The Training Effort for Master Athletes in Romania in Relation to Self-esteem

Daniela BABA¹, Lorand BALINT²

¹ PhD student, Department of Physical Education and Mountain Sports, Transylvania University of Brasov, Romania, daniela.baba@unitbv.ro

² Professor PhD Department of Physical Education and Special Motor Skills, Faculty of Physical Education and Mountain Sports, Transylvania University of Brasov, Romania, lbalint@unitbv.ro

Abstract: The aim of this article is to study the relationships between the training effort of master athletes (+35 years), performed by endurance running in order to participate in running events and their self-esteem. The research method was the investigation. The tool used was a questionnaire especially created for this research that also contains the Rosenberg Self-Esteem Scale. Out of the 111 participants, 62.2% are men and 37.8% are women. Men make a great effort (>12 km/training) 2,229 days/week, compared to women, who make a great effort 1.46 days/week, resulting in a significant difference (t = 2.53, p < 0.05). The results revealed a statistically significant correlation between the self-attitude changes by running and health changes (r=0.46, p=0.01) and between the self-esteem attitude changes by practicing running and the small intensity weekly effort (<8km/workout), (r =0.218, p=0.05). Conclusions: we believe that in terms of encouraging people of all ages to practice outdoor sports, promoting a healthy lifestyle based on exercise and managing mass sports, paying attention to endurance running is of extreme importance, especially in this stressing times that we are living. Therefore, a small to medium weekly effort is a self-disciplined habit that maintains the optimal health of the body and contributes to good self-esteem. The benefit resulting from the training effort gives the individual a state of well-being (67% of the participants had as their main motivation to run, a good state) which contributes to an increased in self-esteem. We consider that a high level of self-esteem is good not only for the individual, but also for the entire society. There are studies concerning the self-esteem in the literature of speciality, but not about the relation between amateur athletes’ training and self-esteem. We consider that the master athletes could be a rich source of information when studying the self-esteem.

Keywords: athlete masters, training, self-esteem, running.

1. Introduction

Running is extremely popular and includes different distances running events, from 5 to 10 km, half marathon, marathon and up to ultra-marathon, which is of various lengths (Stark, D et al, 2020). Usually, running tests are classified by age groups with an interval of 5 years, respectively 35-39, 40-44, 45-49, 50-54, 55-59 and +60. The participation rate and performance vary depending on the age group (Nikoloaidis et al., 2018).

The aerobic physical activity is the kind of activity frequently correlated with endurance, fitness and has the greatest health improvement. Solving health problems and health care (Galeş & Florea, 2021) depends on the determination of the individual, who must be aware of their responsibility to control their health and well-being, given that many countries have withdrawn from public health insurance (Malchrowicz-Mośk & Poczta, 2018).

In order to obtain better health and well-being, human biology requires a certain amount of physical activity. A physically active population is relevant both for the health of the individual and for community. There is a powerful scientific proof to support a relation between exercise / training and good physical and mental state. Practicing physical activity, within contests or out of them, stimulates a healthy behaviour and a higher life quality. Training and exercise improve mood, cope with stress, strengthen self-esteem and social skills (Malm et al, 2019).

The lack of physical activity is nowadays an important public health preoccupation because it is related to the growth of chronic diseases. It has been found to reduce cardiovascular diseases, stroke, several types of cancer, depression (Nikoloaidis 2019). Therefore, people are more and more aware of the importance of the effort in order to have an active and healthy lifestyle. This can be easily seen in the growing number of participants to the running events (Menheere et al., 2020).

The study of endurance running motivation of master athletes is a topic of interest of some authors, such as Poczta J., Dyck Van Delfien, Malchrowicz-Mośko, E., Nikolaidis etc. They were mainly concerned with socio-demographic characteristics and found that motivational aspects and psychological characteristics of masters athletes play an important role in participating in endurance events, in the half marathon, which is an increasingly popular sport worldwide.

However, in the literature we have studied so far, we did not identify works that would investigate the relationship between the master athletes’
endurance running and self-esteem. Therefore, in this paper, we seek to study the influence of endurance running training on self-esteem.

