The Effects of Physical Performance Levels on Sport Participation Motivation in Master Athletes

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Abstract: The purpose of this study was examined the effects of physical performance levels on sport participation motivation in master athletes. Participants were total 30 master athletes (age means 57.60 ± 11.40) member of Izmir Master Athletes Club. All participants were completed Sport Motivation Scale with 28 items [1] and participated body composition and physical performance tests. Mann Whitney U Test, Pearson correlation and Spearman correlation coefficient were used to analyze data. In this study was no found statistically significant different in participant's motivation levels. It was observed increase at introjection and amotivation levels with increasing of master athletes' ages. It was determined to increase introjection subscale points increasing weight, height and body mass index. It was determined more relationship between extrinsic motivation levels with performance levels of master athletes.

Key words: Master athlete • Participation motivation • Physical performance

INTRODUCTION

It was determined that the process of getting older causes meaningful decrease in humans’ psychological functions. Nevertheless, it is known that in organ systems and with relation to age in individuals, the rate of this psychological loss is related to genetical profile [2]. And it is accepted that doing exercises is the necessity of living longer and healthier. For this reason, the number of people having regular exercises is getting more and more daily. In recent years, many studies have been made on researching the performance levels of master athletes [2-4]. The main aim of these studies is to determine the performance levels of master athletes and the research of how the performance could be increased. In addition to determination of the performance levels of master athletes, the determination of the tendency reasons of the athletes to the sports is also the reason for the planning of this study. Because it has been known that individuals have reasons for doing, keeping and stopping sports depending on specific reasons. It is said that among the researches on sports fields, one of the most popular research studies is motivation. This subject has been studied on several different groups [5-7]. It is also argued among trainers and players on the field of sports and teachers and students on the field of physical education. Not having any studies on psychological profiles of master athletes in Turkey also makes this study important.

In studies, it is stated that sportsmen are motivated in two ways. If the athletes join the activity to have fun and pleasure he could have been motivated intrinsically, or the athletes can show external motivation. That is, if the athletes join the activity for social or financial profit or avoiding punishment, he can be considered to be motivated extrinsically [8]. On the other hand, it is accepted that every individual joins sports activities for specific reasons. These reasons can be intrinsic or extrinsic. If the individual joins the activity without any reason and by his own wish or looks for competition without meeting any stimulating situation, it is considered that this person is motivated intrinsically. Amotivation, which is another dimension apart from intrinsic and extrinsic motivation, states people who are motivated neither intrinsically nor extrinsically and is defined as the state of insufficiency and lack of control. The person having amotivation cannot perceive the tie between his/her behaviors who cannot be motivated and the results of these behaviors [1]. The first interferences that have been made to test the motivation process chain have been surrounded by the self-determination theory [9].
According to self-determination theory, different types of motivation take place under the human behavior. These types of the motivation differ in itself of the self-determination theory. The self-determination gives the feeling of right choice to the person and lets him have the feeling of freedom while he is doing the thing that he chooses. If the self-determination is listed from the top to the bottom, these can be as intrinsic, extrinsic and amotivation [10]. To specify the stated motivational tendencies and to make the necessary external arrangements to maintain the participation, it is necessary to analyze the situations that the person meets in sports context. In this context, Sport Motivation Scale - SMS is developed by Pelletier and colleagues [11] to explain in which direction the person is motivated to participate in sports and which motivations are more effective in formation of the behavior [1].

The aim of this study to examine the effects of physical performance levels on sport participation motivation in master athletes. The hypothesis of this research is that master athletes can be motivated extrinsically as their age increase and the type of motivation can change according to their level of performance.

**MATERIALS AND METHODS**

**Sample:** The data were collected from 30 master athletes (age: 57.60 ± 11.40 years) who are members of Izmir Master Athletes Club. In this study, master athletes were consisted 21 male (61.05 ± 9.88 years) and 9 female (49.56 ± 11.10 years). 19 master athletes were 40-60 years (50.63 ± 6.10 years) and 11 master athletes were 61 years and over (69.64 ± 7.65 years). The study was conducted after confirmation from number 3 of Izmir Ethics Committee. It was given detailed information about study with volunteers before the start of the study, written and oral consent was taken. In this study, physiological measurements were conducted in DEU Sports Physiology laboratory. Physiological measurements were made from the master athletes and then scale application.

