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PHYSICAL ACTIVITY LEVEL OF THE ATHLETES PRACTISING HORSEMANSHIP

Igor Cieśliński, Barbara Długołęcka, Paulina Skwara

The Institute of Physical Education
Lomza State University of Applied Sciences, Lomza, Poland

E-mail: igorcieslinski@gmail.com

Abstract: The purpose of the research was to assess physical activity level of the athletes practising horsemanship – jumping obstacles. The material and methods: the longer version of IPAQ questionnaire was used as a research tool. The research results and the conclusions: the athletes are characterized by a high physical activity level in comparison with the average population. Physical activity level is not related to gender. The gender of the athletes determines different level of the activity related to sport and recreation for men and the activity related to professional work for women.

Key words: IPAQ questionnaire, horsemanship, physical activity.

Introduction

Physical effort has accompanied a man since the dawn of time. Initially it was associated with daily existence, the need to ensure food, intertribal rivalry for territory, the need to secure dominance in the group. Force marked hierarchies and determined the fate of individual communities. What is more, it enabled primary structures to grow and it was an important but not the only feature of the first civilization creation including the first states. This archetypal category, which over time transformed into a sport civilization, fondness for recreation,the effort carried out for the sheer satisfaction and better mood, remains valid today. Unfortunately, physical activity which is associated with everyday life or professional work is increasingly minimized in contemporary world [1]. Lack of exercising negatively affects many vital functions which are connected with proper functioning of human organism. Physical inactivity causes many civilized diseases,for example, Type 2 diabetes, cardiovascular diseases, osteoporosis, depression and so on [2, 3]. We should definitely report to movement if we want to defend themselves against the effects of the life in XXI th century. As a result, we will be able to improve the function of certain organs and improve metabolism,what is resulted into maintaining the balance between the amount of energy supplied with the food and its expenditure. Most people face these problems nowadays. Disregard of biological assets of physical activity during childhood and adolescence will find reflection in physical performance and the adaptability in mature and older age which is connected with it [4–6].

The study conducted by WHO revealed that Poles are among the least physically active European communities. Only every tenth adult in our country does physical exercises sys-tematically whereas about 70% of women and men lead sedentary harmful life-styles.Unfortunately, low physical activity and passive pastime are also observed among young people.The percentage of young people who are not very active physically increases with age. Students are spending more time watching tv or in front of the computer than taking part in organized sport events or other forms of physical activity [7–10].

Horse riding ia an excellent form of physical activity which can be practised from childhood to old age. Moreover, it has a health dimension and also entails positive social and esthetic effects. The fact that an animal is a man's partner distinguishes horse riding among other phyical activities. Mutual trust and the relationship which is formed between a man and a horse have influence on our progress and in the case of more advanced riding also on achieving sport results [11, 12].

A salutary effect of horse riding on human health was discovered long ago. Hippotherapy is a very popular and commonly known form of the rehabilitation of persons with disabilities. A horse takes an important role in this kind of therapy, because it is treated as a co-therapist. The contact with a horse helps to reduce the effects of many neurological diseases, improve self-esteem, learn to be independent, overcome fears and resistance, shape the sensitivity, responsibility and protectiveness. Horse riding is a sport activity which stimulates almost all the muscles, shapes our attitude, improves cardiovascular and respiratory systems and also lowers blood pressure and reduces tension caused by stress. Proper position during riding on horseback requires active straightening. Due to it abdominal, back, buttocks and rim of the hip muscles become stronger. It also corrects posture and improves circulation, breathing, bowel function and immune system. It has even a greater impact on our psyche. Horse riding makes you relaxed and calm you down.

Not without significance is also the fact that during 60 minutes of riding you can burn about 700 calories [13, 14].