The master athletes strive to maintain or improve their performance, and their impressive capacity for physical performance and physiological functioning turn them into a fascinating model of “exceptionally successful aging” (Tanaka & Seals, 2008).

Doyenart et al. discovered in their study that there is a connection between mental health and the physical activity of amateur runners. They showed that running over various distances could alter the level of anxiety, stress and the mood of runners. Psychophysiological changes were studied in master athletes at the end of the half marathon, and an increase in the level of happiness (25%) and self-esteem (40%) was found. The study is focused in measurement of physiological parameters (heart rate, energy expenditure) and assessments of mental health (stress, anxiety, self-esteem and happiness). Doyenart concludes that half marathon training can lead to an increase in happiness and self-esteem in runners (Doyenard et al., 2020).

Masters et al. following their study created a tool for assessing the motivations of athletes who practice endurance running, namely MOMS (Motivations of Marathoners Scales). The MOMS Scale consists of 56 items organized in 9 scales oriented towards: health, weight concern, self-esteem, life meaning, psychological coping, affiliation, recognition/approval, competition and personal goal achievement (Master et al., 1993). This tool for assessing motivations is still used in some studies.

Vikram studied the relationship between training and self-esteem using the Rosenberg Scale to assess the level of self-esteem. The sample of the study consisted of elite world ranking women who participated in the marathon, belonging to different demographic types, beliefs, societies and lifestyles. The author collected the data a day before the 2014 Mumbai Marathon and found that female athletes are particularly vulnerable to self-esteem issues because they are judged on their performance. Out of the 16 athletes, only one had high self-esteem, the other 15 having a normal level of self-esteem. The author is of the opinion that self-esteem cannot be considered a performance criterion and that elite athletes should have higher self-esteem, strongly stating that a psychologist coach could help improve their self-esteem (Vikram, 2020).

Although the relation between self-esteem and running training of amateur athletes is an important topic, as far as we know, there are no papers addressing it. That is the reason for which we study it in this paper.
2. Material & methods

2.1. Objectives and hypotheses

The objective: Identifying the training of master athletes and the influence of running on self-esteem

The hypothesis: We assume that the desire of master athletes to resort to endurance running, generates a correlation between aerobic training and self-esteem.

2.2. Participants

This research studied 111 master runners, of which 37.8% were women and 62.2% were men. We notified all athletes about the importance of the study and we asked them to give us the solicitated data. There were no reasons for rejecting any questionnaire, so we took in consideration all of them.

2.3. Procedure

The year 2020 was a non-competitive year due to the COVID-19 pandemic, consequently any try to choose an arbitrary sample was useless. We reached out to the organizers of a 2019 half marathon and got a list of master participants. Out of the list of 134 master competitors, among which 111 fulfilled the questionnaire, which means a percent of 83%. We consider that the sampling method is sampling at the place of consumption, although the data collection was done long after the half marathon. Sampling at the place of consumption is a non-random type of sampling, therefore we cannot generalize the data from the sample to the entire population. The time of fulfilling the questionnaire that contains the Rosenberg Self-Esteem Scale as well was of about 15 minutes for 15 questions. I mention that the study did not collect identification data of the participants (name, address, e-mail address etc.), the information being anonymous. Informed consent was automatically obtained when the participants fulfilled the questionary. The answers were received electronically and physically, in writing.

2.4. Instruments

Our questionnaire contains the following:

• Socio-demographic information (gender, age, education level, place of residence, marital status);
• Personal sports activity data (having a personal trainer, health issues, belonging to a sports club, performance athlete in the past,
participating in national and/or international competitions, number of training sessions per week);
  - Motivations for running;
  - Perception of changes brought on by running (the perceived improvement or not of some aspects relating to sleep quality, body weight, physical immunity and diet);
  - Rosenberg self-esteem (10 items with a range of answers between total disagreement and total agreement).

2.5. Statistical analysis

The SPSS - IBM Statistical Package for the Social Sciences was used.

