

SCIENTIFICS JOURNAL

ISSN 1805-8787

VOLUME 5 | NUMBER 1 | 2017

ACTA SALUS VITAE

THE COLLEGE OF PHYSICAL EDUCATION
AND SPORT PALESTRA, L.T.D.

PALESTRA

SATISFACTION WITH LIFE OF THE SIBLINGS OF PEOPLE WITH DISABILITIES IN EARLY ADULTHOOD

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Abstract

The topic of the article is the issue of achieving satisfaction and life contentedness by the siblings of people with disabilities in early adulthood and the impact of their siblings' disability on their quality of life. The paper discusses the terminology as well as contemporary concepts of the quality of life and family and personality factors affecting it. The methodological part presents the problems, hypotheses and research tools, and characterizes the studied group. The final section presents research findings and their interpretation.

Keywords:

disability, family, sibling, satisfaction, adulthood

Satisfaction with life from the perspective of various research approaches

Satisfaction with life is an ambiguous, multidimensional and interdisciplinary notion. In the subject literature this term is defined interchangeably with the quality of life, life contentedness, wellbeing, prosperity, happiness.

A breakthrough in the development of life satisfaction research in the field of social sciences was made by A. Campbell's study who in the 1970s defined the quality of life as a life experience expressed by the level of life satisfaction and happiness. Under its influence, human life started to be considered holistically (Sadowska, 2006, p. 15).

In the 1990s Australian researcher R. A. Cummins delved into the issue of identifying the areas of life quality and he successfully identified seven areas of the quality of life: material well-being, health, work/activity,

intimacy (close relationships), safety, social well-being, emotional well-being. The researcher assumed that the quality of life is both objective and subjective, and the defined areas constitute each of them. In the subjective dimension the cultural values are vital whereas within the subjective dimension – the personal values are essential. The subjective areas refer to the satisfaction with each of the areas with respect to their significance to a particular person (Sadowska, 2006, p.36).

Positive psychology binds satisfaction and the good quality of life with well-being and its measure is mental well-being, a positive affection, satisfaction. The role of happiness in the contemporary concepts of good life is the criterion of relevance of other concepts considered as indicators of good life, such as a sense of life, autonomy, purposeful pursuit, optimism, etc. Are all happy lives good? According

to Aristotle's concept a more complex satisfaction associated with cultivating and developing virtues, i.e. eudemony, is an alternative to hedonism or a life full of pleasure. A hedonistic pleasure is a completely subjective state whereas eudemony corresponds to more objective standards that can be observed (King, Eells, & Burton, 2007, p. 22).

The close relationship between the quality of human life and happiness shows the happiness theory by J. Czapiński. Czapiński's psychological well-being scheme has three levels. The first level is the will of life - the deepest and the most basic level which is least susceptible to external influences and is a necessary condition for the survival of a man. The second level is the overall psychological well-being or aspects of satisfaction with one's own life as a whole. It constitutes an intermediate layer built upon the previous one. The third level, the most outer one, related to the objective events of the world and the conditions of life, consists of partial satisfactions, i.e. the judgments and feelings that pertain to particular areas of life.

An example of a contemporary view of life satisfaction is also the personalist and existentialist concept. It assumes that the psychic life takes place in four dimensions:

1. psychophysical,
2. psychosocial,
3. subjective,
4. metaphysical.

According to this assumption, the quality of life can be defined as a way of life, i.e. a type of life problems and a way of solving them which is characteristic of

each dimension. The sense of the quality of life is made up by a subjective assessment of the way of life and the accompanying feelings (Struś – Romanowska, & Frąckowiak, 2007, p. 17).

In defining life satisfaction, norms and values which are imprinted in human consciousness play an important role and show their desire for a specific state or purpose that affects the particular behavior of people. The achievement of life satisfaction by a person is influenced by the factors independent of them as well as the factors dependent on their activity. The human-independent factors can be divided into the external ones, e.g. the place of birth, and the internal ones, e.g. health or personality traits.

These theories are some of many functioning and present in the social sciences. Not all of the works are part of the research tradition of experiencing and living a life. An example of that is the approach presented by of D. Rybczyńska according to which “the quality of life is an integrated system of motivation and pursuit factors which underlie human needs and values. The level of the quality of life depends on personal and social expectations, the type of activity of an individual and their choices in life. These attributes have an impact on the sense of life, and in turn, on the quality of life”

Family and personality factors influencing the emotional development of the siblings of people with disabilities

The birth of a disabled child is one of the determinants of a sense of life satisfaction independent of a human being. Both parents and siblings of a child with a disability are placed in a situation which is

not only completely beyond their control but also extremely difficult. Some parents use defensive mechanisms such as resignation, negation, aggression, rejection, contact avoidance. The parents go through various periods of emotional experiences after diagnosing the child with disabilities. A. Twardowski lists four periods of such experiences:

- Shock period – where there is regret, despair, fear, feeling of harm, helplessness, hopelessness. During this period one usually deals with a total mental imbalance of the parents.
- Emotional crises (depression or despair) – emotions are not as turbulent as they used to be, but the sense of loneliness, life disaster, helplessness are still dominant. The parents are not reconciled with the fact of their child's disability.
- Period of apparent adaptation to the new situation – it is characterized by the use of defensive mechanisms such as unreasonable ways of adapting to the child's disability. The parents still deny this fact, show an unreasonable faith in cure, take numerous ineffective but tedious and expensive treatments, they look for other professionals and centers.
- Period of constructive adaptation – a complete real adaptation to the child's disability. Action strategies undertaken by the parents become coherent and effective. They seek solutions that ensure normal living conditions and fulfill the needs of all the family members (Twardowski, 1991, pp. 22 – 26).

Not all the parents reach the period of constructive adaptation which has a direct impact on their relationship with the disabled children and the relationship between the healthy and the disabled siblings.

The issue of the functioning of parents of children with disabilities is relatively often discussed by researchers. The problems, the development and course of life of the siblings of people with disabilities are treated marginally (Žyta, 2010, & Twardowski, 1991). They perform various roles and face various tasks and problems at different stages of their life. As the parents age, their responsibility and involvement in caring for their disabled siblings increases, often after the death of their parents they are burdened with caring for and deciding about the fate of their disabled siblings. The relationship between the disabled siblings and the healthy ones is primarily influenced by: the parental attitude, the degree of the disability of the siblings, the visibility, the disability, the behavior of the person with a disability, the order of birth, the difference of age, the sex, the parental self-esteem, the illness or death of the parents and other factors (Sidor, 2005, p. 31).

The parents play the most important role in developing self-awareness and adaptive processes in the siblings of people with disabilities. It depends on them how the healthy children in the family will perceive their situation and themselves against the background of the family. Their accepting attitude is conducive to positive relationships between the siblings. The way the parents work with the disabled child affects how the sibling sees his or her situation and how well he or she deals with

it. Negative parental emotions affect the other children and influence the emotional environment in the family. Positively oriented parents shape in their children hope, optimism and resilience in difficult situations (Twardowski, 1991, p. 97).

The baggage of experience and the emotional experiences gained in the childhood and through the period growing up with the disabled siblings cannot remain with no impact on the adult life of the healthy sibling. The research shows that many people having disabled siblings encountered negative attitudes and many a form of discrimination on the part of both peers and adults. As a consequence of such experiences, their self-esteem may be lowered or there might arise a conviction of being inferior, which negatively influences the development of satisfactory interpersonal relationships. Yet, the research also indicates that having a disabled sibling can have positive aspects; owing to a disabled brother or sister, the respondents learned sensitivity, tolerance, responsibility (Jankowska, & Wójcik, 2008, p. 210 - 211).

Entering adulthood and early adulthood is by nature considered to be particularly difficult in a human life. Such a person experiences the peak of their physical abilities, motivation for action, activity, life energy, creativity, on the other hand, this person is exposed to numerous stressful situations and conflicts resulting from taking on new tasks and social roles. The difficult situation of such people is deepened by the fact that their siblings are affected by a disability. Young people want to become independent from their parents, which is related to living up to their own challenges all by themselves or with a limited parental support. At the

same time, the young person is forced to take decisions and take responsibility for themselves simultaneously realizing that they will affect not only their own life but also the life of other people related to them, including the lives of their disabled siblings (Mailna, 2014, p. 27).

Can the burden of having a disabled sibling affect the feeling of satisfaction in early adulthood? This is undoubtedly a difficult and stressful situation. In order to adapt to a difficult situation, a young adult must demonstrate certain competences and have personal qualities that are conducive to a successful exit from a crisis. These qualities comprise the characteristics of the Big Five personality model (neuroticism, extraversion, openness to experience, conscientiousness, compromise), the sense of control placement, the self-esteem level and the evaluation of the importance of development tasks (Mailna, 2014, p. 45)

The studies show that close relationships with parents and family are associated with an increased self-esteem (Baldwin, Hoffmann, 2002; Greene, Way, 1995). It can be assumed that a high self-esteem will be associated with the efficiency of implementing the developmental tasks of the period of early adulthood (Mailna, 2014, p. 57).

Own research methodology

To determine whether the degree of satisfaction with life and the related level of the quality of life of the siblings of people with different types of disability in early adulthood differs significantly from the level of satisfaction with life of the people of similar age having siblings with no disabilities, I conducted a study on a group of 48 subjects having siblings.

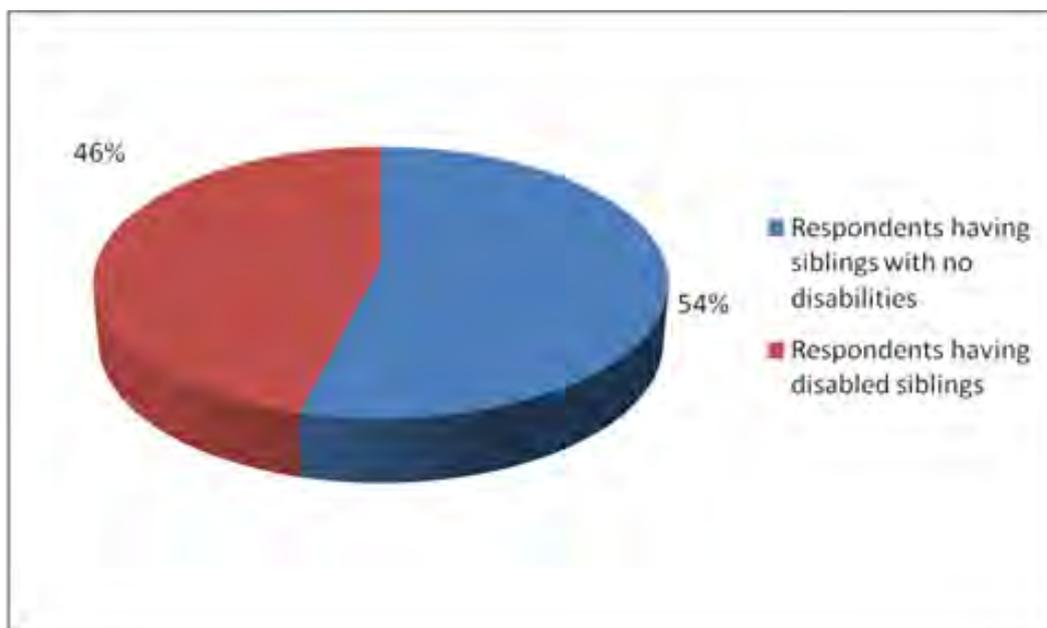


Figure 1 Distribution of the respondents according to the occurrence of disability in their siblings

Among the respondents, 54% had siblings with no disabilities, while 46% had brothers and sisters suffering from various disabilities.

The siblings of people with disabilities were contained in one of the four research groups.

Table 1 Distribution of the respondents having siblings with disabilities with reference to the type of disability

Group	Size	Group percentage
Siblings of people with autism	6	27,27
Siblings of people with cerebral palsy	5	22,73
Siblings of people with visual impairment	6	27,27
Siblings of people with Down syndrome	5	22,73

For the purposes of the research I formulated the following research problems:

- How do the adult siblings of people with disabilities assess satisfaction and the level of life contentedness compared to those having siblings with no disabilities?

- How do the adult siblings of people with disabilities evaluate their quality of life compared to those having siblings with no disabilities?

Based on the literature analysis of the research subject and the presented research

problems, the following hypotheses were made:

Hypothesis 1: *In the early adulthood the siblings of people with disabilities can have equally satisfactory lives as their peers having siblings with no disabilities.*

Hypothesis 2: *The adult siblings of people with different types of disabilities evaluate their quality of life as lower compared to those having siblings with no disabilities.*

The method used in the study was the diagnostic survey method and the technique applied – the questionnaire survey.

The following research tools were used to determine the degree of satisfaction with life and life contentedness of the siblings of people with disabilities in the early adulthood period:

- Satisfaction With Life Scale (SWLS) by E. Diner, R.A.Emons
- own adaptation of the Quality of Life Scale based on A. Campbell's scale.

The Satisfaction With Life Scale (SWLS) is made up of five life satisfaction statements. The task of the respondents is to refer to these statements on a seven-point scale (I totally disagree, I disagree, I rather disagree, I neither agree nor disagree, I rather agree, I agree, I

completely agree). The more points, the greater the satisfaction with life.

The adapted Quality of Life Scale based on A. Campbell's scale consists of 9 questions:

1. Are you satisfied with your family life?
2. Are you satisfied with your health?
3. Are you satisfied with your contacts with friends and acquaintances?
4. Are you satisfied with your professional career?
5. Are you satisfied with the way you spend your free time?
6. Are you satisfied with the place you live in?
7. Are you satisfied with your and your family's housing conditions?
8. Are you satisfied with your own and your family's financial situation?
9. Are you satisfied with yourself?

The task of the respondents was to define their own feelings on a five-point scale.

Research findings

The analysis of the results of the study conducted with the Satisfaction With Life Scale did not show statistically significant differences between the siblings of the disabled people and the siblings of people with no disabilities.

Table 2 Life satisfaction level of the adult siblings of people with no disabilities and with disabilities

Variable	Group	M	SD	T-test result	Validity level
Satisfaction With Life Scale(SWLS)	Respondents having siblings with no disabilities	22,35	4,44	0,07	0,943
	Respondents having disabled siblings	22,45	5,93		

This means that the adult life of the siblings of people with different disabilities does need not to be less satisfying than those with the healthy siblings. With an adequate parental support they can from an early age realize their passions, aspirations, and the fact of having a disabled person in the family does not have to be the cause of limitations.

On the other hand, the analysis of the Quality of Life Scale results shows statistically significant differences between the people having healthy siblings and the siblings of people with different disabilities, thus indicating that the people having siblings with disabilities evaluated their quality of life as lower than those having siblings with no disabilities.

Table 3 Life satisfaction level of the adult siblings of people with no disabilities and with disabilities

Variable	Group	M	SD	T-test result	Validity level
Quality of Life Scale	Respondents having siblings with no disabilities	37,38	3,14	2,43	0,022
	Respondents having disabled siblings	33,86	6,17		

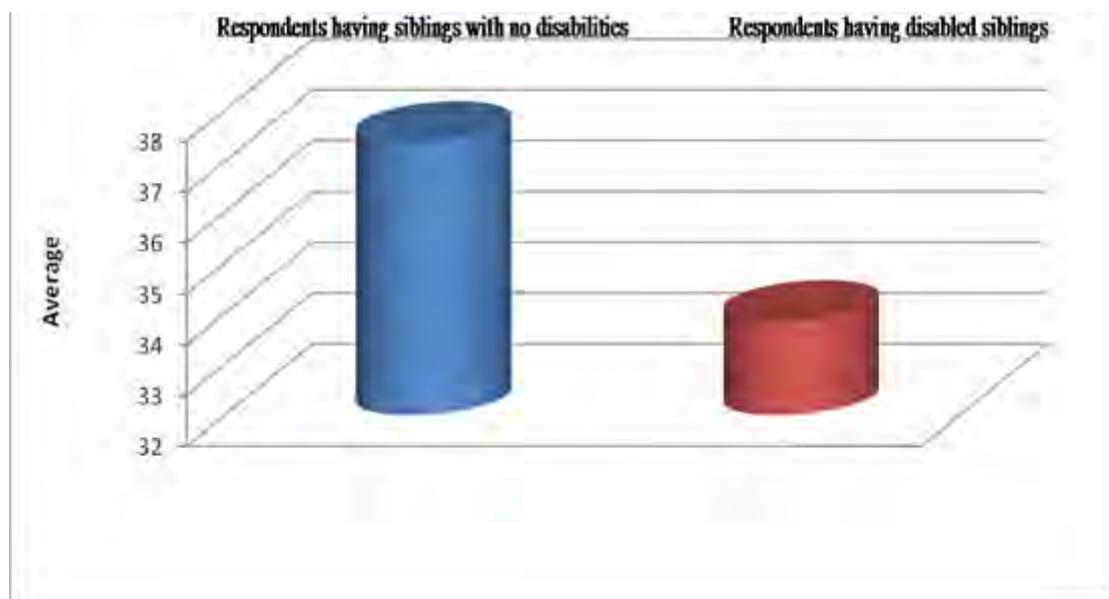


Figure 2 The occurrence of disability in siblings vs. the level of the Quality of Life Scale obtained by the surveyed respondents

The research findings show that the siblings of people with disabilities experience a lower quality of life in early adulthood than their peers having siblings with no disabilities. Yet, it does not have to go hand in hand with lower satisfaction

with life and life contentedness. In order to make the siblings of people with disabilities grow up to be happy adults who have a positive relationship with the disabled sibling, they need to be supported by parents from the earliest years of life as

well as they require institutional support. Based on the American experiences, one may conclude that the development of systemic solutions for integrating the siblings into the idea of supporting and normalizing the living conditions of people with disabilities is essential. This is a group of people who have the longest contact with their disabled siblings and should therefore be supported so that this fact does not affect the quality of their adult life and their satisfaction with life, contentedness and happiness.

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THE CORRELATIONS BETWEEN TROPHOLOGY STATUS AND THE MAIN DISEASE CHARACTERISTICS OF PATIENTS WITH BILIARY GENESIS CHRONIC PANCREATITIS

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Abstract:

Chronic or long-term pancreatitis is an inflammation of pancreas that impairs our body's ability to digest food and regulate blood sugar. Alcohol abuse is the most frequent cause of chronic pancreatitis, but autoimmune diseases, gallstones, cystic fibrosis, and several other conditions can also cause it. The damage caused by chronic pancreatitis is usually permanent. The pain and symptoms can usually be managed with proper treatment. The treatment for chronic pancreatitis includes medication, endoscopic therapies, and sometimes surgery. Chronic pancreatitis is an inflammation of your pancreas that doesn't improve over time. The objective of the study was to evaluate correlations between indicators of trophological status and the main disease characteristics in patients with biliary genesis chronic pancreatitis. The provided correlation and regression analysis has proved that the age of patients, disease duration, and functional ability of the pancreas determined by faecal α -elastase level and structural state of the pancreas according to ultrasound criteria points and by the method of shear wave elastography are predictors of anaemia, iron deficiency, immunodeficiency, hypoproteinaemia, mineral and vitamin deficiencies development in patients with CP. In discussion is presented possibilities of yoga applications possibilities in patients with chronic pancreatitis.