A lot of people falsely claim that the success in horse riding depends only on efficiency and training a horse. Only the professionals practising this sport discipline realize that daily workouts are a complex process. Although it seems that a rider leads a horse using a hand-held reins, in fact this effort is 2% of his muscles work. The rest 98% is the work of the muscles that are responsible for a correct pounce and a suitable position of a calf. Horse-riders have well-developed deep muscles which does not always go hand in hand with athletic silhouette. Horse riding requires specific human fitness. A balanced posture depends on the shape of the back, abdominal and pelvic muscles [15]. What is more, this discipline requires equal fitness of the whole body both its left and right side as they must interact and work independently from one another during riding. A rider must be constantly active during each workout which goes hand in hand with appropriate use of aid (pounce-a rider must follow the movement of a horse by increasing and decreasing the weight, adjust stride; a calf-due to the proper position of a calf a rider communicates with his horse,sets the pace and direction of riding, changes the horse gait, assigns tasks) [16, 17].

The work with a horse requires concentration and adequate physical preparation of a rider. According to the regulations a horse can start its adventure with sport not earlier than at the age of 4 and it can take part in the most serious competition as Grand Prix at the age of 7. A riding horse is able to master the elements needed for such prestigious competitions within 3 years. Only hard training of a horse and a rider could lead to success [18–20].

The research on physical activity level is one of the most difficult research in terms of all the positive measures of health. All the methods of the physical activity evaluation more estimate than measure activity level and are affected by smaller or bigger mistake. There are a lot of methods and tools to measure physical activity level [21, 22]. Every method or tool has both advantages and disadvamtages. The choice of methodology depends on the age of respondents, the aim of the reserach, availability of measurement equipment or contacts with respondents. All the methods can be divided into into two groups: objective and subjective methods. Objective methods of physical activity evaluation use direct measurements of one or more numbers of its indicators while subjective methods are based on diagnostic survey where all kinds of questionnaires and also multimedia equipment such as video cameras (video recording) are used. In comparison with objective methods they do not require specialised equipment which has a beneficial effect on the state and mood of respondents [23].

A wide range of questionnaires which are used to measure human physical activity level have appeared so far. They take into consideration age, gender, state of health and fitness. IPAQ Questionnaire (International Physical Activity Questionnaire) which evaluates physical activity level of adults (at the age 16-65) is the most popular and the most frequently used [24].

Material and methods of the research

IPAQ Questionnaire in the second version was used as a reseach tool in the study. There were 30 respondents including 15 women and 15 men who practise horse jumping obstacles (Table 1).

Table 1: Characteristics of participants.

Gender	Age (x)	Age (sd) p
Women	27,4	5,61 <0,05
Men	28,8	7,21 <0,05

Statistical methods

The following methods were used to analyze data (Fig. 1 and 2): the Shapiro – Wilk Test to assess variables compatibility with normal distribution, the non-parametric Kruskal-Wallis Test to assess the differences between two groups of the respondents – women and men. In the case of the variable which describes the activity related to movement the variables related to intense activity and moderate activity were added together, because there was a large number of zero values related to intense activity. The same was done in respect of sport and recreation activity in leisure time. Graphical data analysis was based on box-plots where a centre line means the median value, the sides of the rectangular designate the first, the second and the third quarter (exactly 50% of the research data) whereas the vertical line is 1,5 of the size of the rectangular in both directions. This type of the analysis enables to compare the two groups at the same time in terms of the value of the variable, assess assymetry of distribution or also number and value of diverging observation [25].

The results of the research

The study of the distribution of each variable demonstarted that in two cases (intense and moderate activity related to housework) distributions differed from normal distribution (Table 2) perhaps due to the fact that some respondents had children and the burden of parents caring for

Table 2: Test results concerning compatibility of variables * with normal distribution (The Shapiro-Wilk Test).

Variable	W	p
Intense activity related to professional work	0,98	0,80
Moderate activity related to professional work	0,97	0,62
Intense activity related to movement	0,93	0,07
Intense activity related to housework and childcare	0,55	>0,001
Moderate activity related to housework and childcare	0,86	>0,01
Activity related to recreation and sport in leisure time	0,94	0,08
Sum of activity	0,94	0,15

*variable value expressed in MET

children was very high which is indicated by the high values of standard deviations for these variables (Fig. 1 and 2).

According to the review of data analysis, both groups of the respondents had similar total physical activity. Activity level of both groups, which was divided into various components, was also similar (Fig. 1 and 2).