**Testing Protocols**

**Body Composition Tests:** A. Height (m), body weight (kg), body fat ratio measurements: Height, body-weight and body fat ratio (BFR) were measured with shorts and t-shirts. Body mass index (BMI- kg/m²) was calculated with Body Weight (kg) / Height (m)². Height and body weight measurements were used. Electronic weight and length system (G-Tech International, Korea) Body fat ratio was measured with a skinfold caliper, in results of these were calculated with Yuhazs method [12].

**Physical Performance Tests:**

**Astrand Test Protocol:** This test is to monitor the athlete's Maximal Oxygen Consumption (VO₂ Max) with indirect method in the laboratory. Heart rate and workload were applied Astrand nomogram. VO₂ Max (ml/kg/min) was determined [13].

**Sit and Reach Flexibility Test Protocol:** This test was performed on a specific platform. Extending the last point was recorded. Twice trials were made and the best score was recorded. [13].

**Vertical Jump:** This test was performed on a jumpmetre (Takei, Japonya). Twice trials were made and the best score was recorded [13].

**Handgrip Test:** This test was performed on a handgrip dynamometer (Takei, Japonya). Only the dominant hand was measured. Twice trials were made and the best score was recorded [13].

**Backgrip Test:** This test was performed on a backgrip dynamometer (Takei, Japonya). Twice trials were made and the best score was recorded [13].

**Psychological Test:** A. Sport Motivation Scale: Sport Motivation Scale - SMS [11] that is adapted into Turkish population by Kazak [1] which assesses participants’ motivation toward the sport. In the SMS, athletes are asked ‘Why do you practice your sport?’ They are provided with 28 items presented in the form of answers to that question. These items assess the constructs of amotivation, three types of extrinsic motivation (external, introjected, identified regulation) and three types of intrinsic motivation (to know, toward accomplishments, to experience stimulation). Cronbach’s alphas of the seven subscales are respectively 0.88, 0.73, 0.74, 0.82, 0.72, 0.70. Test-retest correlation of the subscales ranged from 0.52 to 0.91 and mean correlation is 0.76 [1].

**Data Analysis:** Data were analyzed and interpreted by using SPSS 15.0 software. In the analysis of the data obtained from the research, Mann Whitney U test for non-parametric groups, the Pearson product-moment correlation and Spearman correlation for relationship between variables was conducted to examine effects of physical performance levels on sport participation motivation in master athletes. Significant levels were p < 0.05 for all data.
RESULTS

The averages of master athletes’ physical and physiological values were showed according to gender and age group in Table 1 and Table 2. As expected, according to gender, weight, height, BMI, handgrip, backgrip and vertical jump values of male master athletes were higher than female master athletes. BFR and flexibility values were observed that male master athletes were low. In contrast, VO2 Max value of female master athletes was higher than male master athletes.

When the physical and physiological values were examined according to gender, the results of physical and physiological values were obtained as expected, because the values of master athletes aged 61 and over was reduced with age.

The SMS subscales scores of master athletes were examined according to age group. Know and accomplish, experience stimulation, external regulation, identification and introjection subscales values were relatively found high. Amotivation subscale was observed to decrease. Age group compared to each other, there is no statistically difference between the two groups (p > 0.05).

In Table 4, master athletes aged 40-60 were presented on the relationships among the subscales of SMS with the physical and physiological parameters values. Accordingly, there were a positive and statistically significant relationship between weight and identification (r = 0.47, p < 0.05), the introjection and weight (r = 0.56, p < 0.05) and VO2 Max and external regulation (r = 0.48, p <0.05) in the master athletes aged 40-60.

According to Table 5, in master athletes aged 61 and over, there was a positive and statistically relationship between weight and introjection (r = 0.61, p <0.05), body fat ratio and intrinsic motivation to know and accomplish (r = 0.72, p <0.05). In addition, there was a negative and statistically significant relationship between height and external regulation (r = -0.73, p <0.05) and VO2 Max and external regulation (r = -0.65, p <0.05).