Keywords:

chronic pancreatitis, trophological status, anaemia, correlation and regression analysis, shear wave elastography.

INTRODUCTION

The pancreas is an organ located behind stomach. It produces enzymes, which are special proteins that help digest food. Also it produces hormones that control the level of sugar in bloodstream. Pancreatitis occurs when your pancreas becomes inflamed. Pancreatitis is

considered acute when the inflammation only lasts for a short period of time. Pancreatitis is chronic when it keeps coming back or when the inflammation doesn't heal for months or years. Chronic pancreatitis can lead to permanent scarring and damage. Calcium stones and cysts may develop in pancreas, which can block the duct, or tube, that carries digestive

enzymes and juices to the stomach. The blockage may lower the levels of pancreatic enzymes and hormones, which will make it harder for body to digest food and regulate the blood sugar. This can cause serious health problems, including malnutrition and diabetes (Dítě, 2001).

Chronic or long-term pancreatitis is an inflammation of pancreas that impairs our body's ability to digest food and regulate blood sugar. Unlike acute, or short-term, pancreatitis, chronic pancreatitis doesn't get better over time. Alcohol abuse is the most frequent cause of chronic pancreatitis, but autoimmune diseases, gallstones, cystic fibrosis, and several other conditions can also cause it. The damage caused by chronic pancreatitis is usually permanent. The pain and symptoms can usually be managed with proper treatment. The treatment for chronic pancreatitis includes medication, endoscopic therapies, and sometimes surgery. Chronic pancreatitis is an inflammation of your pancreas that doesn't improve over time (Healthline, 2017).

There are numerous different causes of chronic pancreatitis. The most common cause is long-term alcohol abuse. Approximately 70 percent of cases are linked to alcohol consumption. Autoimmune diseases can also cause the chronic pancreatitis. Autoimmune disease occurs when the body mistakenly attacks your healthy cells and tissues. Inflammatory bowel syndrome, which is inflammation of the digestive tract, and primary biliary cirrhosis, which is a chronic liver disease are associated with chronic pancreatitis. Other causes include a narrow pancreatic duct, which is the tube that carries enzymes from the pancreas to the small intestine. The other

reason of pancreatitis is a blockage of the pancreatic duct by either gallstones or pancreatic stones, cystic fibrosis, which is a hereditary disease that causes mucus to build up in your lungs, genetics and a high level of triglyceride fats in your blood, which is called hypertriglyceridemia (Dítě, 2001).

What are risk factors and who is at risk for getting chronic pancreatitis? Abusing alcohol increases your risk of developing chronic pancreatitis. Smoking is believed to increase the risk of pancreatitis among alcoholics. In some cases, a family history of chronic pancreatitis can increase your risk. Chronic pancreatitis most frequently develops in people between the ages of 30 and 40. The condition is also more common among men than women. Children living in tropical regions of Asia and Africa may be at risk for developing tropical pancreatitis, which is another type of chronic pancreatitis. The exact cause of tropical pancreatitis is unknown, but it may be related to malnutrition (Healthline, 2017).

Chronic pancreatitis has different symptoms. At first, you may not notice any symptoms. Changes in the pancreas can become quite advanced before you begin to feel unwell. When symptoms occur, they may include: pain in upper abdomen, diarrhoea, fatty stools, which are loose, pale, and don't flush away easily, nausea and vomiting, unexplained weight loss, excessive thirst and fatigue. You may experience more severe symptoms as the disease progresses, such as: pancreatic fluids in your abdomen, jaundice, which is characterized by a yellowish discoloration in your eyes and skin, internal bleeding and intestinal blockage. Painful episodes can last for hours or even days. Some

people find that eating or drinking can make their pain worse. As the disease progresses, the pain may become constant (Dítě, et al 2011).

Chronic pancreatitis is diagnosed difficult. During the early stages of chronic pancreatitis, changes in the pancreas are difficult to see in blood tests. For this reason, blood tests typically aren't used to diagnose the disease. However, they may be used to determine the amount of pancreatic enzymes in your blood. Blood tests may also be used to check kidney and liver function. Your doctor might ask you for a stool sample to test for levels of fat. Fatty stools could be a sign that your body isn't absorbing nutrients correctly. Imaging tests are the most reliable way to make a diagnosis. Following studies should be done on the abdomen to look for signs of inflammation: X-rays, ultrasounds, CT scans, MRI scans, and endoscopic ultrasound (Chronic pancreatitis 2017 (Healthline, 2017)).

Treatment for chronic pancreatitis focuses on reducing the pain and improving the digestive function. The damage to the pancreas can't be undone, but with the proper care, you should be able to manage most of your symptoms. Treatment for pancreatitis can include medication, endoscopic therapies, or surgery. Possible medications include: pain medication, artificial digestive enzymes if your enzyme levels are too low to digest food, insulin if you have diabetes, steroids if you have autoimmune pancreatitis, which occurs when body's immune system attacks the pancreas. Some treatments use an endoscope to reduce pain and get rid of blockages. It allows removing pancreatic stones, place small tubes called stents to

improve flow, and close leaks. Surgery is not necessary for most people. However, if you have severe pain that isn't responding to medication, removing part of your pancreas can sometimes provide relief. Surgery may also be used to unblock your pancreatic duct or to widen it if it's too narrow. It is important to avoid alcohol after you've been diagnosed with chronic pancreatitis, even if alcohol wasn't the cause of your illness. You should also avoid smoking because it can increase your risk of developing pancreatic cancer. You may need to limit the amount of fat in your diet and take vitamins. Chronic pancreatitis has the potential to cause numerous complications. You're at greater risk of developing complications if you continue to drink alcohol after you've been diagnosed. Nutrient malabsorption is one of the most common complications. Since your pancreas isn't producing enough digestive enzymes, your body isn't absorbing nutrients properly. This can lead to malnutrition. The development of diabetes is another possible complication. Pancreatitis damages the cells that produce insulin and glucagon, which are the hormones that control the amount of sugar in your blood. This can lead to an increase in blood sugar levels. About 45 percent of people with chronic pancreatitis will get diabetes (Dítě et al, 2011).

Some people will also develop pseudocysts, which are fluid-filled growths that can form inside or outside of your pancreas. Pseudocysts are dangerous because they can block important ducts and blood vessels. They may become infected in some cases. The outlook depends on the severity and underlying cause of the disease. Other factors can affect your chances of recovery,

including your age at diagnosis and whether you continue to drink alcohol or smoke cigarettes. Prompt diagnosis and treatment can improve the outlook (Healthline, 2017).

In the long course of chronic pancreatitis (CP), there is an imbalance between patient's intake of nutrients and her need in them. Trophological insufficiency (TI), which is the lack of nutrients of organic and inorganic origin that a human body needs to live, develops. (Babinets 2014, Löhr, Klöppel, 2008). TI is polynutrient in its composition, i.e. lacking macro components (proteins, fats, carbohydrates) and micro components (vitamins and some chemical elements) in different ratios (Babinets 2014). TI occurs because of both exogenous agents (inadequate intake of nutrients from food, caused by a sparing diet a patient has to follow due to pain syndrome, as well as irrational diet due to alcohol abuse, socio-economic reasons and low medical awareness) and endogenous agents (malutilization of nutrients in a patient's body) (Dominguez-Muñoz, 2005).

OBJECTIVE

The objective of the study was to evaluate correlations between indicators of trophological status and the main disease characteristics in patients with biliary genesis chronic pancreatitis.

MATERIAL AND METHODS

115 patients with biliary genesis CP were examined comparable to etiological factor and socio-economic conditions and nutrition (normotrophic food per 5 times a day without aggressive food (fatty, spicy,

sour, fried products). Also an effect of the alcohol factor was excluded. 20 young healthy people were included in the control group. Among patients with CP 75 were women and 40 were men, the average age of patients was (52.4 ± 3.2) years. The duration of the disease was (12.8 ± 3.1) years.

The diagnosis of CP was made based on a generally accepted classification in Ukraine suggested by the Research Institute of Medical Science of Ukraine, which corresponds to the Marseille-Cambridge classification according to the "Unified clinical protocols of primary, secondary (specialized) medical care and medical rehabilitation of patients with chronic pancreatitis", approved by the Act of Ministry of Healthcare of Ukraine as of 10.09.2014 under # 638).

Statistical processing was performed by correlation analysis. The strength of communication between clinical laboratory parameters of trophological status and main clinical characteristics of the disease was evaluated according to the following limits: 0, 10-0, 29 – weak intensity; 0, 30-0, 59 – moderate intensity; 0, 60-0, 99 - strong intensity.

RESULTS AND DISCUSSION

We considered appropriate to analysing possible predictor impact of the following general clinical CP characteristics (age, duration of the CP course, level of faecal α -elastase), which would allow to reliably evaluate the functional ability of pancreas as enzyme laboratory of the organism, as well as the structural characteristics of pancreas based on ultrasound points system and by the method of shear wave elastography and the

TS parameters. In the table the results of the correlations between clinical laboratory

parameters of TS and main clinical characteristics of the disease are presented.

Table 1 Correlation between trophological status indicators in patients with CP and the main characteristics of the disease (N=115, Males 40, Females 75).

Pair in regression connection	Age of patient years	Duration of CP years	Level of α -elastase mg/g	Ultrasound points	SWE kPa
Red blood cells, $\times 10^{12}/l$	-0.670 n=115 p<0.05	-0.502 n=115 p<0.05	0.517 n=115 p<0.05	-0.357 n=115 p<0.05	-0.512 n=115 p<0.05
Haemoglobin, g/l	-0.502 n=115 p<0.05	-0.333 n=115 p<0.05	0.302 n=115 p<0.05	-0.330 n=115 p<0.05	-0.603 n=115 p<0.05
Sera iron, mmol/l	-0.613 n=115 p<0.05	-0.495 n=115 p<0.05	0.375 n=115 p<0.05	-0.289 n=115 p<0.05	-0.509 n=115 p<0.05
Transferrin, mg/dL	0.733 n=115 p<0.05	0.640 n=115 p<0.05	-0.535 n=115 p<0.05	0.434 n=115 p<0.05	0.598 n=115 p<0.05
Total protein, g/l	-0.569 n=115 p<0.05	-0.417 n=115 p<0.05	0.570 n=115 p<0.05	-0.307 n=115 p<0.05	-0.601 n=115 p<0.05
Ascorbic acid, mg/l	-0.449 n=115 p<0.05	-0.386 n=115 p<0.05	0.425 n=115 p<0.05	-0.317 n=115 p<0.05	-0.511 n=115 p<0.05
Retinol, mmol/l	-0.437 n=115 p<0.05	-0.429 n=115 p<0.05	0.420 n=115 p<0.05	-0.286 n=115 p<0.05	-0.612 n=115 p<0.05
Tocopherol, mmol/l	-0.536 n=115 p<0.05	-0.328 n=115 p<0.05	0.493 n=115 p<0.05	-0.305 n=115 p<0.05	-0.498 n=115 p<0.05
Note: n – number of pairs in the correlation analysis; p – degree of reliability of correlation.					

According to the received information it has been found, that there are direct correlation ties of moderate and strong intensity between anaemic syndrome levels of total protein, vitamins and age, disease duration, faecal α -elastase indicators, ultrasound data in points and indicators of SWE. All examined trophological status parameters were direct correlation ties of moderate intensity between faecal α -elastase indicators. Found data are

evidence in significant predictor influence of age, CP duration, severeness of ESI of pancreas in terms of faecal α -elastase level and ultrasound point's parameter on the onset and severeness of trophological violations.

Comparative relationships analysis between the structural state of the pancreas (according to the ultrasound in points and method ESI) and parameters of the TS showed the presence of strong ties with the

ESI indicators, that demonstrated higher diagnostic value of this method.

Discussion to yoga applications for the quality of life improving in patients with chronic pancreatitis

According Lewith, the pain that develops in chronic pancreatitis is often severe, chronic, aggravated by meals and may be present continuously including at night. In some patients the pain is so severe that they develop a fear for eating and, as a consequence, they lose significant amounts of weight. The pain may begin gradually; however, in many patients over time they develop into continuous pain. Therapy of chronic pancreatitis rests on five arms: Avoidance of alcohol, treatment of pain, replacement therapy for exocrine and endocrine insufficiency and adequate nutrition. Alcohol withdrawal improves pain and the patient's compliance. It also seems to retard the chronic inflammatory process. Yoga as a clinical intervention has been associated with a variety of physical and psychological health outcomes such as improved mood and reduced symptoms of anxiety and depression (Lewith, 2000).

Theory of homeostasis can be considered as a synonym of yoga. Classical yoga includes techniques of developing a healthy lifestyle, which reflect the latest modern knowledge about oxidative stress, about the importance of acid-base balance, about the interconnectedness of psychosomatic effects on the organism. Yoga influences on increasing of the functional ability of human psyche and resistance to environmental stress. Yoga is generally a safe therapeutic intervention and effective to attenuate other health-related symptoms. Researchers aimed at systematically reviewing and meta-

analysing the effectiveness of yoga interventions. Treatment effects of yoga could be improved in well-designed future studies (compare with Krejčí, 2016 and Boehm, Ostermann, Milazzo, Büssing, et al., 2015).

While findings from the current study provide preliminary results, indicating that yoga can be used as an intervention to reduce stress and anxiety in patients of chronic pancreatitis, proper training and knowledge of the principles that guide the practice of yoga must be thoroughly understood and demonstrated by any recreation therapist who would like to use this intervention with clients (Sareen, Kumari, Singh-Gajebasia, Kaur-Gajebasia, 2007).

Büssing, Michalsen, Khalsa, et al (2015) following main categories of randomized clinical trials are reported that positive benefits of yoga interventions to reduce fatigue were proved in analysed studies in healthy persons as well as in patients with cancer, multiple sclerosis, diabetes, chronic pancreatitis, asthma, and fibromyalgia.

Even 20 years ago research team of Kabat-Zinn, Wheeler, et al. (1998) aimed to determine the effectiveness of yoga on quality of life in patients of chronic pancreatitis. The patients were randomized to two groups. The control group continued their usual care as directed by their physicians. Patients in the yoga group, in addition, received biweekly yoga sessions for 12 weeks. The patients' demographic and health behaviour variables were assessed before and after the yoga programme using Medical Outcomes Short Form (SF-36) for quality of life, Profile of Mood States for assessing mood and Symptoms of Stress Inventory for

measuring stress. A total of 60 patients were monitored. 30 patients were randomized to the yoga group and 30 to the control group. They ranged in age from 41 to 69 years (mean, 50). All participants were diagnosed with chronic pancreatitis and were taking pain and anxiety medications. 86% of the patients were males and 90% of them were alcoholic at some stage of their life. All data were analysed using the SPSS package. An alpha level for a significant difference was set at 0.01 because of the number of variables. The yoga program was designed to complement the management of pain and anxiety based on a sequence of yoga postures, a yoga program was designed for participants. The sessions were held in early morning. Significant improvements were seen in overall quality of life, symptoms of stress, mood changes, alcohol dependence and appetite after the 12 weeks period apart from the general feeling of well-being and desire to continue with the programme in future in the yoga group. The results provided evidence that a relatively brief mindfulness meditation and exercise based stress reduction programme could effectively improve the quality of life, mood disturbance and stress related symptoms in patients with chronic pancreatitis, consistent with other investigations of similar interventions in different populations (Kabat-Zinn, Wheeler, et al. 1998).

We can discuss that yoga programmes may be very effective on improving the quality of life in patients of chronic pancreatitis. It should be open a way to monitoring and yoga practicing in SPA and wellness centres to promote the healing processes in patients with chronic

pancreatitis. In the Czech Republic, despite yoga's wide popularity there, limited numbers of randomized, controlled yoga studies using objective quantitative outcome measures in patients with chronic pancreatitis were published in last five years.

Stress reduction and anxiety management programs could be useful for any disease because they help to create a supportive environment, in which the individual may have reduced anxiety. It is reasonable to conclude that even greater benefits may be obtained by participants who continue to practice over time and adopt yoga as part of their daily life.

CONCLUSIONS

According to the data of correlation and regression analysis, it has been proved that the age of patients, disease duration, functional ability of the pancreas in terms of faecal α -elastase and structural state of the pancreas by the criteria of ultrasound in points and by the method of SWE are predictors of the development and progression of anaemia, hypoproteinaemia and vitamin deficiencies for the patients with CP of biliary genesis. That's should be considered in clinical practice to form the most effective medical complex.

Most standard therapies for chronic pancreatitis frequently carry adverse effects, particularly in older patients, further compromising their quality of life. NSAIDs carry a 2- to 5-fold increased risk of gastrointestinal bleeding, which increases with age (Johnson, Day, 1991). When yoga was added to the standard therapy, patients tended to take fewer medications. Yoga offers a very distinct approach to pain. It brings awareness to the

body, especially to the parts that are in pain. Yoga helps individuals with or after chronic pancreatitis become more accepting of their body and less judgmental and reactive to pain.

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ADAPTED PHYSICAL ACTIVITY AND AQUA GYMNASTICS AS A MAJOR PREVENTION TOOL IN OBESE CHILDREN

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Zuzana KORNATOVSKÁ

Abstract:

Obesity is one of the greatest socio-health problems of our time. The World Health Organization describes overweight and obesity as a global epidemic among children. It is the fastest growing age group according the obesity, in which special attention should be paid mainly to physical activity and sport. Lack of physical activity and malnutrition contribute to the increase in chronic non-infectious diseases through a common denominator such as overweight and obesity. Addressing the problem of obesity and civilization diseases is a priority for EU governments. Changing the current situation requires the development of strategic activities and the implementation of the EU Health Program 2020 EU Health Program. This builds on other European documents such as the European Charter on Counterfeiting Obesity and the EU Action Plan on Childhood Obesity 2014-2020. Obese children need to apply applied physical activities, both in school and out-of-school physical activities. The aim of this study was to increase physical activity and thereby reduce body weight in obese children using applied physical activity, specifically aqua gymnastics. 24 obese girls aged 11-12 years were divided into two groups. Experimental sample consists from 12 girls, adhering to the basics of healthy eating and increasing physical activity in the form of adapted physical activities and aqua gymnastics. Control sample consists from 12 girls, maintenance of diet and physical activity only in physical education lessons. It has been demonstrated that the social role of applied physical activity is indisputable. The systematic use of adapted physical activities and aqua gymnastics was the main factor in reducing the weight of the monitored girls.