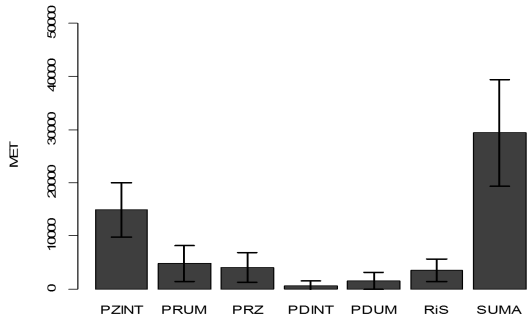

Fig. 1: Average and standard deviations of the individual elements of women's physical activity.

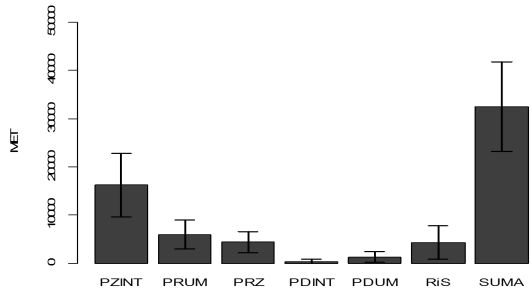

Fig. 2: Average and standard deviations of the individual elements of men's physical activity.

Intense activity level related to professional work is high and similar in both groups. However, as for men, intra-group differentiation was much higher. As for women, there were cases that differ significantly from the values obtained from other research. Quite the opposite situation took place in the case of moderate activity; larger differentiation in the women's group and outliers in the men's group.The central position of the median indicates the lack of assymetry distribution related to intense activity in both groups. As for moderate activity, a left-side assymetry was noted in the women's group. The differences between two groups were not statistically significant (Fig. 3 and 4; Table 3).

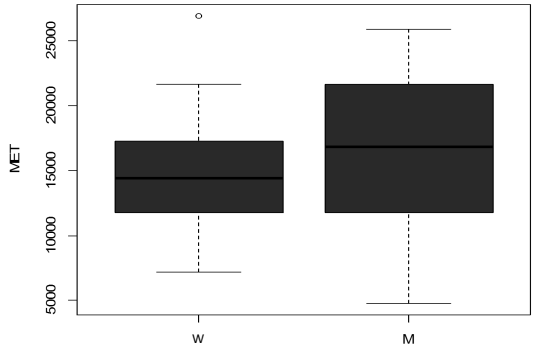

Fig. 3: Intense activity related to professional work.

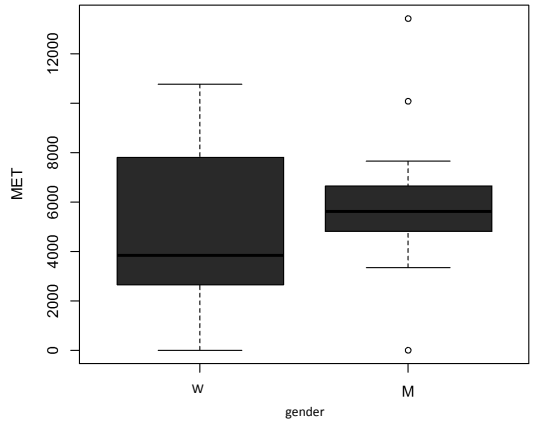

Fig. 4: Moderate activity related to professional work.

The activity related to movement was similar in both groups. The differentiation of typical values were similar, too. There was single outliers in both groups. The differences were not statistically significant (Fig. 5; Table 3).

Housework and childcare were the next elements of respondents' activity. Both intense and moderate activity were similar in both groups. A large left-sided skewness and outliers were observed in both groups. Intra-group differences were not statistically significant for both intense and moderate activity (Fig. 6 and 7; Table 3).

Intense and moderate sport and recreation activity is more differentiated among men. Although there is a woman whose activity was compared with the highest value obtained in a men's group. There was not a asymmetry in both groups and the differences were not statistically significant (Fig. 8, Table 3).

Table 3: Differences in the activity of the components according to gender (The Kruskala – Wallis Test).