3. Results

Due to the complexity and volume of the interpretation of the data, we will address only the most relevant part of the questions asked.

A. The results of the demographic profile

Table 1. Distribution of athletes by age categories

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age categories</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35-39y</td>
<td>40-44y</td>
</tr>
<tr>
<td>Men</td>
<td>65.8%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Women</td>
<td>34.2%</td>
<td>50.0%</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception

Out of the 111 respondents, 62.2% are men and 37.8% are women. The age distribution is as follows: 34.5% between 35 and 39 years of age, 16.4% between 40 and 44 years of age, 18.2% between 45 and 49 years, 13.6% between 50 and 54, 5.5% between 55 and 59 and 11.8% over 60. The gender-age contingency table shows equal distributions for the second, third and fifth age ranges and an overrepresentation of men in the first, fourth and last age ranges.

Table 2. Distribution of athletes according to level of education

<table>
<thead>
<tr>
<th>Gender</th>
<th>Level of education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Secondary</td>
<td>University</td>
</tr>
<tr>
<td>Men</td>
<td>13.4%</td>
<td>86.6%</td>
</tr>
<tr>
<td>Women</td>
<td>11.9%</td>
<td>88.1%</td>
</tr>
<tr>
<td>Total</td>
<td>12.8%</td>
<td>87.2%</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception
The distribution according to the level of education is disproportionately biased towards those with a higher level of education, the women being slightly overrepresented in the sample.

Table 3. Distribution of athletes according to area of residence

<table>
<thead>
<tr>
<th>Place of residence</th>
<th>City</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>89.6%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Women</td>
<td>85.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Total</td>
<td>88.1%</td>
<td>11.9%</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception

The distribution by area of residence is disproportionately biased toward those in urban areas, men being slightly overrepresented in the sample.

B. Results for motivation

The motivations for which the respondents participate in running competitions are included in Table 4.

Table 4. Motivations of master athletes

<table>
<thead>
<tr>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>q13_affiliation</td>
</tr>
<tr>
<td>q13_well-being</td>
</tr>
<tr>
<td>q13_recognition</td>
</tr>
<tr>
<td>q13_health</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception

We received 170 responses from 106 respondents, so an average of 1.6 responses per respondent. We classified the answers according to question number 13 (“What motivated you to run?”) into four types of motivations aimed at: affiliation, well-being, recognition and health.

C. Results about sports activity

To question number 1: How long have you been practicing running?

On average, respondents have been running for 13 years, with a standard deviation of 12 years. The average and standard deviation of the period since practicing running for each age category appears in Table 5:
Table 5. Years of running experience

<table>
<thead>
<tr>
<th>Age range</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-39</td>
<td>7.18</td>
<td>4.465</td>
</tr>
<tr>
<td>40-44</td>
<td>8.28</td>
<td>7.226</td>
</tr>
<tr>
<td>45-49</td>
<td>16.05</td>
<td>12.927</td>
</tr>
<tr>
<td>50-54</td>
<td>13.27</td>
<td>8.181</td>
</tr>
<tr>
<td>55-59</td>
<td>35.17</td>
<td>11.822</td>
</tr>
<tr>
<td>60 and over</td>
<td>23.62</td>
<td>18.505</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception

To highlight the extent to which masters’ athletes train weekly, this scale was measured with an open-ended question, question no. 5 (What is your training plan?). Then, the answers were recoded (the recoding can be considered subjective) so that each day of the week was divided into four categories of training: high effort (>12 km running), medium effort (8-10 km), low effort (<8 km), rest.

Another type of analysis shows how many days on average athletes dedicate to each type of effort and rest breaks. In Tables 7, 8, 9 we observe the distribution by sex, by age categories and by performance level of athletes.

