskal-Wallis Test also revealed statistically significant difference between the physical fitness levels of the participants whose penalty period was "10 years and below" and between "11-20 years" (U= 4854.50, p=. 001) and participants whose penalty period was "10 years and below" and "21 years and above" (U= 7996.00, p= .001). However, it was also revealed that there was no statistically significant difference between the physical fitness levels of the participants whose penalty period was between “11-20 years” and “21 years and above” (U= 14171.00, p= .417). According to these findings, the physical fitness level of the participants whose penalty period “10 years and below” (Mdn= 47.00) was significantly higher than the participants whose penalty period was between “11-20 years” years” (Mdn= 43.00) and “21 years and above” (Mdn= 43.50).

Table 2. Means and standard deviations for leisure time physical activity and physical fitness level of participants by length of sentence groups

		N	Mean	SD
Physical Activity	10 years and below	99	27.56	19.59
	11-20 years	137	22.25	16.22
	21 years and above	218	24.95	19.86
	Total	454	24.70	18.83
Physical Fitness	10 years and below	99	45.91	7.71
	11-20 years	137	42.91	6.49
	21 years and above	218	43.30	6.28
	Total	454	43.75	6.76

The results of Spearman's Rank Order Correlation analysis applied to determine whether there is a statistically significant relationship between convicts'/detainees' physical activity and physical fitness scores and their stay in prison revealed that the physical activity score does not have a significant relationship with the period of punishment, r_s= - .033, p= .48. There was a statistically significant, inverse and low level relationship between physical fitness score and time spent in prison, r_s= -.134, p= .01. According to these findings, as the time spent in prison increases, physical fitness decreases.

4.DISCUSSION and CONCLUSION

The findings obtained from the study showed that the physical activity levels of convicts/detainees differed by age groups, and that the level of physical activity of convicts/detainees aged 30 and below was higher than those of 41 years and older; He revealed that the level of physical activity of convicts/detainees between the ages of 31-40 is similar to the other two age groups. In addition to these findings that reveal the difference in terms of physical activity, it was found that convicts/detainees aged 30 and under were "active", and convicts/detainees aged 31-40 and aged 41 and over were "moderately active". Similarly, according to the duration of punishment, there was no difference in terms of physical activity level among convicts/detainees who received sentences of 10 years and below, 11-20 years and 21 years or more, and the level of physical activity was found to be "active". In addition to the physical activity level, the physical fitness level measured, and the physical fitness levels of convicts/detainees aged 30 and under, age 31-40 and 41 and over were found different. Research findings reveal that the physical fitness level decreases with increasing age. However, the physical activity level of the three age groups were found to be "inactive". Similarly, in terms of the duration of the sentence, there was a difference between the convicts/detainees who received sentences of 10 years and below, 11-20 years and 21 years or more; The level of physical fitness of convicts/detainees convicted of 10 years or less is higher than that of convicts/detainees who are between 11 and 20 years of age, and between convicts/detainees who are sentenced between 11 and 20 years and those convicted of 21 years or more, in terms of physical fitness level has been revealed. Again, despite

the difference that appeared according to the type of sentence, the level of physical activity of convicts/detainees in all three sentence groups were found to be “inactive”.These findings revealed that the inmates within the scope of the research had a high level of physical activity but a low level of physical fitness. When the literature on the subject is analyzed, researches that are parallel and not parallel to these findings were found.

No number of research revealed physical activity and physical fitness levels of convicts/detainees in Turkey, but some research findings related to the parameters that affect physical activity and physical fitness levels in prisons reveal. For example, Yılmaz and Hazar (2004) examined the level of implementation of the physical education curriculum in prisons and the participation of convicts/detainees in physical education activities, and conducted a survey to 120 closed and 90 open prison inmates. It has been determined that 64.14% of the convicts/detainees participating in the study have been sentenced to 10 years or more and 79.52% have been in prison for 3 years or less. According to the findings of the research, Yılmaz and Hazar (2004) stated that convicts/detainees do not participate in sufficient sports activities in prisons and instead prefer more getting a profession and individual activities. Within the scope of the research, 26.7% of convicts/detainees staying in an open prison and 14.2% of those staying in closed prison participated in sports activities. Yılmaz and Hazar (2004) also reported that 58.6% of the convicts/detainees in prison were doing sports before entering prison, but this rate dropped 43.3% due to the lack of facilities in prisons. Again, 81.4% of the convicts/detainees stated that sports is an important need, but this facility is not available in prison and there is no shower facility after the physical activity. While the research findings of Yılmaz and Hazar (2004) reveal the inadequacy of prison in terms of physical activity facilities, the level of physical activity of prisoners 2020). However, the fact that the physical fitness level of prisoners is “inactive” contradicts these findings. One reason for high physical activity levels and low physical fitness levels is thought to be the inability of prisoners to determine their physical activity levels for various reasons.

