EDUCATIONAL SCIENCES

THE PHYSICAL ACTIVITIES AND HEALTHY EATING HABITS OF THE POST-GRADUATE STUDENTS OF LATVIA UNIVERSITY OF AGRICULTURE

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Abstract

This study was conducted to investigate the lifestyle of post-graduate students. The purpose of the present study was to find out opinion of the post-graduate students how significant are physical activities and healthy eating in their life. The study was initiated due to the growing knowledge of the importance of healthy food.

The study was carried out by using empirical methods and the opinion of post-graduate students living in Latvia analysed. The authors have used questionnaire method and in February 2008 received answers from 86 respondents who are the post-graduate students of Latvia University of Agriculture (LLU).

Studies showed that the biggest part of research subjects appreciates the importance of physical activities and healthy eating, and treats it as a positive part of the post-graduate studies process.

Key words: post-graduate student, physical activities, healthy eating.

Introduction

In the period of dynamic changes and technological development in Latvia, we considerably lose the balance between mental and physical work. There is a tendency to increase hours of mental work, but the load of physical work is reduced. We feel tired after the intensive mental work. The tiredness is caused by unbalanced mental and physical proportion.

Even the outstanding such as as Claude Adrien Helvetius, Immanuel Kant, Jean-Jacques Rousseau et al. emphasized the idea that physical activities influence our mental abilities and suggested exercising to increase these abilities. (Jansone, 2000)

The basic principle of the development of harmonious personality stresses the necessity to focus on physical activities and healthy lifestyle in the society.

Physical activity is defined as „any body movement by skeletal muscles that results in energy expenditure“. Physical activities in daily life can be categorized into occupational, sports, conditioning, household, or other activities. Leisure time physical activity represents a broad category of activities performed outside work. (Caspersen, et al., 1985). Engaging in physical activity is more than just a matter of personal choice. (Sallis, et al., 2006). Physical activity for improved health and well-being has been an important theme throughout.

We can keep optimal health through physical activity and food variety. It helps to remind us of the important links between being active, our food intake and our health. In other words to be healthy we need to eat well and be active every day.

The Healthy Eating Pyramid uses the idea of food groups and organises those according to the energy and the nutrients that they supply. It shows the proportions of one group of foods to our total food intake.

With the variety of food pyramids available, we may wonder which one to follow. It may help us if we know that the basic principles of food pyramids are largely the same and generally emphasize the following:

• Eat more fruits, vegetables and whole grains;
• Reduce intake of saturated fat, trans fat and cholesterol;
• Limit sweets and salt;
• Drink alcoholic beverages in moderation, if at all;
• Control portion sizes and the total number of calories you consume;
• Include physical activity in your daily routine (Kerr, 2008).

Food pyramids place foods in categories — such as dairy products or meat and beans — to help to guide your food choices. As Figure 1. shows, no
single food provides all of the nutrients that your body needs, so eating a variety of foods within each group ensures that you get the necessary nutrients and other substances that promote good health.

The connection between food and disease is known to doctors already from Hippocrates time. The ancient Greek physician Hippocrates of Cos said „Nutrients should be our remedy, and our remedy should be nutrients.”

Our health and feeling depends on food that supplies our body with energy we need and biologically active nutrients. We can get acquainted with broad investigations in the field of food quality; however, we are not sure that food we daily consume is of good quality and harmless to our health.

The tendency to purchase biological farming products or eco-products as well as the number of citizens that support healthy lifestyle taking care of overall body condition and health gradually increases.

The purpose of the present study was to find out the opinion of the post-graduate students to what extent their physical activities and healthy eating habits are significant for them.

![Figure 1. The healthy eating Pyramid](source: http://thenutritionsource.org).

Studying process, especially post-graduate studies, is very demanding and brings a great deal of mental strain. It is vital not to lose interest in physically active and healthy lifestyle, particularly, while studying for doctor’s degree. The studying process creates an enormous load to the central nervous system (CNS). Professor N. Amosov emphasizes the crucial role of physical activities in development of all CNS functions, the agility and balance of nerve process due to which the mental abilities increase (Amosov, 1987).

The student needs change over time, and it is in line with their social, mental, physical development (Heidi and Hutton, 2007).

**Materials and Methods**

The studies were carried out by using empirical methods and the opinion of post-graduate students living in Latvia analysed. The authors have used electronic version of structural questionnaire method and sent it to all 200 post-graduate students of Latvia University of Agriculture (LLU) in February 2008. A total of 86 post-graduate students participated voluntarily. The studies were carried out by Department of Sports in cooperation with Department of Post-graduate studies of LLU.

Studies were based on analysis of answers of 20 male and 66 female post-graduate students to 15 questions of the questionnaire.

Respondents participated in this study were with...
mean age in their thirties (females 34, males 28.6), ranging aged from 23 to 53 years.

The respondents of those studies represent opinion of post-graduate students of ten different sciences: agriculture (6), agricultural engineering (8), agrarian and regional economics (27), food sciences (8), forest sciences (10), wood processing (4), veterinary medicine (10), water management (1) and educational sciences (12).