Variable	KW-χ2	p
Intense activity related to professional work	17,4	0,49
Moderate activity related to professional work	23,2	0,39
Intense activity related to movement	24,5	0,49
Intense activity related to housework and childcare	5,8	0,32
Moderate activity related to housework and childcare	13,5	0,40
Activity related to recreation and sport in leisure time	29,0	0,41
Sum of activity	29,0	0,41

*variable value expressed in MET

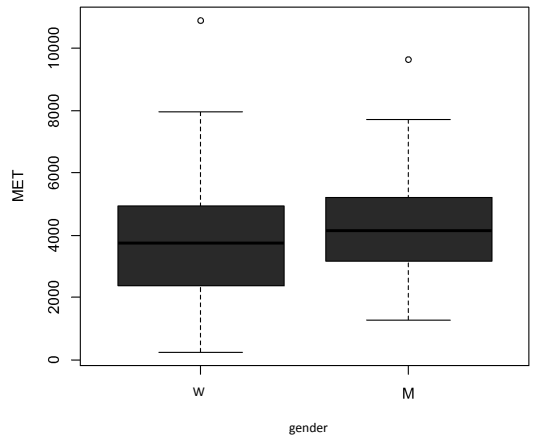

Fig. 5: Moderate and intense activity related to movement.

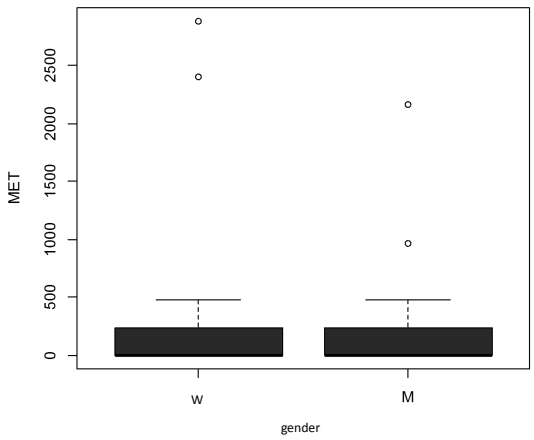

Fig. 6: Moderate activity related to housework and childcare.

Athletes' total activity is higher in the group of men. However, this difference is not statistically significant (Fig. 9, Table 3).

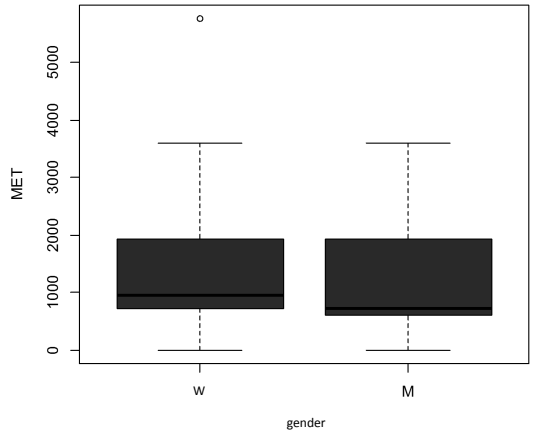

Fig. 7: Intense activity related to housework and childcare.

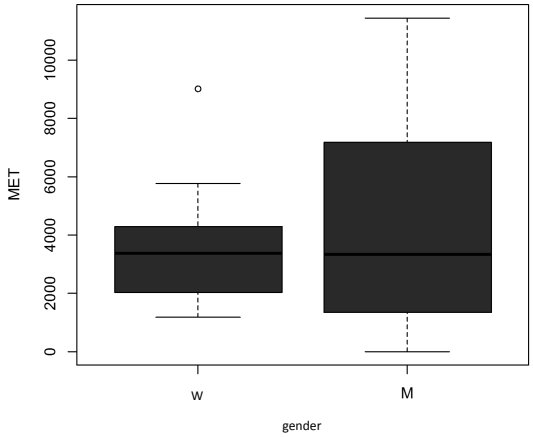

Fig. 8: Intense and moderate sport and recreation activity in leisure time.