Keywords:

Obesity, Girls in pubescence, Intervention program for weight reduce, Pedagogical experiment, Adapted physical activities, Aqua gymnastics

INTRODUCTION

Obesity is associated with high blood pressure, impaired metabolism of fats and sugars, increased blood clotting, atherosclerosis, is also a risk factor for the

most common malignant neoplasms (colon and rectum, breast, prostate, kidneys), for locomotor disorders, for chronic Lung disease, infertility, and a host of other conditions. The EU is facing an unfavourable position in obesity. At the

same time, it is also a sub-standard place in terms of comparison of expected life expectancy and life expectancy in health. In addition to genetic burden, social factors are the main determinants of the development of obesity. They co-create the living conditions and lifestyle of people. These include, in particular, lack of physical activity, incorrect nutrition with excessive energy intake, salt, animal and trans-fatty acids, sugars, along with insufficient fruit and vegetable intake (Bláha, 2015; Dimitrova 2014a). The development of obesity is also helped by insufficiently managed stress and socioeconomic inequalities. It has been shown that prevention by a suitable lifestyle is able to prevent obesity in most people. On the other hand, early comprehensive treatment of obesity can reverse already developed metabolic complications and thus prevent other chronic non-infectious diseases. At present, preventive measures are not being used to a sufficient extent, including social activities with the creation of a healthy environment and the health of people's protective behaviour. There is also a lack of use of the latest procedures in the treatment of obese patients in order to demonstrate significant savings in spending on health care and social security for patients with obesity and chronic non-infectious diseases.

Krejčí, Hošek (2016) declare, that in nowadays the movement insufficiency (hypo kinesis) can be observed in adults as in child age as well. Its psychic symptoms (so called "hypo kinetic syndrome") are impulsivity, irritation, dis-concentration, and lack of self-control, discomposure and aggressiveness. In children age is the

movement insufficiency an unphysiological phenomena, it is manipulated through the TV watching, computer and video games, video programs a mobile phones treatment Experience of adventure, in the past realized in different child games and playing, in nowadays is replaced by a virtual experience with minimizing of movement activity. Just the movement insufficiency (hypo kinesis) is the reason, because the motor learning is inhibited from childhood.

The movement insufficiency (hypo kinesis) is also one of the main reasons of increasing trend of overweight and obesity in children and in adults. Health complications of the overweight and obesity are numerous and influence negatively on the quality and duration of human life. According WHO documents 80% of obese children stay to be obese in adult age with all health risks.

Research of effective methods in overweight and obesity management is an important and actual science task on which solving many experts participate. Significantly all of them agree in importance of an individual movement regime. The aim of research work in our Institute is to specialize on an approach to overweight and obesity management in children and in adults, particularly on the base of 2 phases adequate movement regime, induced changes in self-control and in self-esteem, in first through the yoga training led in daily home practicing (3 months), and after through the coherent adequate movement activities (2 weekends, one week course) again led in daily leisure time, see Figure 1.

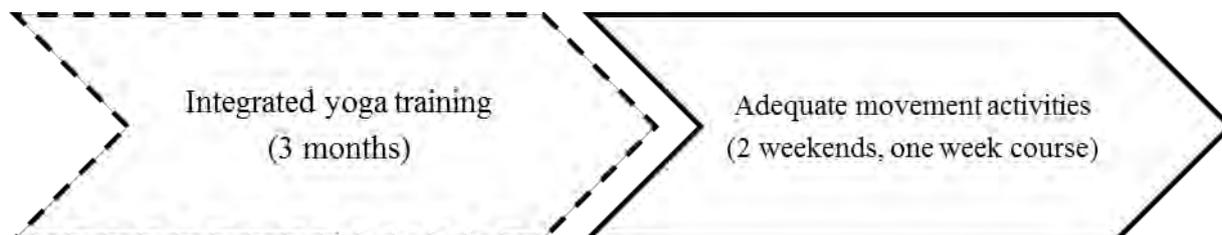


Figure 1 Scheme of algorithm of 2 phases adequate movement regime

Krejčí, Hošek (2016) accent that adapted physical activities may be in closed connection with the adequate movement regime and the kinesis protection. Adequate means sufficient. To be adequate to the age, to the personal skills, to the individual needs etc. The base is created on the well-being, joy, play and creativity. – It means to move and in the same time experience well- being and joy. To move and play we can alone or with a partner. Different movement activities, adequate to the individual skills, inclinations and interests and suitable implemented in daily life, create the adequate movement regime. Its basic characteristics and principles are defined (in the line according the importance and the consequence) in the next points:

- **Coping** – in the sense of individual managing and mastering of movement. What for one is easy, for the second is difficult. The main role is playing: condition, age, health situation, impairments, etc. Coping is the base of progress in motor learning.
- **Spontaneity** – in the sense of freedom, facility, pleasure during the movement activity, eventually to experience „flow effect“. The spontaneity is the preposition for the saturation benefit.
- **Saturation** – in the sense of satisfaction, self-realization, self-determination during the movement activity and after it. The person has tendency to return to the movement activity again and again.
- **Repeatability** – in the sense of wish to return to the movement activity and to develop the performance as possible. Only in this step is real to begin with regular training with variable training load. The person accepts discomfort and even a pain.
- **Training** – in the sense of the variable dosage of the intensity according to the health situation, age, condition, body structure, sex, etc. During the training process can be developed a positive dependency on the movement activity. An obstacle can be availability of the movement activity every day.
- **Availability** – in the sense of regular, daily application of movement activity. It depends of nature conditions, time factors, solvency, laws, etc. Here usually begins combination of daily activity with season, temporal movement activities (for example yoga + alpine skiing + biking).

Adequate movement regime is created.

- **Safeness** – in the sense of the accident prevention, rescue during the movement activity realization. To keep principles of safeness. Only safe movement activity is adequate to the person. Again an important role plays: health situation, age, condition, body structure, sex, availability of equipment, etc.

On the base of adequate movement regime is possible to develop individual motoric skills. All, what is learned should be used in normal daily life and active life style according individual specifics and needs as for example to swim, aqua gymnastics, yoga, etc.

Kornatovská, Bláha, Hošek (2016) describe anthropometric characteristics of height and weight in Czech intact children population completed 6 times after the 2nd war in Czech Republic and on this base the Czech norms of children's weight, height and BMI were defined. The objectives of the study was to compare anthropometric characteristics of a group of mental disability children with the norms of intact population of children in Czech Republic, in second to analyse an intervention influence of physical activity on the monitored anthropometric parameters of height, weight and BMI in the experimental groups. Together 180 participants with disabilities (90 males, 90 females, in the age 8-15) divided in experimental and control groups participated in the experimental study, when 3 times in one year period of the intervention program duration, the named anthropometric characteristics were tested.

The investigation followed by data analyses (repeated measures ANOVA model consisting of Subject factor, between-subject factors Gender and Intervention and between-factor interactions). As expected, when evaluated the intact population data with the groups of children with disabilities, we have found significant differences. Based on the analysis of the results is guided discussion whether lack of physical stimulation has a negative impact on weight and height of children with disability. Further, it is discussed the question of kinesis protection, the level of burden in children with disability due to optimal physical development, as well as the question of sedatives and medicaments applied for children with disabilities due to symptoms of anxiety and maladaptive behaviour. Based on the Trans theoretical Model of Behaviour Change, a better understanding of the determinants of exercise behaviour is beginning to emerge.

Kornatovska (2009) found out that swimming has significant influence over psyche and moods changing in adapted physical activities in mental handicapped children. In the case of mental disability is necessary the swimming training creatively adapt and vary regarding to particular abilities of an individual. Swimming in salt water is easier than in fresh water. Salt water influences positively physical activity in water, it makes easier otherwise difficult skill of the back-floating position. Persons in salt water are more upheld than in fresh water, namely on the ground of higher density of water. Therefore swimming and physical movements in sea water are easier than in fresh water. By what the sea water is denser it makes easier swimming for everybody. Swimming skills

development in the process of motoric learning would be easier achieved in the sea (in case of calm sea cove) than during the motoric learning in swimming-pool training.

Through control physical activities training children with overweight or with obesity can experience inner feelings during the physical activity and to find individual dispositions. As it was mentioned in the beginning, it should be not discounted manifestations of fear, anxiety, as a subjectively observed state of threat in our “psychic philtre”. They are emotions, which inhibited the natural activity, including the movement activity as well.

OBJECTIVE, HYPOTHESES

The aim of this study is to increase physical activity and thus reduce body weight in obese females aged 11-12 through an interventional motion program using adapted physical activities and aqua-stimulating activity, i.e. aqua gymnastics.

Hypotheses H1: After the Intervention will be analysed significant reduce of weight in the experimental sample (ES) compare to the control sample (CS).

Hypotheses H2: After the Intervention will be analysed significant reduce in waist circumference in the experimental sample (ES) compare to the control sample (CS).

METHODOLOGY

Material and procedure

The material consists of 24 obese girls aged 11-12 years. The girls were divided into two samples on the base of random choose.

Experimental sample consists from 12 girls, adhering to the basics of healthy eating and increasing physical activity in the form of adapted physical activities and aqua gymnastics. Control sample consists from 12 girls, maintenance of diet and physical activity only in physical education lessons.

Methods

The following methods were used in the present study.

A. *Content analysis of literature* on the issue of physical activity in children with obesity and possibilities of weight reduction using applied physical activity.

B. *Pedagogical experiment:* For the purpose of this study, a special methodology was developed - an intervention program aimed at improving physical activity and reducing body weight in obese children. During the interventional exercise program, applied exercise and aqua-gymnastics were used. This experiment in the form of an interventional exercise program was performed for 9 months, three times a week for 60 minutes.

In the experimental group, a two-week aquarium and one applied exercise activity were included in the weekly schedule. Aqua-gymnastics in the experimental ensemble was performed twice a week in a 25 meter-long metropolitan swimming pool and 0.90 m - 1.60m deep, with a water temperature of 25-27° C. Interventional motion program using aqua-gymnastics included the following educational elements: Generally developing exercises in water, breathing exercises in water, aerobic exercise, exercises for muscle strength, endurance

exercises in water, stretching-stretching exercises (Nikolova, 2014). Applied physical activities were held in a gymnasium designed to teach physical education at the same school. The control group followed the basics of healthy eating and physical activity in physical education classes took place three times a week.

In both samples anthropometric examinations and motor tests to verify the effectiveness of the interventional movement program were performed before and after the experiment:

- Body height (cm) - Bláha (2017)
- Body weight (kg) - Bláha (2017)
- Waist circumference (cm) - Bláha (2017)

- Vital lung capacity (cm³) – Škeřík (2012)
- The strength of the back muscles - Dimitrova (2014b)
- Endurance force of the abdominal muscles - Dimitrova (2014b)
- Dynamic strength of the endurance of the lower limbs - Dimitrova (2014b)

C. *Statistics* In order to compare the accuracy of the difference between the

average values of the studied physical development and functional status indicators between the experimental group and the control group, statistical methods were used to compare the hypotheses t - student test (dependent and independent samples) with a significance level <0. 05.

RESULTS AND DISCUSSION

Physical evolution reflects changes in the morphological-functional properties of the human body in the process of ontogenetic development, that is, in individual life. It is primarily a natural biological process that is genetically conditioned, but depending on living conditions (natural and social). Under the influence of the above mentioned factors there are changes in selected anthropometric indicators of children: height, weight, waist circumference and others. Physical development is not only in the area of quantitative change but also changes in quality.

Table 1 and Table 2 show comparisons of the respective averages for the variables, experimental and control groups at the beginning and end of the study.

Table 1 Comparison of the mean value for variables - start and end of study in the experimental samplet of children (N = 12, females)

Tests / Indicators	Pre	Post	P	t cr.
Body height (cm)	140,77	142,41	0,00	1,51
Body weight (kg)	53,82	47,18	- 1,00	0,33
Waist circumference (cm)	75,9	73,1	1,00	1,83
Vital lung capacity (cm ³)	655	830	0,00	2,95
The strength of the back muscles	15,3	17,00	0,00	2,67
Endurance force of the abdominal muscles	16,3	19,1	- 1,42	2,86
Dynamic strength of the endurance of the lower limbs	11,06	14,7	1,21	3,00

Table 2 Comparison of the mean value for variables - start and end of study in the control sample of children (N = 12, females)

Tests / Indicators	Pre	Post	P	t cr.
Body height (cm)	139,2	140,5	0,00	1,50
Body weight (kg)	52,68	49,18	0,01	1,74
Waist circumference (cm)	77,8	75,6	0,01	1,95
Vital lung capacity (cm ³)	500	630	0,00	3,84
The strength of the back muscles	14,29	15,31	0,00	3,43
Endurance force of the abdominal muscles	13,28	16,12	0,42	2,41
Dynamic strength of the endurance of the lower limbs	11,14	16,7	0,07	2,03

The results of body height changes during the experiment

At the end of the study, there was a tendency to increase the height indicator, where average growth was achieved in both groups. The experimental group increased by 1.64 cm, the control group increased by 1.3 cm, see Figure 2. The analysis showed that in both groups there were statistically significant differences in the mean level of

height (cm) at the beginning and at the end of the study. For this reason, it is not possible to say with certainty that the adapted physical activity and aqua gymnastics used in the experimental sample affected the body height. Very likely, it is due to the biological development of adolescents and natural factors (such as nutrition, healthy lifestyle, physical activity, etc.) as well as obesity limiting physical development.

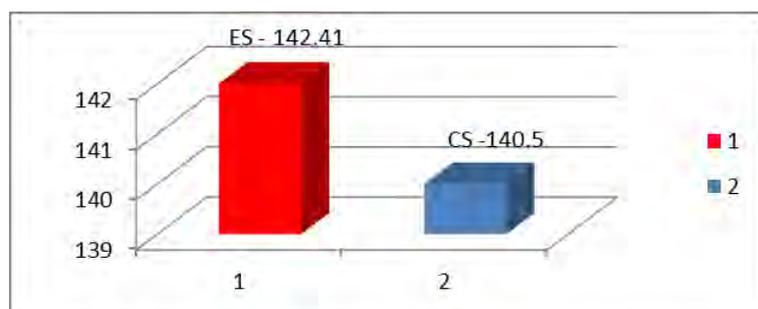


Figure 2 Body height (cm) in ES and CS children at the end of the experiment (N = 24, females)

The results of body weight changes during the experiment

At the end of the study, there was a tendency to decrease the mean value of the body weight indicator in both groups. In the experimental group, the value of 6.64 kg was reached, compared with the control group,

where the 3.5 kg decrease was seen (Figure 3). With the weight parameter, we can safely say that the methodology used in the interventional motion program using the applied exercise and aqua-gymnastics in the experimental group significantly affected the change in body weight (kg) in these children.

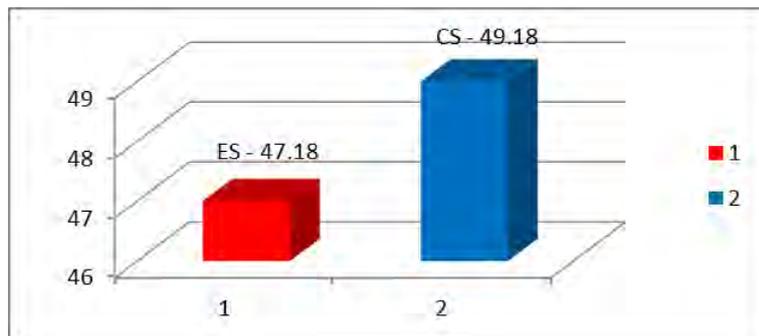


Figure 3 Body weight (kg) in ES and CS children at the end of the experiment (N = 24, females)

The results of vital lung capacity changes during the experiment

Vital capacity (cm³) is the maximum volume of air that can be exhaled after a deep breath. It provides information of maximal lung ventilation in a child.

At the end of the study, there was a tendency to increase the maximum volume in both groups compared to the baseline. In

the experimental sample, the average lung ventilation diameter was increased by 45 cm³, compared to the control sample - see Figure 4. It can be assumed that the significant increase in average vital lung capacity in the experimental sample of children compared to the control sample was due to the inclusion of the interventional motion program in the experimental sample.

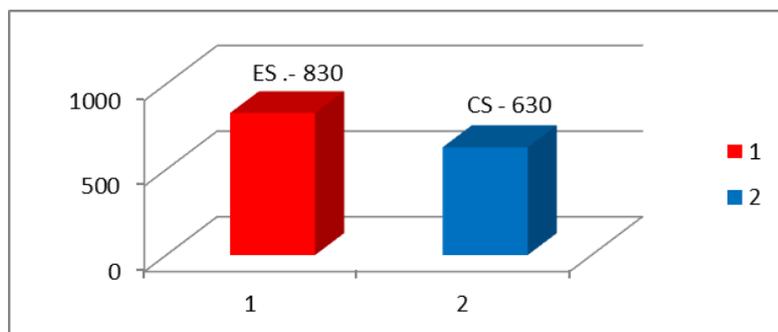


Figure 4 Vital lung capacity (cm³) at end of experiment in ES and CS children (N = 24, females)

The results of waist circumference changes during the experiment

At the end of the study, there was a tendency for a slight reduction in waist circumference. The experimental group

decreased by 2.8 cm and the control group decreased by 2.2 cm - see Figure 5. Small changes in the waist circumference indicator (cm) at the end of the study in both groups can be physiologically justified by the presence of abdominal fat.

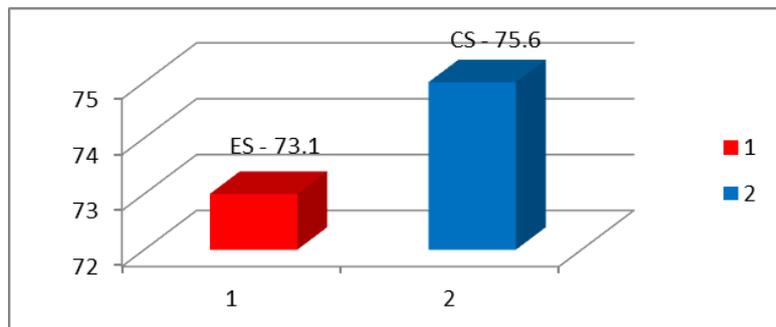


Figure 5 Waist circumference (cm) at end of experiment in ES and CS children (N = 24, females)

The strength of the back muscles changes during the experiment

At the end of the study, the two groups showed a tendency to increase the

mean values from baseline with a 1.7 s increase (experimental group) compared to the control 1.02 s (Figure 6).