Table 6. Number of days dedicated to training depending on the type of effort and gender

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>SumHighEffort</td>
<td>Men</td>
<td>2.29</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>1.46</td>
</tr>
<tr>
<td>SumMediumEffort</td>
<td>Men</td>
<td>1.53</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>2.02</td>
</tr>
<tr>
<td>SumLowEffort</td>
<td>Men</td>
<td>1.47</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>1.34</td>
</tr>
<tr>
<td>SumBreak</td>
<td>Men</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>2.10</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception
The Training Effort for Master Athletes in Romania in Relation to Self-esteem
Daniela BABA & Lorand BALINT

Table 7. Number of days dedicated to training according to performance athletes and amateurs.

<table>
<thead>
<tr>
<th></th>
<th>Performance athlete/recreational runner</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>SumHighEffort</td>
<td>Yes</td>
<td>2.23</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.88</td>
</tr>
<tr>
<td>SumMediumEffort</td>
<td>Yes</td>
<td>1.90</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.64</td>
</tr>
<tr>
<td>SumLowEffort</td>
<td>Yes</td>
<td>1.32</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.46</td>
</tr>
<tr>
<td>SumBreak</td>
<td>Yes</td>
<td>1.55</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.83</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception

Table 8. Number of days by age categories depending on the type of effort

<table>
<thead>
<tr>
<th>Age groups</th>
<th>SumHighEffort</th>
<th>SumMediumEffort</th>
<th>SumLowEffort</th>
<th>SumBreak</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-44</td>
<td>2.02</td>
<td>1.86</td>
<td>1.14</td>
<td>1.82</td>
</tr>
<tr>
<td>45-54</td>
<td>2.09</td>
<td>1.30</td>
<td>1.97</td>
<td>1.64</td>
</tr>
<tr>
<td>&gt;55</td>
<td>1.74</td>
<td>1.95</td>
<td>1.37</td>
<td>1.68</td>
</tr>
</tbody>
</table>

Source: Authors’ own conception

Men engage in higher levels of effort 2.29 days a week compared to women who have higher effort training sessions 1.46 days a week, a important difference (t = 2.53, p<0.05). Women have more medium effort training sessions than men, the difference being insignificant (t = 1.337, p>0.05). Men have more lower effort training sessions than women, the difference being insignificant (t = 0.378, p>0.05). Women take more days off than men, the difference being insignificant (t = 1.915, p>0.05).

Performance athletes engage in higher effort sessions on 2.23 days a week compared to recreational runners who engage in high-effort training sessions only 1.88 days a week, the difference being insignificant (t=0.93, p>0.05). Performance athletes have more medium effort sessions than recreational runners, the difference being insignificant (t=0.72, p>0.05). Recreational runners do more low effort training sessions than performance athletes, the difference being insignificant (t=0.378, p>0.05). Recreational runners take more break days than performance athletes, the difference being insignificant (t=0.907, p>0.05).
**Figure 1** shows the differences between how men and women train (men in blue, women in red) according to each type of effort and weekdays. The 28 Student tests of difference between percentages (7 days or 4 types of effort) indicate significant differences between men and women in the following situations: high effort on Tuesday, break on Wednesday, high effort on Saturday, medium effort on Saturday, high effort on Sunday.

**Figure 1.** Style of training on weekdays according to gender and type of effort

Source: Authors’ own conception
D. The results of changing one's attitude towards oneself through running (point 14 of the questionnaire: self-esteem)

In Figure 2, you can see on the left the differences between men (blue) and women (red) regarding the dichotomous scales:
1. Are you more confident?
2. Do you feel more valuable?
3. Do you respect yourself?
4. Do you have a positive attitude towards life?

The largest difference between genders is recorded on the third scale, but all 4 Student Equality Tests showed insignificant differences between men and women.

Figure 2. Changes caused by running according to gender.
Source: Authors’ own conception

In Figure 3 we can see the differences between performance athletes (red) and amateurs (blue) in terms of the same scales. Again, the biggest difference is on the third scale, but all 4 Student Equality Tests showed statistically insignificant differences between performance athletes and amateurs.
E. The results on the Rosenberg Self-Esteem Scale

At the end of the questionnaire, we added a table adapted after the Self-Esteem Scale (Morris Rosenberg) which contains 10 items. Following the analysis of the questions, we found no statistically significant differences between men and women, between amateur and former performance athletes, between those who encountered health problems and those who did not, regarding self-esteem by practicing endurance running. There is only a statistically significant correlation between the change in attitude towards self-esteem through running and changes in health (r=0.46, p=0.1) and between self-esteem and weekly effort (r=0.218, p =0.05).