After reviewing the literature, the questionnaire was designed by the authors. The questionnaire contained questions about the benefits of physical activity and details of their own practice of physical exercise (frequency, duration). Other questions included knowledge about healthy food and personal practise of eating habits. The questionnaire was a part of a comprehensive questionnaire on lifestyle.

For the evaluation, the methods of statistical grouping, comparison and logical analysis, graphical viewing and summing were used.

**Results and Discussion**

The respondents were asked to point out the opinion on the question „Are you a follower of the active way of life?“. The results were consistently positive across post-graduate students (74%), just a few of them mentioned reasons, why they are not followers of the active way of life: „I would like to, but laziness is in my way“ or „Mostly I am sitting in front of the computer, but I walk a lot during the day“ (Table 1.). The answers indicate that students know and realize the importance and necessity of physical activities in every day life.

### Table 1

<table>
<thead>
<tr>
<th>Statement</th>
<th>Males</th>
<th></th>
<th>Females</th>
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<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>80</td>
<td>44</td>
<td>67</td>
</tr>
<tr>
<td>Sometimes</td>
<td>2</td>
<td>10</td>
<td>22</td>
<td>33</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>10</td>
<td>-</td>
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The research results of the scientists of physiology, psychology and sports pedagogy show that physically active students to serious mental loads adapt with minimal strain of regulatory mechanism. Physically active students demonstrate higher steadiness to disruptive factors than less physically active students do (Кретова, 1990).

The respondents were asked a question „Do you participate in physical activities?“, and Table 2 shows the results.

The majority thinks that they are participating in physical activities. But few answers illustrate the problems: „Unfortunately, I cannot manage my time and devote it for physical activities“.

### Table 2

<table>
<thead>
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<th>Statement</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
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<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>70</td>
<td>50</td>
<td>76</td>
</tr>
<tr>
<td>Sometimes</td>
<td>2</td>
<td>10</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>20</td>
<td>-</td>
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According to American scientist Bredemeier opinion, all sports provide an opportunity to pursue excellence, both of physical performance and character. Virtually all sport teams can be turned into miniature caring communities where growth is stimulated through mutual encouragement, challenge, and support (Bredemeier, Shields, 2006).

The respondents were also asked to point out, what kind of physical activities they participate in. Descriptive statistics are shown in Figure 2. The post-graduate students mentioned very specific types of activities in Notes part of the question („walking, instead of taking transport“, „physical work during summers“, „daily walking to 5th floor“, „my job is physical work all around 9 months per year“, mountain skiing, snowboard, orienteering, skijoring, cycling, fitness club, body bike, shooting and et al.).
People quite often misleadingly consider that it is enough if you do physical work every day; it successfully substitutes physical activities. Unfortunately, in day by day physical work one engages only certain muscular groups. Although a person feels muscular pain, it does not indicate that we do healthy physical activity; it just shows fatigue caused by muscular and joints overload. At the same time many other muscular groups and joints are not occupied at all.

To avoid unhealthy overload of certain joints or muscular groups, one should stick to the following main principles:

- Taking care of right posture;
- Not carrying load in one hand for long periods;
- Straight back sitting to avoid muscular strain and back deformation;
- Wearing comfortable footwear (Kancāns, 1989).

The authors of the research share the conclusions made by the sports scholar I. Liepiņš in his research – the students are aware of the importance and necessity of physical health although not all of them try to improve their physical health; therefore, first, it is important to acquire knowledge about healthy lifestyle and importance of physical activities. If a person has willpower to exercise and knowledge that physical exercises improve his/her health, he/she definitely will find time and possibility to do it. It is obvious that physical health and status depend on one’s willingness to improve it. One should not forget that taking care of one’s health is a lifelong process as well as it is true about self-development process (Liepiņš, 1993; Markevics, 2004).

Regular physical exercises in any kind of sports are linked to target-oriented physical activities. They facilitate physical development in early adolescence as well as help to maintain physical health and shape in middle age. It is also important to realize when time comes to switch from training to health building on activities (Kravalis and Grants, 2003).

Table 3 presents the answers to the question “Do you have regular physical activities?” An analysis of data collected from answers allows concluding that 51% of post-graduate students of LLU participate in those studies and have regular physical activities.

### Table 3

<table>
<thead>
<tr>
<th>Statement</th>
<th>Males</th>
<th>Females</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Sometimes</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>20</td>
</tr>
</tbody>
</table>
Some of respondents admitted that "15 minutes of daily exercising", "more yes than no – I mentioned daily walks to public transport and other places", "periodically regular, according to opportunities, if I have time, definitely take advantage of physical activities" or "regularity depends on amount of work (included studies) and free finances for training fees".

As the respondent mentioned above, again answer was "yes, but before it I have to struggle with my laziness". It is very natural for a human being.

The respondents in the questionnaire were asked to indicate "how often they have their physical activities" (Table 4).

Recreationally active individuals were those who performed aerobic and/or resistance training exercises for 30-60 min on 2-3 days/week, but who did not participate in collegiate or professional sport (Markevics, 2004).

The post-graduate students were also asked to characterize their physical condition (Figure 3.).