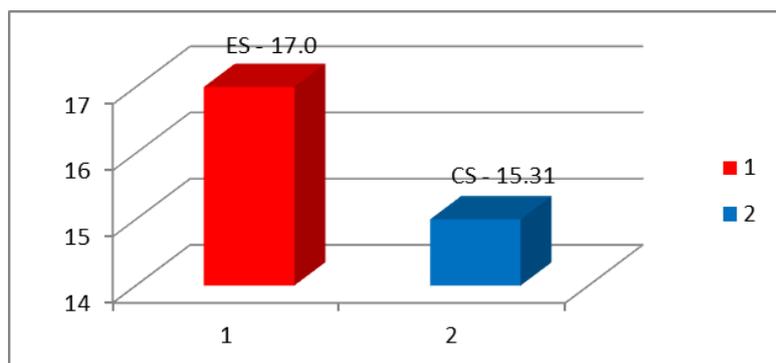


Figure 6 Strength of the back muscles at end of experiment in ES and CS children (N = 24, females)

The difference in the mean values between the two groups at the beginning of the study was 1.01 s, and at the end it changed to 1.61 s (in favor of the experimental group).

From the analysis it can be argued that there are one-way differences in the average level of strength of back muscles (s) in both groups at the beginning and at the end of the study, with significant changes in the mean values of the indicator

in each One of the study groups (in favor of the experimental group).

Consequently, we can not claim that the applied methodology of adapted physical education and aquimandism is the cause of the changes in the static strength of the back muscles (s) in the children from the experimental group.

The endurance force of the abdominal muscles changes during the experiment

At the end of the study, the two groups showed a tendency to increase the

mean values from baseline, with the increase in the experimental group within 2.9 s and in the control - 4.98 s (Figure 7).

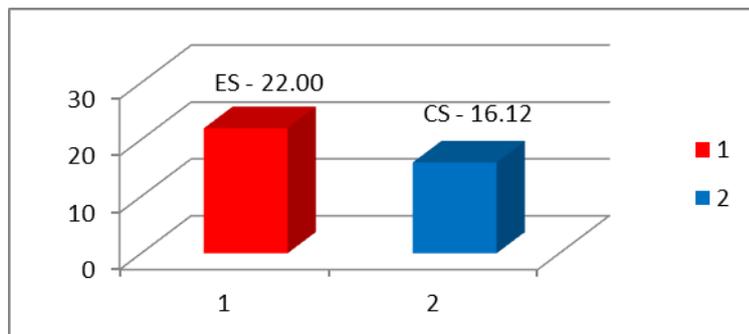


Figure 7 Endurance force of the abdominal muscles at end of experiment in ES and CS children (N = 24, females)

The analysis declare that in both samples there have been significant changes in the average values of the static power endurance of the abdominal muscle (s) at the end of study compared to baseline (in favour of the control sample). But since the two samples before the experiment, there are no significant differences in average score, and in the end such a difference exists, we can say that the developed methodology of adapted physical activities and aqua gymnastics cause positive changes in oxalic durability

of the abdominal muscle (s) in the individuals of the experimental group.

Dynamic strength of the endurance of the lower limbs changes during the experiment

At the end of the study, the two groups showed a tendency to increase the mean values from baseline, with the increase in the experimental group being within 5.7 and the control – 3.7 (see Figure 8).

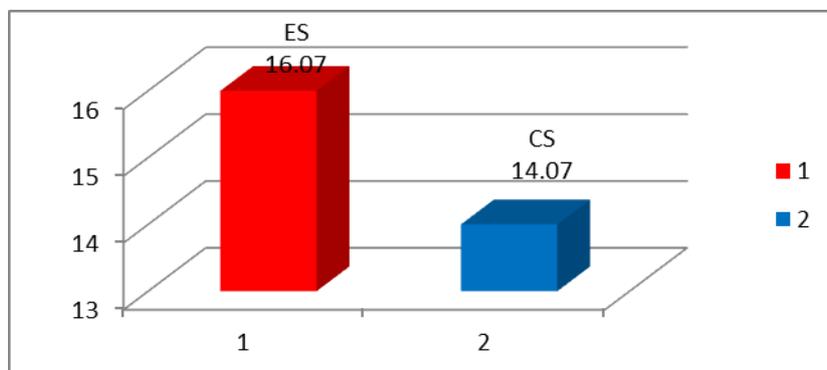


Figure 8 Dynamic strength of the endurance of the lower limbs at end of experiment in ES and CS children (N = 24, females)

Considering the significantly higher increase of the mean values of the indicator in the experimental group, it can be assumed that the reason for the change is the influence of the experimental methodology on adapted physical education and aqua gymnastics.

To solve the purpose and tasks of the study, the results of the tests conducted by each child on each of the observed signs

were evaluated on the basis of the whole set of levels. To reveal the individual peculiarities of each of the children in the experimental group, their results were evaluated using the sigmatical assessment method. The estimated T assessments of the children participating in the pedagogical experiment are presented in the Table 3.

Table 3 Individual assessments of the functional status of the surveyed children in ES (N=24, females)

Tests/ Indicators	Numbers of participants											
	N 1	N 2	N 3	N 4	N 5	N 6	N 7	N 8	N 9	N 10	N 11	N 12
Vital lung capacity	22.5	34.9	18.3	26.6	47.3	14.2	14.2	22.5	26.6	25.4	12.3	32.5
The strength of the back muscles	15.9	9.2	15.9	26.1	22.6	36.1	42.7	29.3	29.3	24.6	22.3	20.6
Endurance force of the abdominal muscles	9.8	28.8	28.8	16.1	9.8	35.1	22.4	28.8	35.1	25.1	15.2	31.1
Dynamic strength of the endurance of lower limbs	35.6	13.3	47.6	21.9	28.7	27.1	16.7	13.3	23.6	21.9	24.9	22.1
Summarized individual ratings	22.6	23.6	25.5	21.4	28.9	29.7	22.0	24.1	25.9	25.9	24.9	28.9

CONCLUSIONS

Planned aim of the study was fulfilled. Evaluation of the hypotheses is following:

Hypotheses H1: After the Intervention will be analysed significant reduce of weight in the experimental sample (ES) compare to the control sample (CS) was verified.

Hypotheses H2: After the Intervention will be analysed significant reduce in waist circumference in the experimental sample (ES) compare to the control sample (CS) was not verified.

The analysis of the results of the conducted study on of children with obesity and the generalized summaries allows formulating following conclusions and recommendations.

As a main result of the applied methodology of adapted physical activities and aqua gymnastics in obese children, there is generally a tendency to improve the physical signs and body weight reduction.

Following the methodology we have applied, the personal results of the surveyed persons and the average values of the group as a whole have improved. Unfortunately, for three of the indicators (body height, body weight, waist circumference), the differences are not statistically reliable, which is explained by the short period of the experiment and perhaps a need for correction of the methodology.

In the beginning and the end of the experiment, the coefficient of variation in the studied population is stable and relatively stable, which speaks of homogeneity and homogeneous homogeneity of the studied population in relation to the studied features.

The realized pedagogical experiment gives us reason to believe that the applied adapted methodology has a favourable effect on the physiometric indicators and the psycho-emotional status of the children who are happy to attend the courses of adapted physical education and aqua-gymnastics and show better self-esteem, which in turn supports their social integration.

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PHYSICAL FITNESS OF ELEMENTARY AND SECONDARY SCHOOL STUDENTS IN THE PARDUBICE REGION

Jaroslav KUBRICHT

Abstract:

The aim of the presented study was to verify the declining level of physical fitness in students comparing analysed data with the data of the previous pilot research study. To provide measures in larger sample of probands as in the pilot study was focused and supported of a Pardubice Region. In total 432 probands (228 females and 204 males) of the fourth class of the primary schools and 141 probands (71 females, 70 males) of the first class of secondary schools from Pardubice Region were measured using the test battery UNIFITTEST (6-60). The measured results show that the overall physical fitness of probands is below the average level and the amount of subcutaneous fat is significantly higher due to a population norm. At the same time there has been a decline in physical fitness compared with the previous research from 2010.

Keywords:

Unifittest, physical fitness, motor skills, somatic parameters, Pardubice Region

INTRODUCTION

Many abroad studies (Tremblay, LeBlanc, et al. 2011; Tremblay, Shields, et al. 2010; Andersen, Sardinha, Froberg, et al. 2008; Pate, Wang, Dowda, et al. 2006; Wedderkopp, Froberg, et al. 2004) show that the physical fitness of the population is declining. The same tendencies, with all the known and possible consequences, declared Ministry of Healthcare in Czech Republic in 2015 in Action plans for health support of children and youth (MZ, 2016).

After 2000, in the new millennium, the trend of diverting from moving to other activities is still accelerating and deepening, which is alarming not only for the present, but above all for the future. It has come so far that not possible to reach

children, who would just chase for a ball or otherwise move spontaneously for the pleasure. At the same time sports grounds are certainly enough both indoor and outdoor, when all Czech regions have been put into sport areas reconstructions a lot of financial resources in the past years. Unfortunately, the playgrounds are often empty. It is not possible to force young people to a healthier way of life, and there are many reasons why they go so differently.

The first major competition of sport as the most significant leisure activity of young people came decades ago with the onset of television broadcasting. Still, it was not as fundamental as the last twenty years of promise to a huge boom of computers. Currently, most children watch

TV, including DVDs, for more than two hours a day, and about seven out of ten children spend two hours or more each day at the computer. For example, in the age group of 15, there has been a massive increase in this trend of inclined youth from thirty to eighty percent, that is, half full! And in the modern era of tablets, smart phones and emerging technical features, it's hard to assume any future loss, rather the opposite MZ (2016).

Another important factor is the approach of parents who often do not want their children to leave themselves out of their security concerns. There are many dangerous traps in today's world, but this fear is sometimes too anxious or unnecessary. Not to mention that eight percent of current schoolchildren are at the parents' request exempt from PE and gymnastics (MZ, 2016). When all of the above factors are added together, it is hardly surprising that more and more young people spend most of their time at home or elsewhere shut absolutely free of movement. This then logically results in the worsening health of mankind. General physical fitness of elementary school pupils decreased.

Before we speculate about the causes, we need to verify this trend. In the first phase, research was carried out at a high school in Prague, which resulted in the physical fitness of the youth being lower compared to the standard values stated in the UNIFITTEST (6-60) test battery (Kubricht, 2010).

The Pardubice Region is one of the thirteen regions of the Czech Republic. It is still divided into four districts and, according to available information, 516 004 inhabitants lived in its territory at the

end of June 2014 (ČSÚ, 2016). In the school year 2014/2015 there were 251 primary schools in the Pardubice Region, attended by 40 959 pupils and 73 secondary schools attended 21 546 students (ČSÚ, 2016).

Consequently, in 2014, the OP VK 53 project for schools in the Pardubice Region entitled "Health question marks - options for increasing the health literacy of children and youth" (Registration number: CZ.1.07 / 1.1.00 / 53.0008) took place. 25 schools entered the project, of which twenty-two primary schools and three high schools. Part of this project was physical fitness measurement using the UNIFITTEST (6-60) test battery. Testing was carried out on pupils of the fourth grades of elementary schools and students of the first years of secondary schools. The results obtained from this project were processed and compared with the normalized values of the UNIFITTEST (6-60) test battery.

OBJECTIVES AND HYPOTHESES

The main objective of the presented study was to point out the worsening trend in the physical fitness of schoolchildren. The next long-term objective was to test possibilities of condition remedying.

METHODS

Characteristics of samples

Physical fitness measurement was attended by twenty two elementary schools and three high schools in 2014. Followed samples were selected for the study. Together 573 probands (298 females, 275

males) were measured. From that in total 432 probands - Sample E (228 females and 204 males) were pupils of the fourth class of the primary schools from Pardubice Region, and 141 probands – Sample S (71 females, 70 males) were students of the first class of secondary schools from Pardubice Region. The Basic Sample of the fourth classes pupils of elementary

schools consisted in total of 4 868 pupils in the Pardubice Region. The Basic Sample of the first classes students of secondary schools consisted in total of 4 075 students in the whole Pardubice Region (ČSÚ, 2016). The detail descriptions and the explanations in percentiles you can see in Figures 1 - 4.

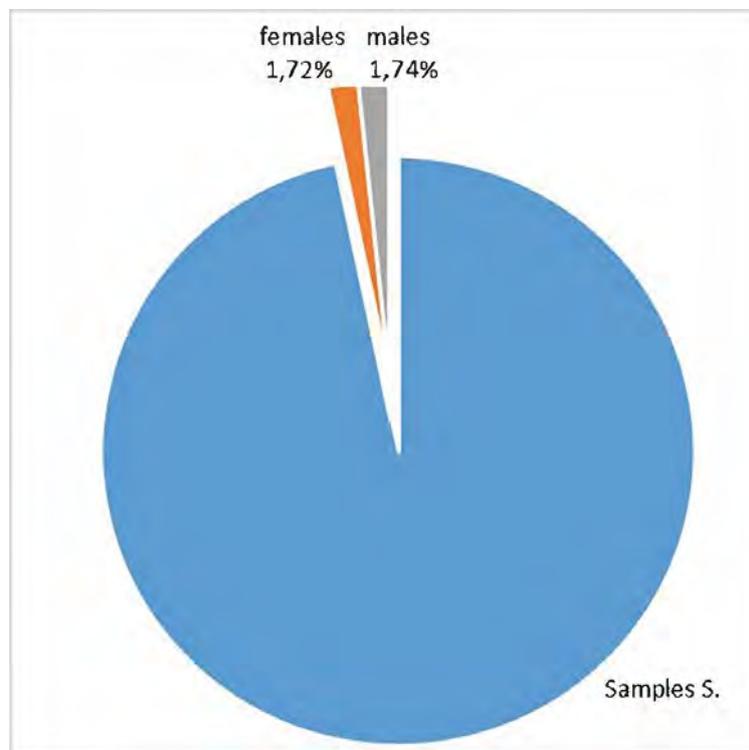


Figure 1 Percentage of Sample S probands (N=141) according the Basic Sample (N=4075) in Pardubice region

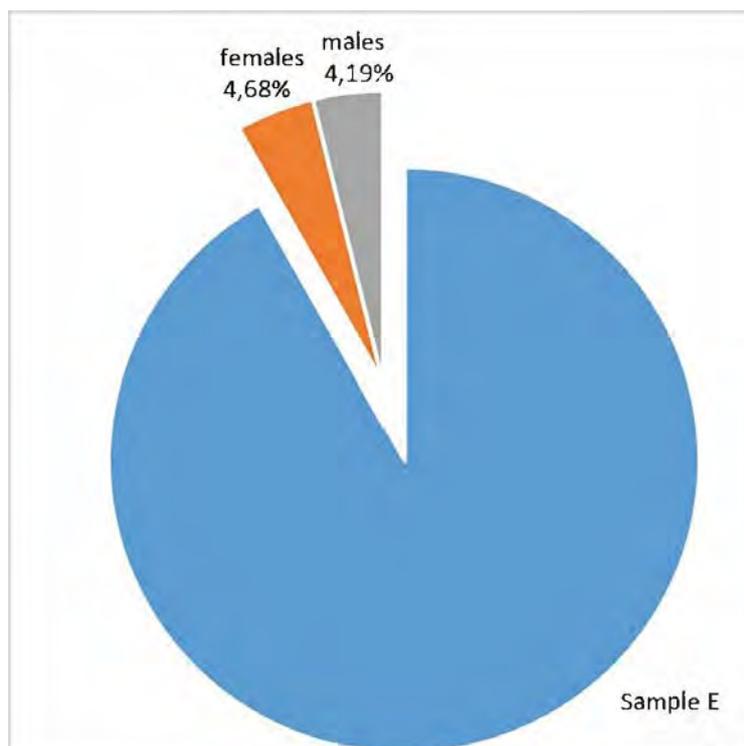


Figure 2 Percentage of Sample E probands (N=432) according the Basic Sample (N=4868 pupils) in Pardubice Region

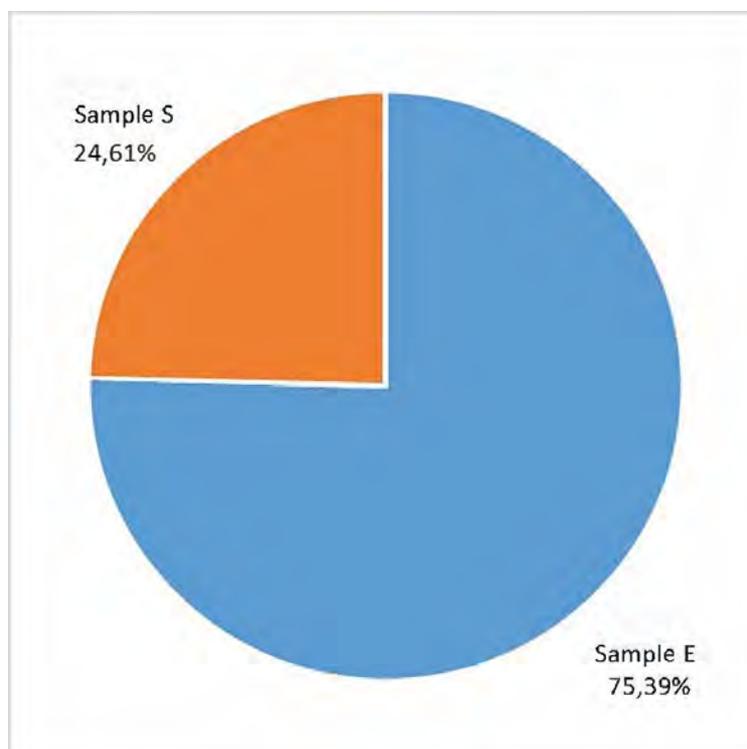


Figure 3 Percentage of probands Sample E and Sample S according the Type of school (N=573 probands, 298 females, 275 males)

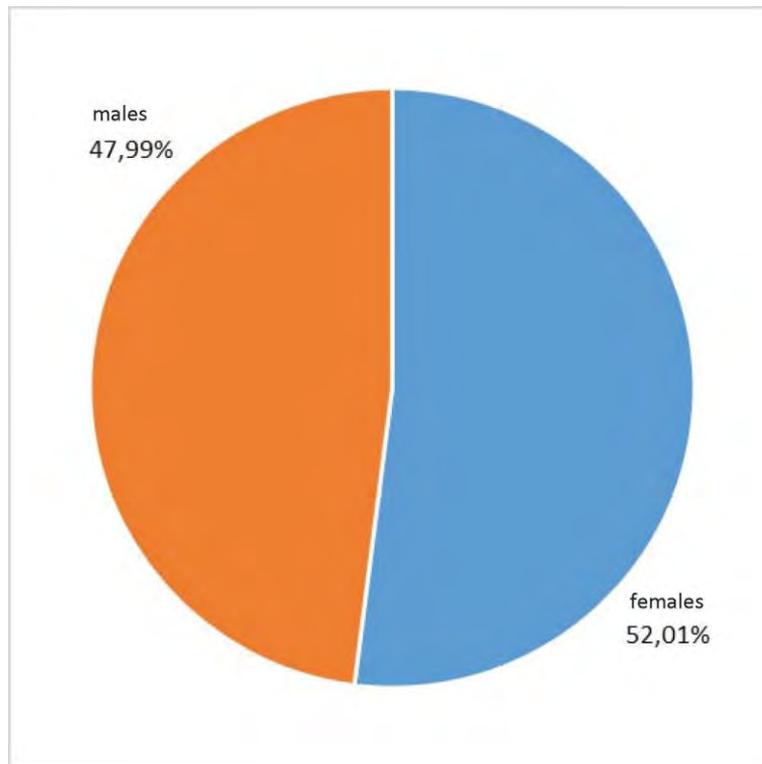


Figure 4 Percentage of probands Sample E and Sample S according sex (N=573 probands, 298 females, 275 males)

Organization of the research study

Measurement of the physical fitness of children and youth took place in the school year 2014/2015 at elementary and secondary schools in the Pardubice Region. This measurement was possible thanks to the call for OP VK 53 for schools in the Pardubice Region entitled "Health question mark - possibilities of improving the health literacy of children and youth" (registration number: CZ.1.07 / 1.1.00 / 53.0008). Within this project there was a key activity (KA4) called Physical Fitness.