Table 10. Relations between self-esteem, health, and low effort

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-esteem</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Changes in the attitude towards oneself by practicing running</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Changes in health by practicing running

|          | 0,06 | 0,45* | 1     | 0,02 |

4. How long have you been practicing running?

|          | 0,07 | 0,01  | 0,02  | 1     |

5. Weekly high effort

|          | -0,005 | -0,01 | 0,04  | 0,05  | 1     |

6. Weekly medium effort

|          | 0,09   | 0,18  | 0,06  | -0,02 | -0,36** | 1     |

7. Weekly low effort

|          | -0,21* | -0,03 | 0,06  | 0,04  | -0,36** | -0,36** | 1     |

Note: *. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Source: Authors’ own conception

4. Discussion

For the mature people, who perform sports with the right intensity, the feeling of strength, health, satisfaction and self-esteem is the most dominant one and they also experience different emotional states. To be able to reach the potential he is capable of in making decisions at work and in other situations in daily life, it is very important for any individual to feel good about himself. The average physical effort (approximately 8 km) can be considered as a therapy to improve self-esteem.

Running attracts more and more participants every year, because it has positive effects not only on a person's physical condition, but also on mental health, without much effort (Poczta et al., 2021).

Our data contradict the findings of Vikram, which state that female athletes are vulnerable. But there is a major difference between the participants in the two studies: masters athletes and the world athletic elite. Given the pressure of competing in a world event, the female athletes in Vikram’s study reported a high level of anxiety and vulnerability (Vikram, 2020). In our case, the athletes attend these events because they take pleasure in it, so they are not pressured by external factors. Therefore, the reward that master athletes receive for their endurance running consists in an increase in their overall well-being and higher self-esteem. Endurance
running can be considered a form of therapy leading to the improvement of the overall self-esteem.

The major strength of our study consists of the fact that our sample is made up of experienced athletes, who have very serious and important motivations for practicing endurance running, and almost nothing can prevent them from pursuing their hobby.

- **Training**
  
  We noticed that, for the respondents who have practiced running for 13 years, the regular running workouts we have studied can significantly improve their well-being (67%), can contribute to the athlete’s relaxation and can improve self-esteem, only if the effort is small to medium (<8km/training).

  The trainings caused some medical issues (46.8% had health problems), but they did not reduce the motivation to run.

  There are many inefficient and unhealthy training habits (Garcia-Pinolis et al., 2020), in our study we cannot comment on the quality of training. For scientific training, importance should be given to key issues such as periodization, training and monitoring methods, performance anticipation, running style and the prophylaxis and management of endurance running wounds (Boullosa et al., 2020).

  On the contrary, if the passionate athlete cannot pursue this hobby, he feels frustrated and directly influences his self-esteem.

  Sensory and motor changes are almost imperceptible in youth and middle age, changes over time. Strength and coordination begin to diminish. Endurance is the motor quality that is better preserved as strength. The loss of endurance is due to the gradual decrease in the rate of metabolism. Strength and endurance training in middle age can prevent the loss of muscle mass and maintain the vital functions of the body (Papalia et al., 2014).

- **The results of changing one’s attitude towards oneself through running (point 14 of the questionnaire: self-esteem)**

  Moderate physical exertion produces a feeling of euphoria, which can last for several hours. The movement has been associated with the release of endorphins, which are natural painkillers produced by the body because of prolonged physical exertion that relaxes and makes the athlete feel euphoric (Hufton et al., 2015).

  Many people start running because they want to have a better physical capacity, but what push them to participate in competitions is the challenge. Participation to sporting events can be enjoyable and increase self-esteem (Khorram-Manesh et al., 2019).
The Rosenberg Self-Esteem Scale is the most known tool for measuring self-esteem in analysis studies. There were no statistically significant results regarding the self-esteem, probably since the sample was not large, or due to the fact that the study participants engage in sports activities. The sample consists largely of middle-aged persons who are not as focused on competitive results as younger athletes.