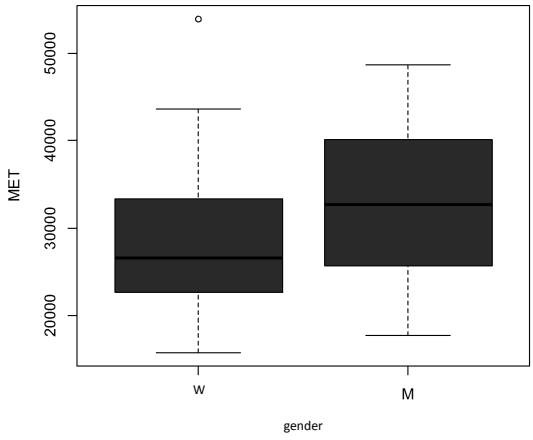

Fig. 9: Total activity of respondents.

Discussion

There is a lot of research related to physical activity level of different population which was conducted using validated tools such as IPAQ. Obtained results indicate that the surveyed group was characterized by a much higher level of physical activity than in the case of the population

presented in the Report for Department of Sport Policy Analysis [26].The respondents had much higher MET values in comparison with selected professional groups especially in respect of the the activity related to professional work. It is resulted from the respondents' character of work which requires a very high level of physical activity [27]. As for gender, the men who practise horse riding were in some cases much more active than the men who do not practice it. The advantage of physical activity concerns professional work and the activity in leisure time [28]. The women who practice horse riding have a much higher level of physical activity related ro professional work whereast he physical activity related to housework and sport or recreation is on a similar level [29]. Compared to the results of the young people from Silesian region, the athletes who took part in the survey achieved much higher MET values [30]. The representatives of other regions,for example, the schoolchildren from rural and urban schools from Wielkopolski region at the age of 15 [31] and the upper secondary schoolchildren [31] despite high results do not match the surveyed group of athletes. The students of Physical Education were repeatedly subjected with regard to the analysis of physical activity.The research was conducted in Poznań [32], Biała Podlaska [33] Gliwice [34]. The students from Turkey were subjected, too [35]. All the groups mentioned above were characterized by a lower level of physical activity in comparison with the people who ride a horse. The residents of the south-eastern part of Poland were another surveyed group. The results of the reserach showed a low level of total physical activity especially among young people. As for adults, they have slightly better results. However, their results deviated significantly from the results of the surveyed group [36,37]. The research of physical activity level of university students is a frequently raised issue. Among the respondents there were people who do not practice any sport.The results demonstrated that men achieve higher MET values than women [38]. The same situation is in the group of riders. However, their MET values are significantly higher than in the casef of the surveyed students. The results of the part-time students of Higher School of Physical Eductaion and Tourism Management in Pruszków were analyzed, too. The students were divided into two groups: those connected with sport and others. The first group had significantly higher physical activity level thereby to obtain higher MET values [39]. Anyway they did not match the activity level of the peole who practise horse riding. Comparing the respondents with Golden Age University students one can notice a huge difference in activity level – even several dozen times higher [40]. Average values differ by up to 20000 MET. The self-assessment of students' physical activity level was also analyzed. The students who are considered to be very active obtained high MET values, but not higher than the values of the respondents [41]. The group of people including those who practise horse riding really stands out against the background of the Polish population. The research has proven that physical activity level of Poles is not high and it is in the range of low to enough. Physical activity of both training and non-training youth was the object of interest. Data analysis showed that people who do not make any efforts had three times lower physical activity level in comparison with those who train regularly and who achieve high much lower MET values than the surveyed group [42]. Obtained results of the athletes can be compared with the results of the disabled who due to their limitations rarely realize their sport passion and take part in recreational activities which goes hand in hand with low physical activity level thereby much lower level than in the case of the representatives of the surveyed group. The significant difference of activity level can be noticed while comparing the respondents and the people who lead sedentary lifestyle. The type of work is always the reason of a low activity level. Such people spend about 6-8 hours daily in a sedentary position while the surveyed group spend this time very actively having intense training [43].

Conclusions

1. The athletes who practise horse riding are charactrized by a very high level of physical activity level in comparison with the average population.
2. Regardless to gender the athletes are characterized by the similar level of physical activity.
3. The surveyed group of men is characterized by a high diversity of physical activity level in the aspect of sport and recreation. The similar intra-group diversity of the surveyed group of women was noted in comparison with the activity related to professional work.

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