The master athletes were generally examined (Table 6). The positive and statistically significant relationships between introjection and age (r = 0.39, p <0.05), amotivation and age (r = 0.48, p <0.01), the introjection and weight (r = 0.59, p <0.01), height and introjection (r = 0.37, p <0.05) and BMI and introjection (r = 0.52, p <0.01) were found.
Table 5: The relationship among physical and physiological parameters and the subscales of SMS of master athletes aged 61 and over.

<table>
<thead>
<tr>
<th>N=11</th>
<th>Weight</th>
<th>Height</th>
<th>BMI</th>
<th>BFR</th>
<th>VO₂ Max</th>
<th>Flexibility</th>
<th>Handgrip</th>
<th>Backgrip</th>
<th>Vertical Jump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know and accomplish</td>
<td>0.23</td>
<td>0.19</td>
<td>0.36</td>
<td>0.72*</td>
<td>-0.27</td>
<td>0.02</td>
<td>-0.35</td>
<td>0.09</td>
<td>0.19</td>
</tr>
<tr>
<td>Experience stimulation</td>
<td>0.25</td>
<td>0.12</td>
<td>0.35</td>
<td>0.23</td>
<td>-0.60</td>
<td>0.08</td>
<td>0.16</td>
<td>-0.07</td>
<td>-0.04</td>
</tr>
<tr>
<td>External regulation</td>
<td>-0.28</td>
<td>-0.73*</td>
<td>0.09</td>
<td>0.47</td>
<td>-0.65*</td>
<td>0.25</td>
<td>-0.44</td>
<td>-0.52</td>
<td>-0.49</td>
</tr>
<tr>
<td>Identification</td>
<td>-0.05</td>
<td>-0.25</td>
<td>0.17</td>
<td>0.12</td>
<td>-0.21</td>
<td>0.12</td>
<td>-0.27</td>
<td>-0.31</td>
<td>-0.06</td>
</tr>
<tr>
<td>Introjection</td>
<td>0.61*</td>
<td>0.30</td>
<td>0.50</td>
<td>0.22</td>
<td>0.09</td>
<td>-0.43</td>
<td>0.39</td>
<td>0.36</td>
<td>0.51</td>
</tr>
<tr>
<td>Amotivation</td>
<td>-0.29</td>
<td>-0.56</td>
<td>0.03</td>
<td>0.40</td>
<td>-0.59</td>
<td>0.48</td>
<td>-0.44</td>
<td>-0.28</td>
<td>-0.44</td>
</tr>
</tbody>
</table>

Table 6: The relationship between the subscales of SMS and physical and physiological parameters of master athletes.

<table>
<thead>
<tr>
<th>N=30</th>
<th>Age</th>
<th>Weight</th>
<th>Height</th>
<th>BMI</th>
<th>BFR</th>
<th>VO₂ Max</th>
<th>Flexibility</th>
<th>Handgrip</th>
<th>Backgrip</th>
<th>Vertical Jump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know and accomplish</td>
<td>-0.04</td>
<td>0.31</td>
<td>0.10</td>
<td>0.39*</td>
<td>0.12</td>
<td>0.07</td>
<td>0.03</td>
<td>-0.09</td>
<td>0.20</td>
<td>0.14</td>
</tr>
<tr>
<td>Experience stimulation</td>
<td>0.16</td>
<td>0.25</td>
<td>0.04</td>
<td>0.35</td>
<td>0.26</td>
<td>-0.21</td>
<td>0.05</td>
<td>0.21</td>
<td>-0.09</td>
<td>-0.05</td>
</tr>
<tr>
<td>External regulation</td>
<td>0.35</td>
<td>0.22</td>
<td>0.08</td>
<td>0.24</td>
<td>0.07</td>
<td>0.08</td>
<td>-0.05</td>
<td>-0.08</td>
<td>0.09</td>
<td>-0.23</td>
</tr>
<tr>
<td>Identification</td>
<td>0.27</td>
<td>0.34</td>
<td>0.19</td>
<td>0.32</td>
<td>-0.07</td>
<td>0.07</td>
<td>-0.14</td>
<td>-0.14</td>
<td>0.31</td>
<td>-0.08</td>
</tr>
<tr>
<td>Introjection</td>
<td>0.39*</td>
<td>0.59**</td>
<td>0.37*</td>
<td>0.52**</td>
<td>0.19</td>
<td>-0.07</td>
<td>-0.29</td>
<td>0.09</td>
<td>0.25</td>
<td>0.09</td>
</tr>
<tr>
<td>Amotivation</td>
<td>0.48**</td>
<td>-0.09</td>
<td>-0.16</td>
<td>0.04</td>
<td>0.09</td>
<td>-0.29</td>
<td>0.29</td>
<td>-0.15</td>
<td>0.09</td>
<td>-0.31</td>
</tr>
</tbody>
</table>