Master athletes practice endurance running for their own enjoyment, voluntarily; they manage their personal activities in such a way as to include training in their daily lives, so they automatically have an improved self-esteem following exercise. Because they derive so much pleasure from running, master athletes are not deterred from training by either low temperatures, or by very high ones. They suffer when they are not able to run. Whenever they travel, regardless of the reason, master athletes always make space in their luggage for their running equipment and are constantly on the lookout for places to run in order to maintain their high self-esteem.

There is a statistically significant correlation between the attitudinal change towards oneself through practicing running and changes concerning health, and between self-esteem and weekly low effort. Therefore, a small to medium weekly effort is a self-disciplined habit that maintains the optimal health of the body and contributes to maintaining a high level of self-esteem. Self-esteem is not dependent upon gender, place of residence, on being a performance or amateur athlete, on whether one has suffered from health problems, or being in a certain age group.

There are a lot of factors in one’s life that can affect self-esteem. People that practice any type of physical activity form a perfect medium for investigating the self-esteem. The research literature has shown that high levels of self-esteem are associated with health and psychological well-being, pressure control or anxiety (Muñoz-Villena et al., 2020). Our behavior and personality are influenced by our self-esteem.

The motivations to practice endurance running in adulthood lead to a positive perception of self-esteem and a better self-confidence. When speaking of young, professional athletes, self-esteem can fluctuate, depending on the results. A strong “iceberg” personality (Nikolaidis et al., 2018) acquired through sport, increases the level of self-confidence and expands and provides benefits in other areas of the adult athlete's life as well. Researchers suggest...
that a higher level of individual's self-esteem is not only useful to that person, but also for the entire community (Cast & Burke, 2002).

In addition to social status and intelligence, in our society, self-esteem is related to physical appearance as well. "Good-looking" people are highly publicized. More and more women associate self-esteem with ideal weight and body image. In our study some respondents also had as a motivation for running, the weight, which we integrated into health (19.8%).

Many women are extremely concerned about appearance and many become fanatical when it comes to food, provided they don’t gain weight. They resort to orthorexia, and Bio, Raw vegan diets, as they do not want to gain weight. According to a study of 1,849 women over the age of 50, 62% said their body weight or the way they look, their appearance, negatively affects their lives, and 64% think about their weight at least once a day. They tried to lose weight in nonhealthy ways, such as taking pharmacological products for losing weight (7.5%) and overtraining (7%) (Utzschneider, 2014).

Any suffering endured in training/competitions is almost temporary for master athletes, but the effects on the mental level, relaxation and increased good mood are kept long after running. The activation of the production of chemicals by running (dopamine, serotonin, noradrenaline) have an important role in stimulating the receptors in the pleasure centres of the brain. These neurochemicals help to develop and maintain a calm, parasympathetic state (Cucuzzella, 2019, p. 229).

The end of the study proved that the experimental hypothesis was certified in real world, which means that the initial assumptions on which our study was based are valid.

5. Conclusions

The benefit resulting from the training effort offers the individual a state of well-being (67% of the participants had as their main motivation to run, well-being) which contributes to an increase in self-esteem. Therefore, a small to medium weekly effort is a self-disciplined habit that maintains optimal body health and contributes to a good self-image.

References

[https://doi.org/10.3390/sports8030035](https://doi.org/10.3390/sports8030035)
The Training Effort for Master Athletes in Romania in Relation to Self-esteem
Daniela BABA & Lorand BALINT


https://doi.org/10.3390/ijerph17041416

https://doi.org/10.3390/ijerph16101777

https://doi.org/10.3390/sports6030099


https://doi.org/10.3390/su13095287

https://doi.org/10.2307/2096350

https://doi.org/10.1113/jphysiol.2007.141879


https://www.researchgate.net/publication/340731516_A_Study_on_Self_Esteem_Level_of_World_Ranking_Women_Marathon_Runners