This key activity was created in direct connection with the call for OP VK 53 to realize further physical fitness measurements, this time on a much larger

group of probands. The undisputed advantage was that a large amount of money was allocated to the entire measurement, which allowed several crucial steps.

First, it was necessary to get and buy enough tools to allow each school to borrow one set as it is required by the UNIFITTEST (6-60) Manual. In addition, a full-day seminar was organized for PE teachers from the participating schools, who were thoroughly instructed and trained on the issue of the whole UNIFITTEST (6-60) test battery, the use of aids and the recording of measured data. During the training, there was a theoretical and practical introduction, where everyone could try out the procedures. Together with

the accompanying materials, educational video was also created.

Given the number of probands and the relatively short period when all measurements were needed, it was important for each teacher to get familiar with the issue. During the course of the measurements, visits were made at schools and teachers were constantly provided with technical assistance, but all measurements were made by PE teachers.

During the measurement, and subsequently, when passing on the results, a number of problems had to be addressed. Even before the start of the work itself, it was necessary to ensure that all pupils had informed consent from their parents. Without this document, the pupil could not be included in the measurement. However, a much greater problem has been the inattention of teachers when recording results in pre-prepared tables. Most educators recorded data in units other than prescribed, or wrote several data into one cell in a spreadsheet. For these reasons, it was time consuming to process the acquired data.

On the other hand, it is important to appreciate the access of all participating teachers (PE teachers and school principals). Their attitude to the issue was very positive and active.

RESULTS AND DISCUSSION

After calculating the total score of the UNIFITTEST (6-60) test battery and determining the difference score it is quite clear that the results, in all the monitored categories, are well below the population standard (Měkota, Kovář, Chytráčková, et al. 2002). The graphical representation

(Figures 11-14) shows that the highest percentage representation has a "Significantly below average" rating compared to the theoretical values where the highest representation is rated "Average". The theoretical value for proband representation in the "average" rating is 38%. However, probands were found to have a much lower representation: primary school girls 23%, primary school boys 23%, girls 19% and secondary boys 21%. On the contrary, the theoretical value for proband representation in the "under-average" rating is 7%, and the probands were found to be significantly higher: primary school girls 36%, primary school boys 30%, girls 54% and secondary boys 44%.

These results show that the physical fitness of students of the 1st year of secondary schools dropped very significantly compared to the population standard, more than for pupils of the 4th year of elementary schools. Particular results in individual categories show that this significant decline in physical fitness is due in particular to a decrease in aerobic capacity and explosiveness of the lower limbs and a significant increase in the amount of subcutaneous fat. Differential scores (Chart 15-18) also do not hold accurate theoretical values, however, it is not an indicator of overall physical fitness. Differential score is an ancillary indicator referring to the harmonious (or vice versa) development of an individual in each component of physical fitness.

As says Měkota (in Měkota, Kovář, Chytráčková, et al. 2002), expressing test results with just one parameter is not very appropriate for practice. Therefore, an individual test profile (Table 22) is

preferred, which compares the individual results of each test with the population standard, thus allowing to identify the

strengths and weaknesses of each individual and, if appropriate, to suggest an appropriate intervention.

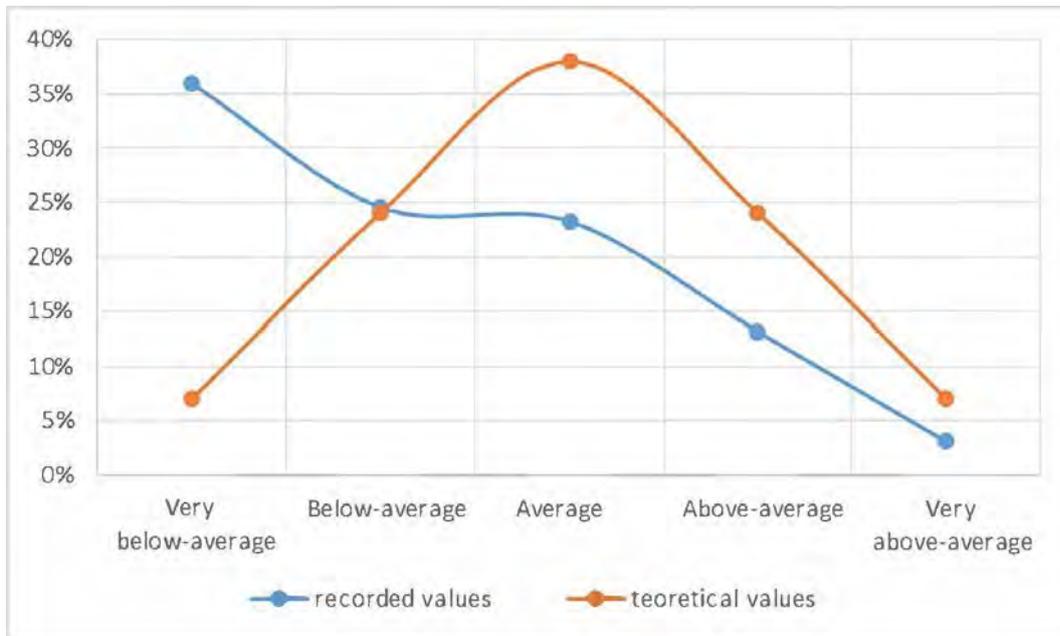


Figure 5 Evaluation of the Test Battery UNIFITTEST (6-60) – Primary school (N=228 females)

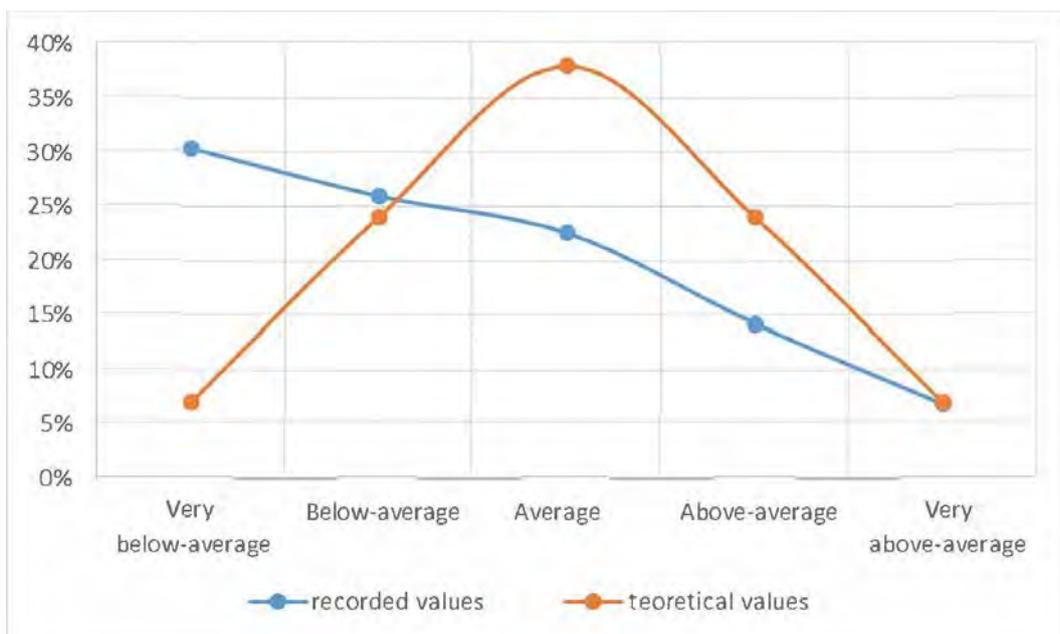


Figure 6 Evaluation of the Test Battery UNIFITTEST (6-60) – Primary school (N=204 males)

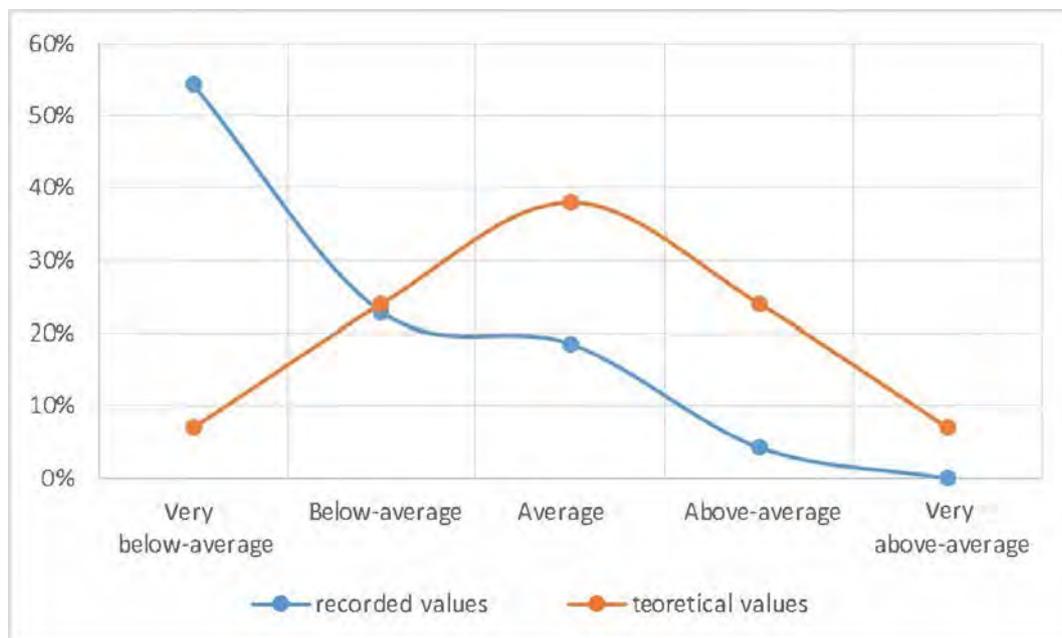


Figure 7 Evaluation of the Test Battery UNIFITTEST (6-60) – 1st class, Secondary school (N=71 females)

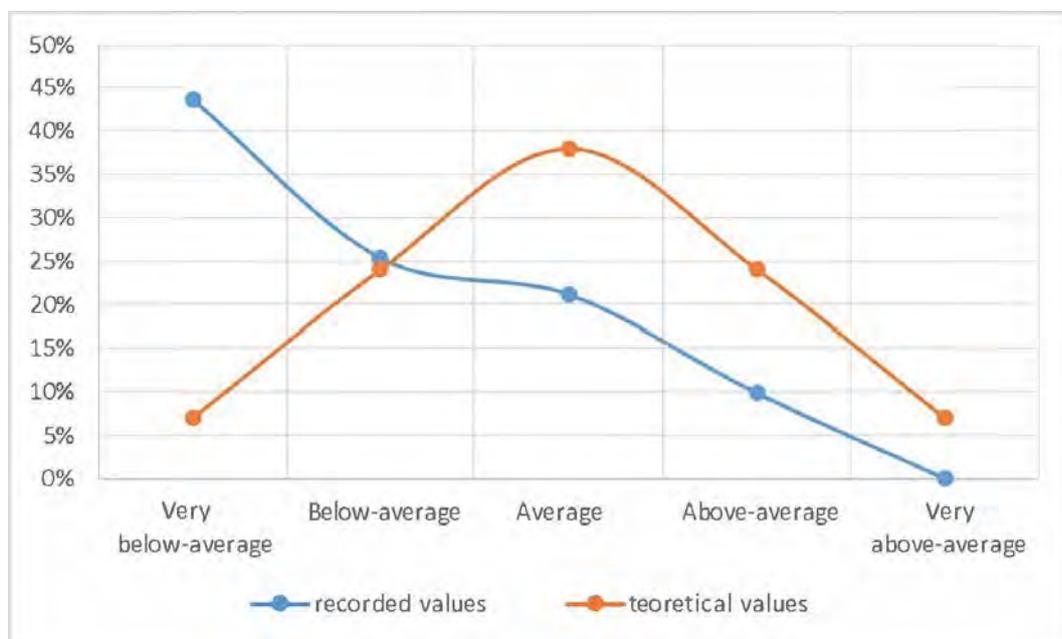


Figure 8 Evaluation of the Test Battery UNIFITTEST (6-60) – 1st class, Secondary school (N=71 males)

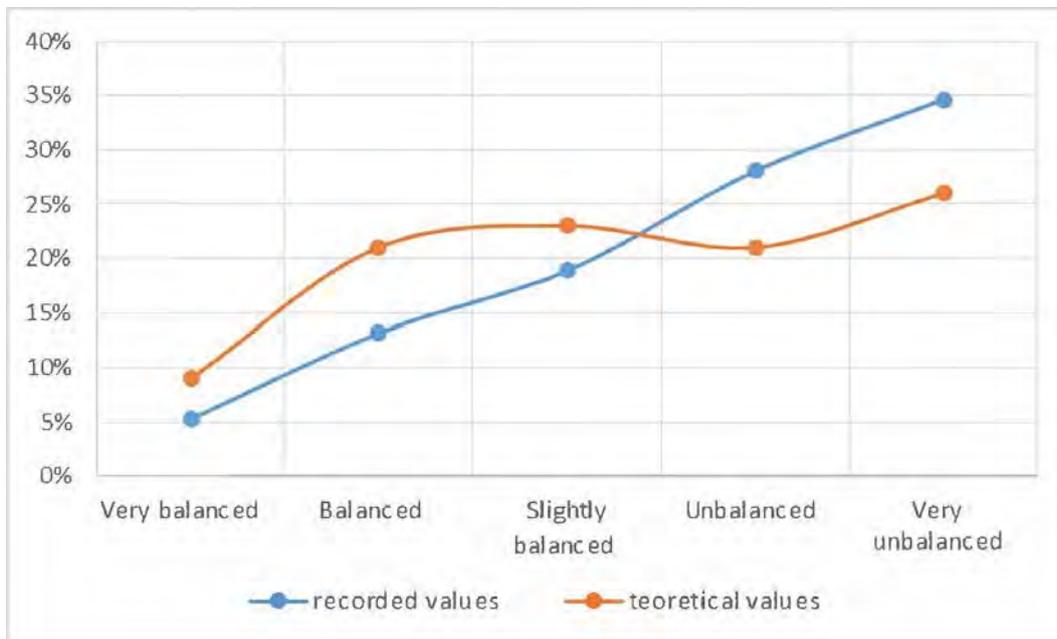


Figure 9 Difference score of test battery UNIFITTEST (6-60) – 4th class, Primary school (N=228 females)

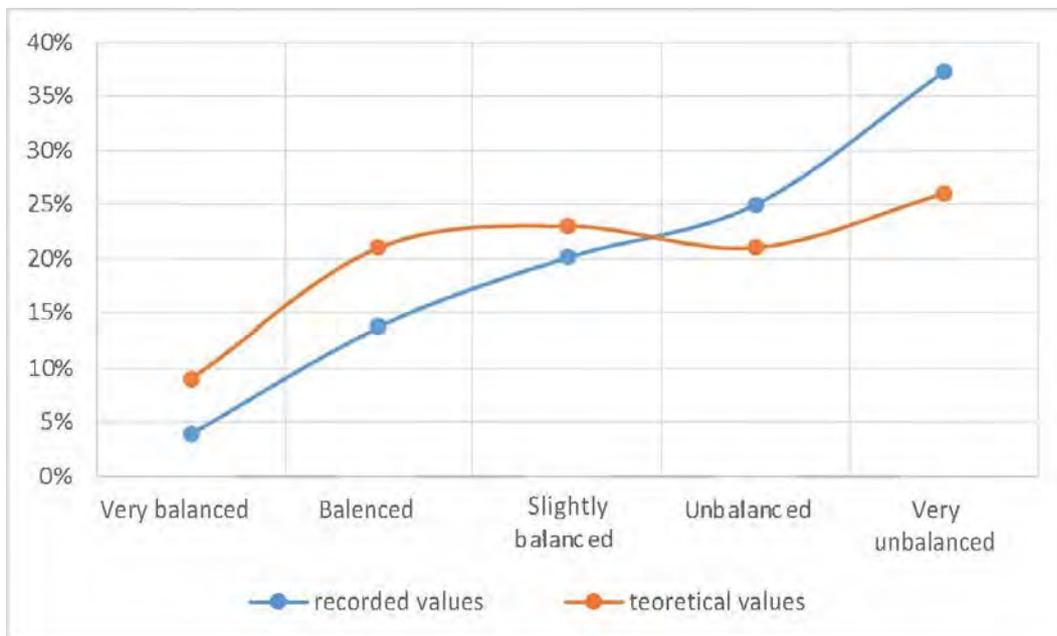


Figure 10 Difference score of test battery UNIFITTEST (6-60) – 4th class, Primary school (N=204 males)