The results of studies show that majority of respondents evaluate their physical condition as normal or good. It is a positive self-appraisal, of course.

The second part of the questionnaire was based on healthy food problem. First of all, students discussed the issue about eating habits and gave the answer to the question "Do you have qualitative and healthy food?" (Table 5.).

The survey results show that post-graduates (59%) are aware of the necessity to use healthy food and only few (6%) of them does not pay any attention to that.

Very positive answers state: "I prepare healthy food of high quality as often as I can" or "My husband is a sportsman, so everyone in our family should eat healthy food".

Respondents point out that "I know healthy food..."
Food habits and meal patterns obviously differ between the sexes: women having a better choice of foods, but men having more regular food habits (Hoglund et al., 1998).

According to Kravalis and Grants, scientists claim that healthy food means balanced food – the amount of food consumed in 24 hours corresponds to the round-the-clock energy consumed. It is a vital problem for students since being busy all day round, they quite often prefer fast food to healthy food. Long term consumption of fast food facilitates the cumulation of overweight that results in harm of health (Kravalis and Grants, 2003).

Authors with great interest looked forward to answers to the question „What kind of food do you prefer (%)?”

As illustrated in Figure 4, the choice of food is balanced enough and corresponds to the principles of healthy food.

However, post-graduate students decided that „It is hard to point out percentage; it changes each week”. Authors appreciated the answer and found it out to be very professional, „I try to choose balanced food: I pay attention to the variety of product groups (meat, vegetables, fruit) and various preparation technologies (raw, boiled, stewed, steamed)”, „Speaking in general, I try to use various products in meals, and I try to reduce the consumption of fatty products. I strive to increase consumption of products that contain protein” or „I use vitamins and mineral substances in addition.”

The seafood are very healthy, but, unfortunately, few respondents do not have them at all. Juice was not mentioned in the questionnaire, but a number of respondents drink home-made juice (carrots, orange) or drink water. Very few respondents have an allergy to dairy products and fruits. Unfortunately, the economic situation in our country limits having products of high quality or eco-products.
The author could conclude and totally agree with the statement that nutrition knowledge level of girls was higher than that of boys (Hee-Wan and Sang-Sun, 2006).

The respondents were also asked to point out the pace where they have their meals. As shown in Table 6, the majority of post-graduate students (75%) have their daily meals both at home and public catering.

It is very common to take with you home-made or ready-made sandwiches at the working place. Unfortunately, at the university we do not have common area to relax and have the meals. A very useful advice is: „I change catering places to diversify food in order to absorb necessary vitamins and mineral substances.“

<table>
<thead>
<tr>
<th>Placement</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Public catering</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Both (at home and public catering)</td>
<td>16</td>
<td>46</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

The post-graduate students were also asked to define frequency of meals.

The authors found out a very interesting opinion „irregularly, because then I should not bother about probable problems if I have to interrupt regularity. The experience shows that if one interrupts eating on a regular basis even for two days, the stomach problems might arise.“

It should be admitted that having meals three times a day (59%) is not a bad indicator although it would be better to have meals at least four times a day (19%) but taking smaller portions. It is scientifically proven that if you eat small portions of balanced and healthy food, your organism completely uses ingested calories and does not form fat reserves (Table 7).

<table>
<thead>
<tr>
<th>Eating frequency</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a day</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Twice a day</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Three times a day</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>Four times a day</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Five times a day and more</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Others (irregularly, when I wish, somehow)</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

Is it possible to improve average level of study achievements and cognitive abilities if one consumes healthy and balanced food? The answer is „yes“ because healthy food is related to intellectual achievements indeed (Geidge and Berliner, 1999).

Finally, the respondents could evaluate to what extent physical activities and healthy eating habits influence post-graduate studies process.“ The post-graduate students were very active to give answers to this question.

Generally, the answers were positive (62), which means that physical activities and healthy food definitely facilitate post-graduate studies. There were a lot of interesting comments: „I consider that any physical activities improve mental abilities and work capacity“, „I haven’t thought about it before (food – physical activities – post-graduate studies), but healthy food and physical activities anyway is a positive attitude towards life“ or „I haven’t thought about correlation of this type, but I am sure that..."
active and healthy lifestyle assures better work capacity in general.'

There was a piece of advice given to the university administration: ‘as concerning physical activities – I assume that the largest part of post-graduate students would be delighted to have some support from the university administration to have discount in Jelgava Fitness centres.’

According to our experience from other lifestyle studies, post-graduate students try to answer questionnaires honestly, and authors appreciate it greatly.

Conclusions
1. Research shows that the biggest part (73%) of respondents follow active way of life and participate in physical activities.
2. Studies indicate that more than 60% respondents regularly (2-3 times a week) participate in physical activities (sports, physical work).
3. There are similar findings showing that the biggest part (70%) of respondents have qualitative and healthy food and strictly take their meals on regular bases.
4. Research also indicates that products pyramid of daily meals is comparative, properly balanced and according to healthy eating basic principles.
5. In summary, studies showed that the biggest part (75%) of research subjects appreciates the importance of physical activities and healthy eating, and treats it as a positive part of the post-graduate studies process.

References