Another study conducted by Özalp and Algun (2013) to compare the balance and physical performance of convicts/detainees and unconvicted men over 60 years of age and the researcher found no difference in weight, BMI, timed walk-and-go performance between the two groups, but BERG balance and six-minute walk were noticed. Inmate men's balance performances were lower than non-convicted men, but six-minute walking test performances were higher. The researcher attributed the reason for this low balance performance to the prisoners being in a limited area. Özalp and Algun (2013) stated that the prisoners walked in a straight line, not in different directions, depending on the restricted area. Özalp (2011) also stated that the prisoners spent most of the day with volleyed walks and this may have increased the six-minute walking test performance. Özalp and Algun’s (2013) walking performance findings due to walking also support these study findings. The level of physical activity based on the statement of prisoners in the current study was found to be “active”. The reason for this finding is thought to be the high level of physical activity of prisoners due to walking.

There are also international studies that supporting or not supporting this study findings. For example, Olaitan et al. (2010) examined the relationship between the physical fitness level of prisoners in Nigeria and their terms of length of the sentence. According to the research, the physical fitness levels of the prisoners included in the sample were low. In addition, as the length of sentence increases, the levels of physical fitness of prisoners decrease. Researchers declared as the main reason for this situation that the facilities for physical activity are limited. The findings of the study by Olaitan et al. (2010) contain results parallel to these study findings. The low level of physical fitness of prisoners in the sample of Olaitan et al. (2010) is similar to the current study findings. Parallel with the findings of Olaitan et al., in this study, physical fitness levels of convicts/detainees were reported as “inactive”.

(2010). In addition, although there are differences between the groups of convicts/detainees whose legth of the sentence is different, the physical fitness levels of all groups were found to be “inactive”; and the physical fitness levels negatively correlated with the sentence length. Olaitan et al. (2010) attributed this situation to the insufficient facilities available in prison. The same reason is thought to apply to the prison conditions in this study, which means that prisoners do not have the necessary facilities to improve their physical fitness. In another Nigerian sample, Oyeyemi, Jabbo, Oyeyemi and Aliyu (2015) examined the prisoners' cardiorespiratory fitness level and the relationship of this level with the prisoner's age, gender, and detention period. Findings have shown that although cardiorespiratory fitness of women is lower than men, cardiorespiratory fitness levels of prisoners are high. However, the findings also revealed that cardiorespiratory compliance was not related to the age and detention period. Oyeyemi et al. (2015) emphasized that the cardiorespiratory fitness of prisoners in high-security prisons is higher compared to the general population. This finding contradicts the findings of Olaitan et al. (2010) previously derived from the Nigerian sample. The researchers attributed this to the sporting opportunities that the prison offered for prisoners. The findings of Oyeyemi et al. (2015) contradict the current study and with the findings of Olaitan et al. (2010). These research findings showed that the level of physical fitness of prisoners was “inactive”, although there were differences in terms of the duration of the sentence. Oyeyemi et al. (2015) attributed this situation to the sports facilities of the prison. Based on the fact that the facilities that improve the physical fitness of the prison will have an impact on the physical fitness of the prisoners, the low physical fitness level of convicts/detainees in the current study was also linked to the lack of sports facilities.

In another study conducted in Italian prisons, Mannocci et al. (2017) were examined the characteristics of prisoners within the scope of various variables, including the level of physical activity. Emphasizing that physical well-being has a positive relationship with mental well-being, Manonocci et al. (2017) found that prisoners participated in the recommended daily physical activity level as in the general population of Italy. In addition, Mannocci et al. (2017) reported that age and duration of detention are related to physical activity; and also reported that the time spent for physical activity and exercise intensity increased with increasing age and detention. The reason for this is that physical activity is a good activity to spend time and to get life satisfaction for prisoners who have been sentenced for long periods and older ages. The findings of Mannocci et al. (2017) contradict and support the current study findings in some ways. First of all, Mannocci et al. (2017) found prisoners' physical activity level higher than the general population, and in the current study, the level of physical activity of prisoners (without comparison with the general population) was found to be “active” and “moderately active”. However, the finding of Mannocci et al. (2017) stating that the duration and intensity of physical activity increase depending on age do not coincide with this study. Although physical activity duration and intensity were not measured, the level of physical activity of convicts/detainees who were younger was higher in this study.

Herbert, Plugge, Foster and Doll (2012) found that Australian prisoners had more adequate and higher levels of physical activity than the general population compared to inmates in the UK. Emphasizing that this difference is not only due to cultural differences, the researchers stated that the wealth of opportunities provided for prisoners in Australia may have caused this difference. Herbert et al. (2012) also found that, in general, although the level of physical activity of prisoners varies, they participated sufficient in physical activity that WHO recommended globally (150 minutes and above). Cashin, Potter and Butler (2008), who examined the relationship between prisoners' physical activity and some psychological variables, stated that prisoners spent an average of 73.3 minutes of physical activity per week in the Australian sample, and 51% of female prisoners and 66% of male prisoners

participate in daily physical activity. In the American sample, Frey and Delaney (1996) examined the recreational activities of prisoners and found that weight lifting and jogging is the most popular sport-oriented recreational activity. In the study, it was also found that 51% of the prisoners never participated in weight lifting activity, 61% in light tempo running activity and 88% in handball activity. In addition, 31% of the prisoners were found to be moderately engaged in weight lifting activity, 35% light pace running and 11% in handball activity; 18% of the prisoners were found to be highly engaged in weight lifting activity, 8% in light tempo running activity and 4% in advanced handball activity.