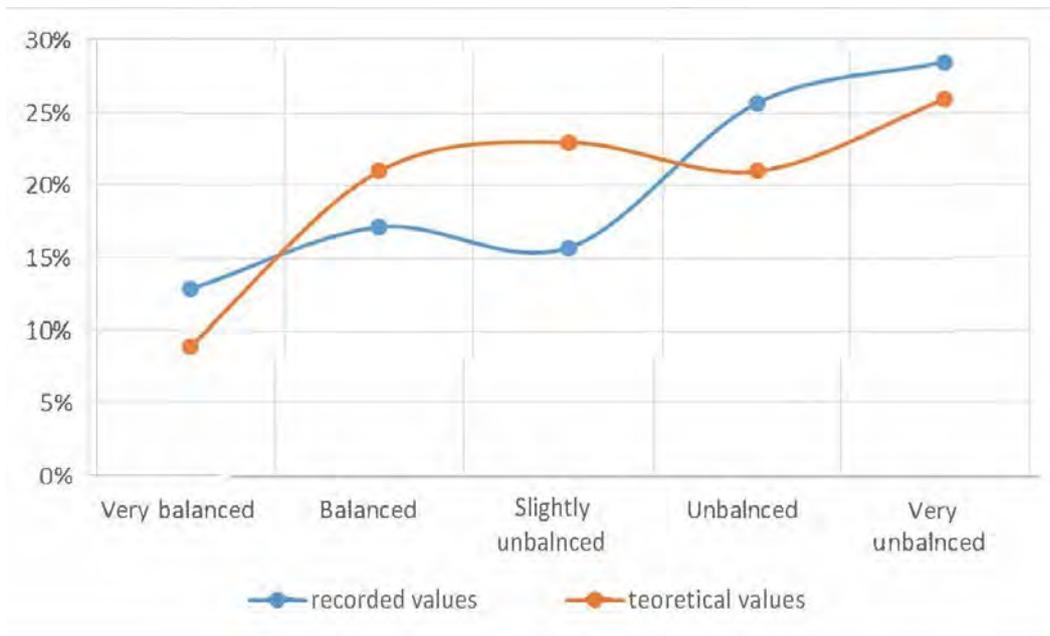


Figure 11 Difference score of test battery UNIFITTEST (6-60) – 1st class, Secondary school (N=70 females)

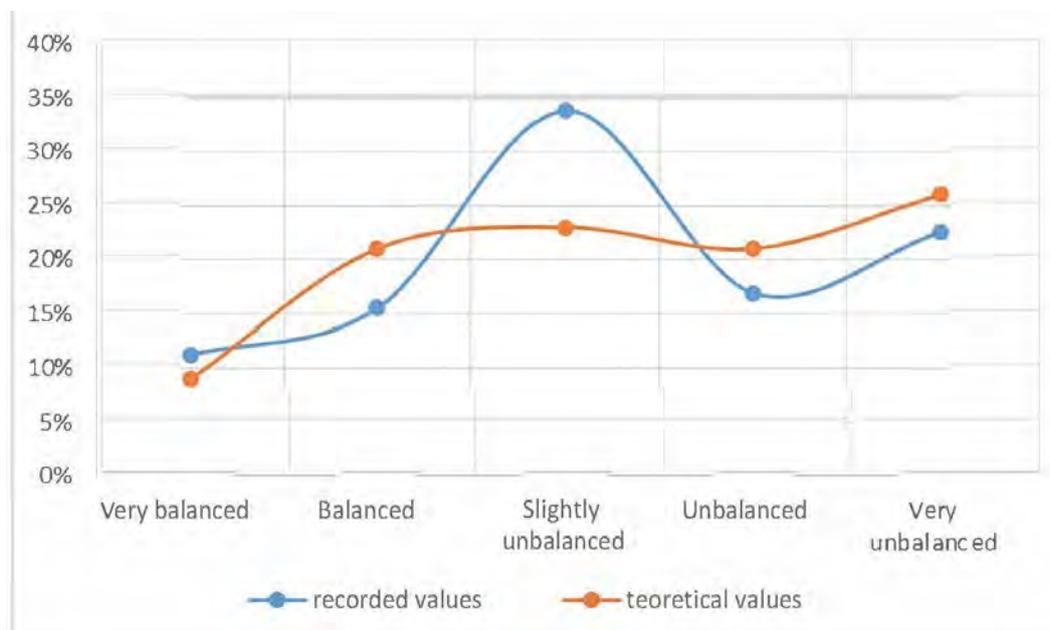


Figure 12 Difference score of test battery UNIFITTEST (6-60) – 1st class, Secondary school (N=71 males)

Indeed, only such a diagnosis is a basic prerequisite for finding possible remedies, or just for the selection of talents for top sport.

As it is stated in the Report on the Health of the Population of the Czech Republic, both in the Czech Republic, as well as in the whole world, there is a decline in physical activity, which entails many risks (MZ, 2015). These include, in particular, health risks associated with lower physical activity in productive age and advanced countries and poor dietary habits, especially cardiovascular, colon and breast cancer, and diabetes type 2. On the contrary, sufficient physical activity helps prevent these consequences while helping to maintain optimal body weight and good mental state.

The Government of the Czech Republic, in connection with health risks and general health literacy, has developed a national program dealing with this issue. Health 2020 is a strategy that aims to stabilize and establish a long-term concept of a health and prevention system. The strategy is divided into thirteen Action Plans, with "Promotion of Motion Activity" at the first place (MZ, 2015). This Action Plan discusses the theoretical background of physical activity in different age categories and in different areas of human life and at the same time presents some measures or proposals that should be supported under this plan.

On the one hand, it is very encouraging that the government of the Czech Republic is also involved in the support of physical activities, but it is still just proposals and not concrete actions. And unfortunately, there is no talk of systematic and nationwide testing.

On a nationwide scale, nation-wide anthropological research has worked in a ten-year period (Vignerová, Riedlová, Bláha, 2006). Unfortunately, the last measurement took place in 2001. In view of the issues addressed by this work, it would be advisable to follow up these surveys and add some physical fitness measurements.

It is true that increasing health literacy can have a positive impact on the behaviour of the population, but it is necessary to involve not only educational and physical education institutions. All families need to be involved because children, primarily from childhood and from their families, take away basic habits and, therefore, a relationship to physical activity and sport. If parents do not systematically engage in some physical activity if their children do not do it, and if the stereotype is not removed, "it is only a gymnasium ...", it is not possible to expect a long-term and sustainable process of improvement of the current state.

CONCLUSION

Of the total results of the UNIFITEST (6-60) test battery, there is a decrease in the physical fitness of the probands and at the same time an increase in the number of subcutaneous fat compared to the population standard (Měkota, Kovář, Chytráčková, et al. 2002).

At the same time, there was a decrease in the physical fitness of probands compared to previous research in 2010 (Kubricht, 2010).

According to the partial results of the physical fitness tests and the results of the one-volume T-test with a significance level

of 0.05, it can be concluded that the other pupils of the 4th year of elementary schools and of the 1st year of the secondary schools from the Pardubice Region will also have a worse results in physical fitness tests and quantity of subcutaneous fat. Young people are increasingly pushing for too early top performance, and you have to win the results in the sense of winning, in addition to a very narrow specialization in one sport. At the same time, surveys clearly show that for children themselves, victory is only a fifth in importance, far beyond the joy of being able to operate the sports industry. At present, it seems that when young people are doing some sports in the compartments, they are often poisoned by tall eyes.

For further generalization of the results of our presented study, further and especially nationwide research would be needed, which would be very appropriate, given that the results of the latest nationwide surveys were used in the design of UNIFITTEST standards, (Měkota, Kovář, Chytráčková, et al. 2002) which, according to the measurement results, may not fully reflect the state of our population.

We should try to do everything from a complete set of ball games, through running, swimming, and winter sports to gymnastics. Today, unfortunately, there is a minimum of children able to do a normal bite, not to mention some more demanding exercises, which even the teachers themselves do not even want to do with the safety of schoolchildren themselves. The legislation is such that accidents are responsible for the teachers and risking injury to children with respect to their mostly weaker physical fitness, no one wants.

Also the current two hours of gymnastics a week in schools are not enough. It would be appropriate to raise it to at least three, but at the same time also to improve their content. This is extremely difficult for current legislation, the general position of teachers in society, and the overall dislike of most children for sports. Still, there are enough enthusiasts willing and able to take care of young people for their health, but if there is no response from the other side, even the greatest sacrifice does not do anything.

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YOGA ASANAS: INDICATIONS AND CONTRAINDICATIONS FOR USING IN PREVENTION AND TREATMENT OF POSTURAL DEFORMITIES

Tijana PURENOVIĆ – IVANOVIĆ

Abstract:

Modern civilisation, thanks to technology development, provides very comfortable and easy living – life without huge physical efforts, i.e. sedentary life. The consequences are numerous, and the biggest problem is our health that suffers the most. One of many health problems, which can be seen by naked eye, is poor or irregular body posture. Irregular body posture can transfer to more complex stage – fixed postural deformity, but only if one doesn't react on time. Today we can speak about high incidence of postural abnormalities. Based on the concept that postural abnormalities cause pain and injury, postural education and correction have been used as treatment approaches for alleviating pain. Poor posture can be treated in many ways, and one of it is Yoga. That's why the aim of this research is determinate - which Yoga exercises can be used for prevention and treatment of the postural abnormalities.

Keywords:

Sedentary life style, irregular body posture, pain, yoga education

INTRODUCTION

The health-related benefits of physical activity have been researched and proven on a number of occasions over the past thirty years. Despite this large quantity of evidence, much of society remains sedentary. Research needs to focus on children and adolescents because many lifestyle habits are established in the younger years (Rehor, Kornatovska, 2013). Postural education and assessments are a part of physical therapy education and clinical practice. The importance of normal upright posture has been proposed since the early 1900s when it was described as a state of balance requiring minimal

muscular effort to maintain. Attempts were made to define ideal posture by alignment of significant landmarks such as the acromial process or the malleolus or by general body positions such as an upright position with non-exaggerated back curves, but there was little standardization of methods of measuring posture.

Nowadays proper posture is still believed to be a state of musculoskeletal balance that involves a minimal amount of stress or strain to the body. A standard for normal alignment as described by Kendall and McCreary (according to Griegel-Morris et al., 1992) is frequently used by physical therapists. The points of reference consisting of the lobe of the ear, the

seventh cervical vertebra, the acromial process, the greater trochanter, just anterior to midline of the knee, and slightly anterior to the lateral malleolus form a theoretical line around which the body is balanced in perfect skeletal alignment, yielding equal weight distribution and maximum joint stability.

There are varieties of postural abnormalities of different parts of the body. The most common one are postural abnormalities of spinal cord (lordosis bad body posture and lordosis, kyphotic bad body posture and kyphosis, scoliotic bad body posture and scoliosis, dorsum planum), chest (pectus carinatum – chicken breast, pectus excavatum – shoemaker breast), knee (genu varum – “X” legs, genu valgum – “O” legs) and foot (pes planus - flatfoot). Mostly, it’s about asymmetry in sagittal or frontal plane, or there’s an absence of alignment.

Yoga as a useful system for reduce of the muscular imbalance

The word of yoga originates from Sanskrit and means „to join, to unite“(Maheshwarananda, 2000). Yoga is an ancient discipline of body, mind, and spirit that has been Westernized and practiced for its health benefits (Raub, 2002). Hatha Yoga is a comprehensive, holistic mind-body practice incorporating both cognitive (meditation, concentration) and somatic (physical postures - Asanas, breathing exercises - Pranayamas) components (Khalsa & Cope, 2006). Hatha Yoga, through holding static physical postures (Asanas), uses stretching and improves muscular strength and flexibility (Tran et al., 2001; according to Raub (2002) so that it would likely be beneficial

for some musculoskeletal problems (Garfinkel and Schumacher, 2000; according to Raub, 2002; Luskin et al., 2000: according to Raub, 2002).

Yoga asanas are certain special pattern of postures that stabilize the mind and body. Their aim is to establish proper rhythm in the neuromuscular tonic impulses and to improve the general tone of the muscles. Asanas, as a preventive medicine can be used for avoiding the causation of postural deformities like cervical spondylos, lordosis, etc. Also, Asanas can be used for release of physical stress resulted from day-today negative emotions of behavioural pattern. This will help to avoid psychosomatic or psychological disorders like hypertension, gastric acidity, depression neurosis etc. The regular correct practice of asana also helps to prevent constipation, arthritis, asthma, diabetes, obesity etc. (Shankar, 2005).

Hatha Yoga is a useful system for patients with muscular imbalance. The yoga exercises systematically train the muscles of the whole body, alternating stretches with holding postures, relaxation and movements. This program can improve muscular balance and joint health – two parts of locomotor system very important for good body posture. Poor posture and bad habits in movement place undue of pressure on the spine. The resulting muscular tension is a frequent cause of back pain. Yoga Asanas generally involves some part of the spine in the exercise. Stretching and strengthening the muscles should be combined, because strong and flexible muscles form an important protection for the spine and joints. That’s why regular yoga practice

reduces the symptoms of spine problems after just a few weeks. Practice of the Yoga Asanas provides the necessary range of movement to maintain proper health of muscles, ligaments, cartilage and joint capsules, which is essential for their function (Maheshwarananda, 2000). Yoga exercises are in fact psychosomatic exercises, meaning that they influence the body, mind, breath and consciousness, and they are good because all exercises are mostly isometric muscle contractions, and this type of contraction is good cause the results can be seen very fast – it's very effective type of exercise. Another good thing about Yoga asanas is the breathing – deep and slowly, and in the right moment.

PROBLEM AND AIM

The problem of this research is indications and contraindications for using yoga asanas as method for prevention and treatment of postural abnormalities. The subject of this research is the use of Yoga as method of corrective treatment.

The research was carried out with the aim of determining which yoga asanas can be beneficial, and which can be harmful to persons with postural abnormalities.

METHODS

The basic method was “Content analysis of literature” provided on the issue of as method of corrective treatment. Content analysis is a widely used qualitative research technique. Rather than being a single method, current applications of content analysis show three distinct approaches: conventional, directed, or summative. All three approaches were

used to interpret meaning from the content of scientific studies adhere to the problem indications and contraindications for using of the yoga asanas in prevention and treatment of postural abnormalities.

RESEARCH REVIEW

The research review will cover literature and scientific researches that have been investigating problems and area in which we're interested.

Savic et al. (1990) were investigating the Hatha Yoga's effects on the posture of 15 ten year-old children and also its effects on the psychophysical condition of 15 grown-ups. As symptoms, during the first examination, 12 of the 15 children had head protrusion, 14 had shortened back extensors, and all 15 had bent shoulders, relaxation of the frontal abdominal wall and shortened flexors of both the calf and thigh. The condition of all the children was remarkably better after six months of practice, some of the symptoms having completely disappeared (head protrusion, asymmetry of the shoulders, mammilla and hips, shortening of the pectoralis and back extensors), 9 children still had slight to medium relaxation of the frontal abdominal wall, 8 children still had bent shoulders, and 1 child still had shortened calf and thigh extensors. The adults were in a weak or very weak psychophysical condition, they tired easily, they complained of sleep disturbances, fluctuation of emotional state and irritability. After 3 months of practice, the vital capacity of 8 of the adults tested (53.3%) had increased by 435 ml. The time duration of apnoea had lengthened for all of the practicing adults, but with a truly

large variation among them (a median of 14%). The deep waist-bend length of all the practicing adults had lengthened by an average of 9.5 cm and the average length increase for the 3-minute running test was 42 m. All those who practiced, had experienced an alleviation of psychic.

Greendale et al. (2002) in their pilot study were evaluating Yoga effects on women with hyper kyphosis. The sample of examinees consisted of 21 women with physician-diagnosed hyper kyphosis, 75 years of age. Hyper kyphosis – a kyphosis angle 40°—the 95th percentile value for young adults, may be associated with physical and emotional limitations and may have multiple precipitants. Authors think that Yoga could be an optimal intervention for hyper kyphosis in that it may improve physical and emotional functioning as well as combat some of the underlying muscular and biomechanical causes. They conducted a single-arm, non-masked intervention trial to assess the effects on anthropometric and physical function of yoga among women with hyper kyphosis. This pilot study suggests that the use of yoga among women with hyper kyphosis is safe and acceptable and may produce better posture. The mechanisms by which postural improvements occurred among research participants may have included increased strength and flexibility (attested to by improvements in physical function measures) and heightened attention to alignment (as reflected in women's diary entries).

Raub (2002) in his literature review was investigating psychophysiological effects of Hatha Yoga on musculoskeletal and cardiopulmonary function. This research covered literature published from

1985 to 2002, i.e. approximately 120 published records. Author has notice that over the last 10 years, a growing number of research studies have shown that the practice of Hatha Yoga can improve strength and flexibility, and may help control such physiological variables as blood pressure, respiration and heart rate, and metabolic rate to improve overall exercise capacity. This review is a summary of medically substantiated information about the health benefits of yoga for healthy people and for people compromised by musculoskeletal and cardiopulmonary disease.

Khalsa, Cope (2006), based on previous research that suggest that yoga and meditation practices are effective in stress management, alleviating anxiety and musculoskeletal problems and improving mood and cognitive and physical performance, have decided to investigate effects of yoga and meditation techniques on musicians' stress, performance anxiety and performance-related musculoskeletal conditions (performance - related musculoskeletal disorders are highly prevalent in musicians, with surveys reporting up to 87%). Therefore, musicians enrolled in a prestigious 2-month summer fellowship program were invited to participate in a regular yoga and meditation program at a yoga centre during the course of the program. The 10 participants in the yoga program, 21 to 30 years of age, completed baseline and end-program questionnaires evaluating performance-related musculoskeletal conditions, performance anxiety, and mood and flow experience. Fellows not participating in the yoga program were recruited to serve as controls and completed the same

assessments (N=8). The yoga participants showed some improvements relative to control subjects on most measures, with the relative improvement in performance anxiety being the greatest. The results from this preliminary study suggest that yoga and meditation may be beneficial as a routine practice to reduce performance anxiety in musicians. Results do indicate that the approaches used in the yoga intervention were well-accepted by professional musicians and that they are likely to have benefit for both improving performance characteristics and alleviating problems faced by professional musicians.

RESULTS AND DISCUSSION

The help of the body is fundamental importance in life. For the preservation and restoration of physical health and health in general, yoga offers physical exercises, i.e. Asanas. "Asana" is the Sanskrit word for a physical posture. Expressed in general terms Asana denotes a specific position which can be held in a relaxed and comfortable manner for a long period of time. Many Asanas were derived from the natural movements and positions of animals and carry the names of animals (e.g. "cat", "deer", "tiger", "cobra", etc.). Asanas have a far-reaching effect upon body and mind. The animals instinctively used these movements and positions because of their natural benefits. These effects are attained through the practice of the Asanas. Asanas are beneficial for the muscles, joints, cardiovascular system, nervous system and lymphatic system, as well as the mind, psyche and Chakras (energy centres). Asanas are psychosomatic exercises, which strengthen and balance the entire nervous

system and harmonise and stabilise the practitioner's state of mind (Maheshwarananda, 2000).

Asanas are practising slowly to enable mental focus and conscious understanding of the movement. Physical and mental relaxation represents important prerequisite for the correct performance of all Yoga exercises and it's only in this way that the effects of the Asanas completely unfold. The breath plays an important role in the Asanas. The good coordination of breath and movement is very important for effective and harmonious practice. Use of the breath greatly enhances muscle relaxation by concentrating on tense areas of the body and consciously relaxing those parts with each exhalation. Correct breathing is fundamental for the body's optimum metabolic function. Slower and deeper breaths improve circulation, nerve function and one's whole physical condition (Maheshwarananda, 2000).