DISCUSSION

It is declared that master athletes have decrease in their activity levels in years. On the other hand, it has been observed that the number of master athletes has increased [14]. In this sense, it has been important for years to investigate the participation of the master athletes. The aim of this study is to examine the effects of the master athletes’ physical performance levels on participating motivations to sports. In the study, it has been hypothesized that master athletes can be motivated externally and as their age increases their motivation ways can change according to their performance levels.

At the result of the analysis, it was recorded that there had been increase both on their amotivation and introjection scores as the age of the athletes increased. These findings confirm the research hypothesis. The forms of motivation as introjection and amotivation can be determined under the external motivation. Internalization of external source of motivation is referred by introjection. These behaviors were reinforced by internal pressures such as anxiety and shame. As an example we can show people participating in sport due to feel pressure to stay in shape for aesthetic reasons [11]. Therefore, Jafari Siavashani et al. [15] indicated that women have strong motivation to exercise to keep their body shape, while men exercise to gain health. As the age increases, the increase of introjection sense of person is an expected result. Older age athletes seem to have a higher tendency towards introjection regulation of the sport behaviour. It is a natural situation that these people try to demonstrate themselves as if they are better than other people as physically. Amotivation reflects a lack of intrinsic or extrinsic motivation. Being low of amotivation levels of older athletes may be arise from either lack perceived control or absence of contingency between one’s actions and subsequent outcomes in the environment. Participation of athletes in a sport at older ages is mostly related to external reasons. Yet, this is a situation that must be controlled for the person. If he loses the perception of control, amotivation becomes more clear.

In the studies, it has been found that muscle strength decreases with age [2, 3] and maximal muscle strength reaches the highest level around 23 [3]. For this reason in this study, which deals with the effects of master athletes’ physical performance levels on participating motivations to sports, it can be considered that increasing of amotivation and introjection can be related to decrease in muscle strength. According to Kazak [1], the introjection form of external motivation is that the person who feels bad and embarrassed and pressure on himself to be fit because of aesthetic reasons when the person is not in form. According to this situation, in addition to weight, the introjection is also related to previous findings. Because people get weight as they get older, it is also can be seen as a factor that directs them to do sports.

In a study, in which De Pero and colleagues [14] researched the participating motivations of Italian master athletes in view of age, sex and level of competitiveness, a positive meaningful relationship has been found between that age and the level of competitiveness. When the SMS subscales point averages of the master athletes are examined related to age group, it has been determined that there hasn’t been a meaningful difference between two groups. Yet, when the values between physical and physiological parameters and SMS subscales of master
athletes aged 40-60 were examined, it has been determined that there has been a positive and meaningful relationship statistically between weight and identification, weight and introjection and \( \text{VO}_2 \text{ Max} \) and external regulation points. When the relationship between physical and physiological parameters and SMS subscales 61 years and over was analyzed, there has been seen statically positive and meaningful relationship between weight and introjection, body fat percentage and intrinsic motivation to know and accomplish subscale. And there has been seen statically negative and meaningful relationship between length and external regulation and \( \text{VO}_2 \text{ Max} \) and external regulation.

This study, which researches effects of the physical performance level on the motivation of master athletes for participating sports can be more qualified by analyzing different variables such as ego orientation, task orientation and flow state etc. Because analyzing of master athletes seems as an important subject. The subjects of trying to increase of participation in sports in early ages and not doing any sports even in older ages are closely related in each other and worth studying.

REFERENCES