The effects of sports-oriented initiatives on the psychological well-being of the prison population have also been demonstrated by various studies. In a report investigating the nutritional and exercise status in prisons in the UK, under the law, if conditions permit, prisoners aged 21 and over are given the opportunity to attend physical education for at least one hour a week (National Audit Office, 2006). Also, incentives provided for inmates under the age of 21 include organizing activities that will improve recreational facilities, physical education, physical training activities, on weekdays and weekends, and arranging free time for prisoners to participate in these activities. Although all these arrangements are being made, the findings obtained in the report showed that only 43% of the prisoners participated in organized physical education activities. In parallel with the findings of Herbet et al. (2012) in Australia, Oyeyemi et al. (2015) in Nigeria sample, in this report, it was stated that the opportunities in different prisons in the UK varied and this variation affected the level of physical activity of the prisoners. In the report, for example, it was emphasized that the rate of participation in physical activity in Britol prison is 11%, but this rate is 87% in Huntercombe prison. Nevertheless, regardless of prison differences, it was also reported that prisoners participated in physical activity on average 2.4 hours a week. Fischer et al. (2012) investigated the physical fitness and physical activity status of prisoners using A class drugs (heroin, cocaine, etc.) in England and researchers revealed that 60% of the participants had high level physical activity, 24% moderate and 16% low level. In addition, physical fitness levels of prisoners were also examined within the scope of their study and it was found that 28% of the prisoners' physical fitness level was higher than the average compared to the general population, 12% average level and 4% below the average. As a result of their research, the physical fitness and activity levels of the participants using A class drugs were found high, and this was attributed to the sample size and the participants' declaration. Supporting these findings, the opposition of physical activity and physical fitness levels in this study may be related to the contradiction in the participant's statement. In addition, since the development of physical fitness will depend on various parameters (frequency, intensity, etc.) of the physical activity, it can be said that the intensity and frequency of physical activity declared within the scope of this research is insufficient in terms of improving physical fitness (Hardman & Stensel, 2003; Plowman & Smith, 2008). In the French sample, Lagarrigue, Ajana, Capuron, Feart, and Moisan (2017) conducted a multi-faceted study and examined prisoners' mood, eating behavior, and physical activity levels. Research findings showed that there is a difference between male and female prisoners' physical activity levels; male prisoners were more active compared to female prisoners; and the high-intensity physical activity rate per week has also been shown to be higher in male prisoners. As a result of the research, 37% of the female prisoners and 11% of the male prisoners found to be inactive; it is also reported that 17.2% of female participants and 41.2% of male prisoners were highly active. Findings regarding the percentage of being "inactive" in male prisoners contradict the current study findings. Although in this study, the state of being physically active was not expressed with percentage values, inmates were found to be "inactive" in terms of physical fitness.

Emphasizing the relationship between physical activity and health, Amtman (2001) stated that regular physical activity reduces the mortality rate due to various diseases, and that this loss of life is undesirable for prisoners as well as the general public. He also reported that the negative effects of diseases related to inactivity on the national economy can be eliminated by increasing the level of physical activity in all areas of society. In addition, Amtman (2001) stated that the benefits of physical activity can reduce depression and anxiety, turn the emotional state into positive, and prevent individuals', in particular prisoners', attempts to violence against each other and the prison staff.

This study is the first step in revealing the physical activity and physical fitness levels of male prisoners in Turkey. Although this study demonstrated differences in physical activity and physical fitness levels by age, length of sentence, sentence duration, the findings revealed that the level of physical activity is "active" and "moderately active" level and the level of physical fitness is "inactive". The findings obtained to find contradictions between the level of physical activity and physical fitness contributed to the literature. Although the positive relationship between physical activity and physical fitness has been demonstrated in many studies, it is provoking that the increase in physical activity level does not reflect on the physical fitness level in this research. Physical education and sports activities play an important role in the opportunities provided to enable the convicts/detainees in prisons and detention houses to be regained as healthy and compatible individuals. When the laws and regulations on the subject are examined, it is seen that these possibilities are quite high (Ministry of Justice, 2020). However, although these opportunities were provided by law, the low level of physical fitness appeared to be an in-depth examination.

The reason for the contradiction in physical activity and physical fitness level should be examined in depth with quantitative, qualitative and mixed patterns. The research on physical activity and physical fitness levels of convicts/detainees should be repeated to include more comprehensive sampling prisoners. Since the level of physical fitness and physical activity is examined in this study exclusively for male convicts/detainees, research should also be conducted to include female convicts/detainees.

5.References

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