Health benefits from the regular practice of Asanas are many: flexibility of the spine is increased, the joints become more mobile, the muscles are relaxed, toned and receive a plentiful supply of blood, organ and glandular activity is stimulated and regulated, the lymphatic system and metabolism are stimulated, the immune system is strengthened, circulation and blood pressure are normalised and stabilized, the nervous system is calmed and strengthened, the skin becomes clear and fresh (Maheshwarananda, 2000). However, this only refers to healthy persons. When we are speaking about persons with postural abnormalities, Yoga Asanas can be beneficial, or totally opposite – harmful to them.

By analysing Yoga Asanas, based on knowledge of corrective gymnastic, we came to the next research results. The recommendation for persons who have problem with lordosis bad body posture (LLD) is to bent their knees when they are in dorsal decubitus, for example, when they are performing **Anandasana** – Relaxation, **Rolling sideways with legs bent** is Asana which is benefit for persons with LLD. One with scoliotic bad body posture should avoid **Shoulder Raising** in standing position, or at least should perform this exercise carefully, i.e. persons with scoliosis dexter should perform this exercise only by raising the left shoulder, and opposite. **Shoulder Circling** in standing and sitting position, is very good for the treatment and prevention of kyphotic bad body posture (KLD), if circling is backwards (circling movements forward are contraindicated for persons with KLD). **PAVANA MUKTASANA** – **Knee to Head** in sitting position with legs straight, is good for treatment and prevention of LLD, contraindicated for KLD, and one with SLD of lumbar part of spine should take good care (depending of it is scoliosis dexter or sinister). **Half Butterfly** in sitting position with legs straight, is good for treatment of “X” legs and contraindicated for “O” legs, because this position provokes the extension of already extended lig. collaterale tibiale. **MARJARI - The Cat** in starting position VAJRASANA, is contraindicated for postural disorders of spine in sagittal plane (i.e. LLD and KLD), but it is very good for persons with dorsum planum. **KHATU PRANAM - Greetings to Khatu** and **SURYAYA NAMAHA** – **Salute to the Sun** is also good for treatment of dorsum

planum, but they aren't recommendable to persons with LLD and SLD in lumbar part of the spinal cord, or at least they should perform it with caution. All meditation postures are contraindicated for persons with “O” legs, but they are good in treatment of “X” legs. Asymmetric exercises that include upper limbs, e.g. **Stretching the body** in dorsal decubitus are good for SLD, but only if are used correctly. **Raising the head** in dorsal decubitus is exercise that should be avoided by persons with KLD, because this Asana increases the angle of thoracic part of spinal cord. **Extension of the spine** in starting position VAJRASANA, is good for KLD and bad for LLD, because this exercise increases the angle of lumbar part of spinal cord. **PAVANA MUKTASANA** – **Knee to body** in dorsal decubitus and standing position, is good for treatment of SLD in lumbar part of the spinal cord, but if it is performed correctly, i.e. it depends is it scoliosis dexter or sinister. **Flexion of the spine** in the position of VAJRASANA, is contraindicated for KLD. **Grinding** and **The Boat** in sitting position with legs straight, are also contraindicated for KLD, and on the other side they are good for LLD, because they activate abdominal muscles which strength is very important for good body posture. **Expansion of the chest** in standing position, is not good for pectus carinatum (this Asana extends m. pectoralis major et minor), but it's good for KLD (it strengthens m. rhomboideus). **Side bending of the upper body** in standing and sitting position, and **Twisting exercise** in sitting position, are good for SLD in thoracic part of the spine, but only if they are performed correctly, i.e. one with scoliosis dexter should perform bendings at

right side and by that will stretch the left side of upper body, and opposite. **Butterfly** in sitting position with legs straight is good for spinal posture and “X” legs, but bad for “O” legs. **Foot and Toe exercises** in sitting position with legs straight, and **Walking on toes and heels**, are asanas that are good for prevention and treatment of flatfoot, i.e. pes planus, because this movement strengthens region planta pedis. **Horizontal arm movement** in standing position, is exercise that strengthens chest muscles and that’s why is good for treatment of pectus carinatum. **PAVANA MUKTASANA – Both knees to head** in dorsal decubitus, is good for LLD, and contraindicated for KLD. **Relaxation** in ventral decubitus (**lying on the abdomen**) is not recommendable to persons with LLD and KLD, because the earth gravitation is moving lumbal part of the spine and shoulders down and stretches m. rhomboideus – the muscle responsible for good posture of thoracic part of the spine. **Stretching** in ventral decubitus (**lying on the abdomen**) with hands above head is good for spine and muscles that support it. The asana in which we are **bringing the arms behind the back** in the ventral decubitus, aren’t good for KLD and LLD. **Raising the head with legs bent** and **Raising the head and legs** in ventral decubitus is good exercise for KLD, and bad for LLD. **Relaxation in Tiger pose** is good to use in treatment of SLD, but it is necessary to use it correctly – persons with scoliosis dexter, for example, must only stretch the right side of the body, and opposite - persons with scoliosis sinister must only stretch the left side of their body. **Rowing** in sitting position with legs straight is good for postural disorders of

spinal cord in sagittal plane (i.e. LLD and KLD). **Forward bend** of upper body **while sitting** with legs straight, is good exercise for LLD, and bad for KLD. Variation of this exercise with **one leg bent** should avoid persons with SLD. **MANDUKI ASANA – The Frog** in standing position, is example of exercise that could only be beneficial to spinal posture and it is also good for treatment of “X” legs, but bad for “O” legs.

MERU AKARANASANA – Stretching the spine and inner thigh and MERU VAKRASANA – Simple twist, in sitting position with legs straight, and then with turning the body to one side, left or right, are asanas that could be good for treatment of SLD in the lumbal part of the spine, but only if they are done correctly, i.e. persons with scoliosis dexter must only stretch the right side of the body, and opposite - persons with scoliosis sinister must only stretch the left side of their body. **BHUNAMANASANA – Greeting the Earth**, is exercise which should be avoided by persons with SLD, especially with SLD in lumbal part of the spine. **ASHVA SANCHALANASANA – Horse riding exercise** in sitting position with legs straight, is good for prevention and treatment of LLD, because it strengthens abdominal and back muscles. **MERU PRISHTHASANA – Rotating the upper body** in standing position, is exercise which should be avoided by persons with SLD, especially with SLD in lumbal part of the spine (the rotation in horizontal plane is causing the torsion of the spine and that is the main problem with scoliosis). **CHATUSHPADASANA – Four legged exercise**, **KATICHAKRASANA – The Well** and **DVIKONASANA – Double**

triangle, all three in standing position, and **SUMERU ASANA – Mount Everest pose** in VAJRASANA position, are good exercises for whole body, especially for spinal cord, and it can be used either by persons with good or bad body posture. **SETU ASANA – The Bridge**, is asana that should be carefully used by persons with weak abdominal muscles, because it could lead to LLD.

VYAGHRASANA – The Tiger in starting position of VAJRASANA, is exercise that should be avoided by persons with LLD and SLD in lumbal spine. **SKANDHARASANA – Shoulder pose** in dorsal decubitus, should be avoided by persons with LLD and KLD, and **VIPARITAKARANI MUDRA – Half shoulder stand (“Renewal of Energy”)** in dorsal decubitus, should be avoided by persons with KLD. **USHTRASANA – The Camel** in position of VAJRASANA, should be avoided by persons with LLD, and also by persons with SLD, cause of asymmetry in frontal plane. **TRIKONASANA – The Triangle**, with variations in standing position with legs apart, and **EKAPADA UTTHANASANA – One-Legged pose** in standing position, have an accent to the asymmetry in frontal plane, which is not good for persons with SLD. **HANSASANA – the Swan**, it’s also not good for SLD, and for LLD.

TRIYAK BHUJANGASANA – Twisting Cobra in ventral decubitus, is asana that is very good for treatment of KLD in thoracic part of the spine, but bad for LLD and SLD. **SANTULANASANA – Balancing pose** in sitting position with legs straight, is good for LLD because it’s strengthens abdominal muscles.

BHUJANGASANA – The Cobra in ventral decubitus is recommendable for treatment of KLD, but contraindicated for LLD. **SARVANGASANA – Shoulder stand** in dorsal decubitus, and **HALASANA – The Plough** in dorsal decubitus, are contraindicated for KLD. **DHANURASANA – the Bow** in ventral decubitus is contraindicated for persons with LLD. **ARDHA MATSYENDRASANA – Seated twist** in sitting position, is contraindicated for some types of scoliosis, i.e. persons with scoliosis dexter must only stretch the right side of the body, and opposite - persons with scoliosis sinister must only stretch the left side of their body.

YOGA MUDRA – Forward bend sitting on heels, is not good for persons with KLD, because in this position angulus inferior scapula are distant, and m. rhomboideus is stretched. **NOKA SANCHALANASANA – Rowing** in sitting position with legs straight, is good for treatment of LLD. **CHAKRASANA – The Wheel** in dorsal decubitus is contraindicated for LLD, but good for KLD.

EKAPADA YOGA MUDRA – One legged yoga mudra in sitting position with legs straight, and **ARDHA UTTHANA KATI ASANA – Twist in Knee stand**, aren’t recommendable to persons with SLD in lumbal part of the spine. Body position during the time of Pranayama is not recommended for the persons with varroosis legs, but they are very good for the correction of “valgosis” legs.

CONCLUSIONS

In the end we can summarize this research by saying and concluding which

asanas are indicated, i.e. contraindicated for postural abnormalities. First of all, for LLD beneficial asanas are: Rolling sideways with legs bent, PAVANA MUKTASANA – Knee to Head, Both knees to head, Grinding, The Boat, Half Butterfly, Butterfly, Walking on toes and heels, Stretching the body, Rowing, Forward bend while sitting, MANDUKI ASANA – The Frog, ASHVA SANCHALANASANA – Horse riding exercise, CHATUSHPADASANA – Four legged exercise, KATICHAKRASANA – The Well, DVIKONASANA – Double triangle, SUMERU ASANA – Mount Everest pose, SANTULANASANA – Balancing pose, YOGA MUDRA – Forward bend sitting on heels, NOKA SANCHALANASANA – Rowing and EKAPADA YOGA MUDRA – One legged yoga mudra. For the prevention and treatment of **KLD** we can recommend next asanas: Shoulder Circling backward, Half Butterfly, KHATU PRANAM - Greetings to Khatu, SURYAYA NAMAHA – Salute to the Sun, Stretching the body, Extension of the spine, Expansion of the chest, Butterfly, Walking on toes and heels, Raising the head with legs bent, Raising the head and legs, Rowing, MANDUKI ASANA – The Frog, CHATUSHPADASANA – Four legged exercise, KATICHAKRASANA – The Well, DVIKONASANA – Double triangle, SUMERU ASANA – Mount Everest pose, SETU ASANA – The Bridge, TRIYAK BHUJANGASANA – Twisting Cobra, BHUJANGASANA – The Cobra and CHAKRASANA – The Wheel. Asanas that are indicated for SLD, are at the same time contraindicated for this postural abnormality, depending on the type of

scoliosis: Shoulder Raising, PAVANA MUKTASANA – Knee to Head, Knee to body, KHATU PRANAM - Greetings to Khatu, SURYAYA NAMAHA – Salute to the Sun, Stretching the body, Side bending of the upper body, Twisting exercise, Butterfly, Relaxation in Tiger pose, MANDUKI ASANA – The Frog, MERU AKARANASANA – Stretching the spine and inner thigh, MERU VAKRASANA – Simple twist, CHATUSHPADASANA – Four legged exercise, KATICHAKRASANA – The Well, DVIKONASANA – Double triangle, SUMERU ASANA – Mount Everest pose, SETU ASANA – The Bridge and ARDHA MATSYENDRASANA – Seated twist.

Generally, every asana that strengthens abdominal musculature is good for prevention and treatment of lordosis bad body posture; every asana that strengthens muscles of thoracic part of the spinal cord is good for prevention and treatment of kyphotic bad body posture. One can also notice that every asana that is good for prevention and treatment of kyphotic bad body posture is contraindicated for lordosis bad body posture. It is noticeable, that persons with postural abnormality of spinal cord in frontal plane, i.e. scoliotic bad body posture, must practice carefully those asanas with asymmetry in frontal plane.

Persons with **dorsum planum** must practice asanas that are contraindicated for LLD and KLD, and the best examples are MARJARI - The Cat, KHATU PRANAM - Greetings to Khatu, SURYAYA NAMAHA – Salute to the Sun, Relaxation lying on the abdomen, bringing the arms behind the back and SKANDHARASANA- Shoulder pose. For

treatment of **pectus carrinatum** Yoga offers Horizontal arm movement; for treatment of „X“ legs it's good to practice Half Butterfly, Butterfly, MANDUKI ASANA – The Frog and all Pranayama. Yoga asanas are good for prevention and treatment of **flatfoot**, especially Foot and Toe exercises and Walking on toes and heels.

On the other side, some asanas are contraindicated for some postural abnormalities. For example, persons with **LLD** should avoid: Anandasana with straight legs, MARJARI - The Cat, some positions of KHATU PRANAM - Greetings to Khatu and SURYAYA NAMAHA – Salute to the Sun, Extension of the spine, Relaxation lying on the abdomen, bringing the arms behind the back, Raising the head with legs bent and Raising the head and legs, SETU ASANA – The Bridge, VYAGHRASANA – The Tiger, SKANDHARASANA- Shoulder pose, USHTRASANA – The Camel, HANSASANA – the Swan, TRIYAK BHUJANGASANA – Twisting Cobra, BHUJANGASANA – The Cobra, DHANURASANA – The Bow and CHAKRASANA – The Wheel. Persons with **KLD** must avoid next asanas: PAVANA MUKTASANA – Knee to Head, Both knees to head, MARJARI - The Cat, Raising the head, Flexion of the spine, Grinding, The Boat, Relaxation lying on the abdomen, bringing the arms behind the back, Forward bend while sitting, SKANDHARASANA- Shoulder pose, VIPARITAKARANI MUDRA – Half shoulder stand, SARVANGASANA – Shoulder stand, HALASANA – The Plough and YOGA MUDRA – Forward bend sitting on heels.

Thanks to Yoga the body becomes flexible, the muscles strengthened and through this the joints become stronger. Those are three most important things for good body posture, and that's why this type of exercise can be used in prevention and treatment of postural abnormalities. However, the health effects on body, mind, psyche, emotions are side effects of yoga and help us towards the spiritual goals of yoga - union first of physical and mental, then union at more subtle level. Yoga, when correctly practiced, has a tremendous, natural corrective influence on us at all levels.

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HALLIWICK SWIMMING METHOD IN THE WELLNESS REFLEXIONS AS SWIMMING FOR EVERYONE

Rajko VUTE

Abstract:

Water is one of the most satisfying and rewarding environment where everyone can find their own way and level of participation. To know how to swim is a life necessity and therefore a must, regardless of the physical or mental abilities, sex differences, ages, etc. For various types of disabilities swimming is extremely beneficial, particularly for those capable of achieving movement in water only. The Halliwick swimming method uses the water as a playground as well. Learning through the games in a pleasurable way and understanding movement, balance, stability, breathing control is part of Halliwick philosophy too. The Ten Point Program is the basis of the Halliwick swimming concept. It follows a logical pattern and therefore all points must be mastered to produce a swimmer who is truly competent in the water. In the Halliwick philosophy as in wellness is main to feel free, independent and enjoyable; here in the movement in the water as a prime aim, not a perfect swimming style. The Halliwick swimming concept is a carefully designed program for teaching swimming most effectively. It provides instruction with clearly identified and progressive targets to aim for at all ability levels. Within the program structure instructors are able and encouraged to develop their own personal style of teaching.

Keywords:

swimming for persons with disability, healthy athletes, wellness, instructor, teaching methods, wellness

INTRODUCTION

Water is one of the most satisfying and rewarding environment where everyone can find their own way and level of participation. To know how to swim is a life necessity and therefore a must, regardless of the physical or mental abilities, sex differences, ages, etc. For various types of disabilities swimming is extremely beneficial, particularly for those capable of achieving movement in water only. A number of authors focus their work

on swimming for the disable persons as for example J. Mc Millan, J. Martin, L. Guttman, W. Anderson, E. Jowsey, J. B. Nielsen, to name just some of them (Anadolu, Konukman, Tohum, et al., 2010). It is often said that swimming is the ideal type of exercise, the best way of exercising the whole body in a medium where the risk of injury is minimal. It combines the pleasure of a sport with the benefits of fitness and wellness. But the fact remains that many people do not associate swimming with pleasure, and

even those who swim out of choice seem to lack a sense of fun and well. They struggle through the water, their heads pulled back and their faces set in a grimace their sole purpose simply to complete a fixed number of laps. They act as if the water were an assault course which must be battled through from a sense of duty, rather than for pleasure or profit. Regular swimmers persuade themselves that at least it is doing them good. If our mind is not engaged in what we are doing, the benefits of exercise are limited or non-existent (Shaw, Angour, 1997).

The Halliwick swimming method uses the water as a playground as well. Learning through the games in a pleasurable way and understanding movement, balance, stability, breathing control represent the main important part of the Halliwick philosophy. The values of games are classified by Halliwick Association of Swimming Therapy (2012), and listed as activities where pressure is taken off, continuity of lesson aim by using games to link activities, enjoyable way of learning, elements of competition, increases confidence, immediate understanding of an activity, assessment of individual skills without pressure, general check of progress, opportunity for academic reinforcement, opportunity for hidden objectives, learn a new skill without conscious thought, overcome inhibitions, learn how to win and lose and use imagination.

In the Halliwick method an instructor has determinate role, therefore he or she must remember to vary the support given during swimming lessons, depending on the swimmer's needs. Being at home in the water is primarily a matter of trust. Trust in the water's ability to support the body without the need for us to hold ourselves

up. The value of learning to swim is emphasised in many societies and traditions. In many countries today children are expected to be taught basic swimming skills by the time they have completed their primary education. For people with disabilities, swimming is both remedial and recreational, but it can also be social. The sense of freedom and accomplishment is great booster in everyday life.

The Halliwick method represents a unique way to teach swimming, developed by James Mc Millan. His work first started in 1949 in London at the "Halliwick school for girls", after which the method has been named. It is based on the scientific principles of hydrostatics, hydrodynamics and body mechanics. Its aims are to teach water happiness, pool safety and swimming and to encourage people with special needs to use the water. No flotation or artificial buoyancy aids are used. Swimmers are taught on a one-to-one ratio of instructor to swimmer, until the time when complete independence is achieved. It is not a static set of principles, it grows and progresses as its members develop their own skills and share their knowledge and discoveries. In nowadays the Halliwick method is practised in rehabilitation centres, clubs and schools over the world (American Physical Therapy Association, 2017).

OBJECTIVES

The main objective is to define the Ten Point Program as the basis of the Halliwick swimming concept and to analyse a logical pattern how to master benefits for a swimmer through instructor competence.

The next aim is to reflex wellness according the Halliwick philosophy.

METHOD

- **“Content analysis of literature”**
The method was used as the basic from the view of the instructor treatment, especially qualitative research technique with the approaches: conventional, directed, or summative.
- **“Empiria research”**
Direct field research differs from everyday life experience through the systematic approach of. In addition there are demands for the objectivity and repeatability of the daily observations in praxis.

RESULTS AND DISCUSSION

Updated Ten Point Program

The Ten Point Program creates the basis of the Halliwick method. It follows a logical pattern and therefore all points must be mastered to produce a swimmer who is truly competent in the water. Everyone being taught is called a "swimmer". Until the swimmer has achieved proficiency and confidence, he will always be accompanied by an instructor. Swimmers are taught on a one-to-one basis, as part of a small group. Group work is structured and led by a group leader. Updated (International Halliwick Association, 2000).

The Ten Points are:

1. Mental Adjustment
2. Disengagement

3. Transversal Rotation Control (formerly Vertical Rotation)
 4. Sagittal Rotation Control
 5. Longitudinal Rotation Control (formerly Lateral Rotation)
 6. Combined Rotation Control
 7. Up thrust
 8. Balance in Stillness
 9. Turbulent Gliding
 10. Simple Progression and Basic Swimming Movement
- **“Mental Adjustment”** – it means being able to respond appropriately to a different environment, situation or task. The learning of breath control is an important aspect of this work.
 - **“Disengagement”** is possible to describe as an ongoing process throughout the learning by which the swimmer becomes physically and mentally independent.
 - **“Transversal Rotation Control”** (formerly Vertical Rotation) emphasis on the ability to control any rotation made about a frontal-transversal axis.
 - **“Sagittal Rotation Control”** is the ability to control any rotation made about a sagittal-transversal (anterior / posterior) axis. Longitudinal Rotation Control (formerly Lateral Rotation) represents the ability to control any rotation made about a sagittal-frontal (longitudinal) axis.
 - **“Combined Rotation Control”** is focused on the ability to control any combination of rotations.
 - **“Up thrust”** stresses on trusting the water that will support you. Sometimes called "mental

inversion" because the swimmers must invert their thinking and realise they will float and not sink.

- **“Balance in Stillness”** focuses on floating still and being relaxed in the water. This is dependent on both mental and physical balance control. When balanced, other activities can be performed more easily.
- **“Turbulent Gliding”** enables that a floating swimmer is moved through the water by an instructor without any physical contact between them. The swimmer has to control unwanted rotations but makes no propulsive movements.
- **“Simple Progression and Basic Swimming Movement”** presents a development from simple propulsive movements made by the swimmer to a stroke which may be individual to each swimmer.

Courses in the Halliwick swimming concept

The Halliwick method for teaching people with disability to swim consists of three levels. The courses themselves are conducted only by accredited International Halliwick Association (IHA) lecturers. Aquatic Physical Therapy includes but is not limited to treatment, rehabilitation, prevention, health, wellness and fitness of patient/client populations in an aquatic environment with or without the use of assistive, adaptive, orthotic, protective, or supportive devices and equipment.

The unique properties of the aquatic environment enhance interventions for patients/clients across the age span with musculoskeletal, neuromuscular,

cardiovascular/pulmonary, and integumentary diseases, disorders, or conditions. Aquatic Physical Therapy interventions are designed to improve or maintain:

- Function
- aerobic capacity/endurance conditioning
- balance, coordination and agility
- body mechanics and postural stabilization
- flexibility
- gait and locomotion
- relaxation
- muscle strength, power, and endurance

Level 1: Foundation level

- Module A: An introduction to the Halliwick concept (suggested: 2 days)
- Module B: Developing the Halliwick concept (2 days)

Level 2: Teaching and Therapy level

- Module C: Teaching helpers and instructors (2 days)
- Module D: Teaching swimmers (2 days)
- Module E: Using the Halliwick concept in therapy (2 days course, for physiotherapists only)

Level 3: Advanced level

- Module F: Assessing (2 days)
- Module G: Lecturing (2 days)

The syllabus: Foundation Level Course (Module A and Module B)

The minimum teaching time for a Foundation level course (Module A and Module B) is 25 hours (1500 minutes), of which a minimum of 8 hours (480 minutes) is practical work in the water. The

suggested maximum time for a Foundation level course is 30 hours (1800 minutes) with a maximum of 15 hours (900 minutes) practical work in the water. This includes a core part of lectures and pool work, which is mandatory on all Foundation level Halliwick Courses. The core must take at least 75% of the total course duration.

Module A

Theory:

- The Halliwick Method – History and Philosophy
- Why no flotation aids
- Effects of water
- Disability outlines / handicap effect
- Ten Point Program
- Breathe Control
- Aspect of rotation
- Moving and assisting on land
- Poolside safety
- Care of swimmer
- Video: "Water Free"

Pool work:

- Basic supports
- Balance and rotations
- The moving body
- Demonstrations of effects of water
- Demonstrations of group work for different abilities and ages

Module B

Theory:

- Ten point program
- Groups and Grouping
- Games and activities and their objectives
- Teaching techniques
- Review of games
- Programs for progress
- Singing, music and movement

- Proficiency awards

Pool work:

- Revision of basic supports
- Proficiency awards (badge testing)
- Groups for different abilities and ages
- Group demonstrations: games based on ten point program, and games based on proficiency awards

The optional content takes up a maximum of 25% of the total teaching time and can be theory and/or practical sessions. The optional content has been identified as necessary to adapt the course to: local needs (e.g. safety, insurance, manual handling, etc.), any topic which reinforces the core content, and the individual needs of that course (e.g. a topic on vision in a school for blind children).

Demonstration Program (One Day Halliwick Training)

Schools, institutions, universities and others establishments often requests an introduction to the Halliwick swimming method. Therefore Demonstration program or One Day Halliwick Training was prepared; its duration is approximately six hours. The following topics should be presented and give participants a flavour only of the Halliwick swimming approach:

International Halliwick Association

Outline of the Ten point Program

Why no flotation aids

General introduction to groups and grouping

Breath control

Use of volunteers

Practical pool work relevant to the client group

Video as appropriate

Suggested handouts: Ten Point Program, Course organisation leaflet, Benefits of affiliation, Affiliation forms and Publication list.

Badge Tests in Halliwick Swimming Concept

Halliwick approach can provide many indications of the progress of a swimmer, badge tests are one of them. There are four proficiency tests to monitor a swimmer's advance towards independence in the water. Halliwick badge tests are linked to a series of colour coded indicators: red, yellow, green and blue. All badge tests need to be assessed by registered Halliwick lecturers. Standard requirements are, for:

Red Badge Test (Proficiency Test No.1)

1. Enter the water unaided from a sitting position to an instructor.
2. Blow a plastic "egg" for a distance of 10 meters. (Support from behind if necessary is permitted.)
3. Perform "kangaroo jumps" for a distance of 10 meters.
4. Perform a forward recovery with a minimum of aid.

Yellow Badge Test (Proficiency Test No.2)

1. Enter the water from the poolside to a stable position in the water, unassisted in any way.
2. Sit on the bottom of the pool, or satisfactorily submerge, and demonstrate ability to breathe out under water.
3. "Kangaroo jump" or walk unaided for a distance of 10 meters.

4. Demonstrate a horizontal roll in either direction, with the minimum of aid.
5. Pick up a plate, or like object, from at least 1 meter of water.
6. Demonstrate a mushroom float for a minimum of 3 seconds.

Green Badge Test (Proficiency Test No. 3)

1. Demonstrate ability to enter water from a sitting position unaided.
2. Perform unaided forward recovery and rolling recovery.
3. Float motionless for 10 seconds or mushroom float for 3 seconds.
4. Tread water for 60 seconds.
5. Perform a mushroom float with a push down by an instructor to a minimum depth of 1.2 meter, followed by an unassisted controlled return to the surface, and then recovery, to a safe breathing position, by use of a longitudinal (lateral) rotation.
6. Swim 10 meters in any style.
7. Against a swirl of water, either get out over the poolside unaided or, if this is physically impossible, maintain a safe position from which assistance can be given.

Blue Badge Test (Proficiency Test No. 4)

For holders of Green Badge only!

Part I.

1. Swim a distance of 400 meters, in any style, without stopping or touching the sides, on a continuous circuit.

Part II.

1. Swim, on the back, a figure of eight, within an area of 10 x 5 meters.
2. Submerge and push off from the side of the pool, and glide under water to reach the surface without any swimming stroke.
3. Submerge and recover 2 items, 1 meter apart, from a depth of at least 1 meter, without re-surfacing until completion of the collection.
4. Submerge vertically feet first, until the water is 0.5 meter above the swimmer's head.
5. Rise to the surface and maintain a vertical position, without touching the bottom, for at least two minutes.

Part III.

The test should take place in deep water and be examined on the same day and by the same examiner as the above part. At least one skill (in each group of skills) should be performed.

1. Enter the water head first by:
 - a. seal dive using arms only, or
 - b. standing dive, or
 - c. sitting dive.
2. Perform one of the following:
 - a. rotary crawl using arms only, or
 - b. twin tail using legs only, or c
 - c. rolling log.
3. Perform one of the following:
 - a. washing tub using arms, or b
 - b. spinning top using legs, or
 - c. water wheel.
4. Perform one of the following:
 - a. back somersault, or

- b. front somersault, or
- c. pendulum, completing 1.5 swings.

The swimmer should be capable of performing each activity without the need for help, reminders or instruction, each skill should be performed competently, in a relaxed and confident manner, demonstrating good breath control and balance, and having his eyes open at all times. After passing the Blue Badge, the swimmer should be safe to enjoy the complete freedom in the water, with only the watchful eye of a lifeguard to ensure his or her safety.

CONCLUSIONS

In the Halliwick philosophy independent and enjoyable movement in the water is the prime aim, not a perfect swimming style. No flotation aids are used because they may restrict already limited mobility and can upset one's balance in the water or prevent to change positions independently. It is our intention to extend the opportunities and initiate thinking about swimming for those whose lives are restricted by their disability.

Swim lessons, as well as water exercise for maintenance of wellness, can be facilitated for individuals with disabilities when Halliwick activities are used. Swimming can surely broaden the horizons of their existence. For many, courage and determination can lead to a greater independence and better quality of life. Halliwick swimming concept, with newest changes, actualises such approach. New instructors need to know the basic principles and philosophy, the use of

games and groups, one-to-one swimmer-instructor ratio, the importance of communication and mental adjustment, the absence of flotation aids, etc. Joan Martin, a senior instructor and one of the co-inventors of Halliwick Method, stresses that no matter how experienced an instructor may be, there is always more to learn about teaching swimming. The Halliwick Swimming Method is a carefully designed program for teaching swimming most effectively. It provides instruction with clearly identified and progressive targets to aim for at all ability levels. Within the program structure instructors are able and encouraged to develop their own personal style of teaching. Swimming is not just about manoeuvring oneself through the water; it is also about being in the water and with water. Therefore a creative approach to the water is part of a creative approach to life.

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THE SOCIAL ECONOMIC SITUATION AND ITS IMPACT ON LABOUR MIGRATION IN THE SLOVAK REPUBLIC

Monika MAČKINOVÁ

Abstract:

The economic crisis has affected most of the countries in the world and its consequences felt by nearly everyone in various fields and forms of life. Among its most serious consequences is included the rising of unemployment, as well as the expansion of poverty, which did not avoid the Slovak Republic, too.

The current economic crisis, as well as the previous one from 1929, are related to the indebtedness of citizens when by consequences of changes at the labour markets may occur problems with repaying of their debts. Resulting in commitments to several of institutions which are citizens not able to pay, unemployment, as well as the deterioration of the living standards of the affected family.

Keywords:

Migration, labour migration, socio economic problems.

LABOUR MIGRATION

In late 90s of the last Century was observed an increase in permanent immigration, as well as in temporary labour migration. Relocation was primarily from South to North and from East to West. (Lidák, 2010). An increase in migration is considered by Garson (2003) as a result of the development of information and communication technologies, as well as in the health and education, which necessarily needed an influx of new labour force with a certain education. Excellent source of skilled labour were mainly students from abroad. Labour migration in itself, is encompassing unskilled labour in some sectors, such as agriculture, construction, as well as supporting jobs at home, which was related

mainly to Greece, Italy, Spain and Portugal. Individual host countries have sought to promote labour migration through state policy. (Baršová, Barša, 2005).

Temporary labour migration has by Doudeijns (2003) various forms:

- Migration, which is caused by labour shortages with some professional qualifications or a particular sector
- Migration linked to investments
- Migration-related to international obligations and with the movement of employees working in multinational companies.

"The labour immigration is often seen as a factor which could play a role in

mitigating of the impact of population aging, balancing of the deficits in the pension systems and in increasing of the competitiveness of the economy." (Baršová, Barša, 2005, p. 89).

In recent years, European Union countries agreed on the following points (Baršová, though, 2005):

- Labour migration can be seen as immigration leading to the settlement, so it is important not to forget the maximum integration capacity of the society.
- The key is considered desirable immigrants immigration - educated and highly skilled workers. Management, strengthening, but mostly support of this type of migration is a policy objective for all EU countries.
- Promote the complete liberalization of certain segments of the labour market. This applies primarily to high-level experts, researchers, scientists, managers and workers as professionals. These migrants contribute to the success of the entire European Union to compete in a competition, where the individual talent and initiative are the most valuable resources.
- Acceptance of foreign workers as immigrants brings with it the need for their integration. Therefore, the relationship between immigrants and the State must be seen as a process of civil integration of the immigrants. On how the migrant will be integrated into society decide his/her ability and willingness to adapt.

- Due to the existence of the European Union as a free area without internal frontiers, each state carries a huge responsibility for accepting immigrants on common territory in respect to other Member States and the European Union as a whole.

Conditions for obtaining a work permit in the various countries differ. However, in general for the work permit must request the competent authority, which in the Slovak Republic is the Ministry of Labour, Social Affairs and Family, and all embassies and all the embassies representing foreign states. There are also exemptions for certain groups and individuals. For example, France and Germany prefer the conditions of minimum income and the highest educational attainment. The UK and Ireland have provided official lists of fields in which are struggling with the lack of available labour. If labour migrant meets all the criteria required arrival in the country is much easier. (Baršová, Barša, 2005).

THE ECONOMIC SITUATION AND ITS IMPACT ON LABOUR MIGRANTS IN THE SLOVAK REPUBLIC

Slovak or Czech Republic don't belong to the most attractive countries in the European Union, in which the migrants will seek a better life for the prosperity of both countries. Toward us is heading, however, many immigrants workers, whether skilled or unskilled. By impact of the improved economic situation in Slovakia, the labour market expanded, however, by the adopting of some bad decisions in recent years (for example, interference of secondary

vocational schools) occurred problem which has caused labour shortages in certain disciplines and in positions that do not require high qualifications. These are mainly supporting and cleaning services. Increased boom in construction work and the lack of personnel with adequate expertise in this sector (mason, carpenter, and glazier) contributed to the arrival of labour migrants, mainly from Ukraine, Russia and Vietnam. (Mauritzová, Bugri, 2010).

By Slovakia's accession to the Schengen area in December 27, 2007 was reduce the number of illegal migrants into the Slovak Republic. However, with the onset of economic crisis in the second half of 2008, the situation in Slovakia has significantly changed. The reason was the declining number of contracts, decreased export of goods and higher unemployment of the majority population which was caused by the crisis. This caused also the loss of interest in migrant workers from abroad, as well as the flourishing of the illegal employment of foreigners, who are still willing to work for much lower wages than native citizens. (Mauritzová, Bugri, 2010).

We distinguish between two periods of development of labour migration in the Slovak Republic:

- The first period dates back since the establishment of the Slovak Republic on 1 January 1993, when residents and refugees with granted asylum did not need any permission to do business or take up work. To work were not permitted only asylum seekers and persons with tolerated stay. (Divinský, 2004). Labour migration in the Slovak Republic

was regulated through bilateral agreements on employment of foreigners between the Slovak Republic and Vietnam, the Czech Republic, Russia, Ukraine, Germany, Poland, Hungary, Switzerland, France, Belgium, Finland and Luxembourg. The purpose of these agreements was to reversible facilitate employment of citizens in those countries. (Divinský, 2005).

- The second begins May 1, 2004 by entry of the Slovak Republic into the European Union and European Economic Area, by which Slovakia was committed to the principle of free movement of labour. According to the Act no. 5/2004 Coll. on employment services and by subsequent legislation, the citizens of the Member States and their family members have the same status as citizens of the Slovak Republic. The free movement of migrants - citizens of the European Union with their families - applies to seasonal workers, temporary workers and to workers living in border areas. (Divinský, 2005).

In most Member States of the European Union consists the migrants coming to the country for work, a highly positive element at the international labour market. Compared with them, the Slovak Republic does not record excessive migration into the country of foreigners who wants to work. However, it is very important that we are adequately prepare for the future. Also as by Divinský (2005) it is a high probability that the Slovak

Republic gradually manage to get closer to the developed EU states and becomes unlike currently attractive host country for labour migrants.

If we want to determine official statistics on legal labour migration in the Slovak Republic, there are accessible only limited resources. Even more difficult is to obtain data on illegal labour migration. (Košta, 2003).

LABOUR MIGRATION OF THE SLOVAK CITIZENS

After November 1989, and in particular by the accession of Slovakia to the European Union began to leave thousands of Slovak citizens abroad. Many people uses and are using currently open borders for business trips or holidays. However, many were leaving abroad for much longer, either to study, work or to live permanently. The cases of emigration of citizens have been different, mostly due the higher living standards of the recipient country or due better job offers. Therefore, from these citizens become transnational migrants as they were part of a legal, normative, institutional and of course the political system of two or more States, where they can exercise civil rights in relation to both governments.

Several states now officially recognizes dual citizenship and nationality, which is a very important basis for expansion transnationality and transnational citizenship. (Glick-Schiller, 2005). The Luther (2006) survey shows that Slovak labour emigrants have been incorporated into transnational communities. Their multicultural environment affects their identity and a new world view. Trans-nationality is perceived as

a path that opens the way to tolerance to surroundings, it helps to overcome the fear of diversity and teaches us to fully exploit the potential of trans-national migration and of its actors. Luther (2006) further distinguishes these characters of transnational migrants:

- Citizens are part of normative, institutional, legal and political system of two or more States.
- They are maintaining and strengthening the multilateral social relations, thereby establishing a social network, crossing cultural, political and geographical boundaries.
- They have several identities and are easier to identify with the larger transnational area.
- Home for them is not dependent on one place and culture.
- They adapt quickly to a new environmental and new conditions. Adopting a new culture, but rarely undergo with the culture and are assimilated.

Transnational mobility and migration of people is currently perceived as well as by Luther (2006) as a natural part of modern life represented in a global world.

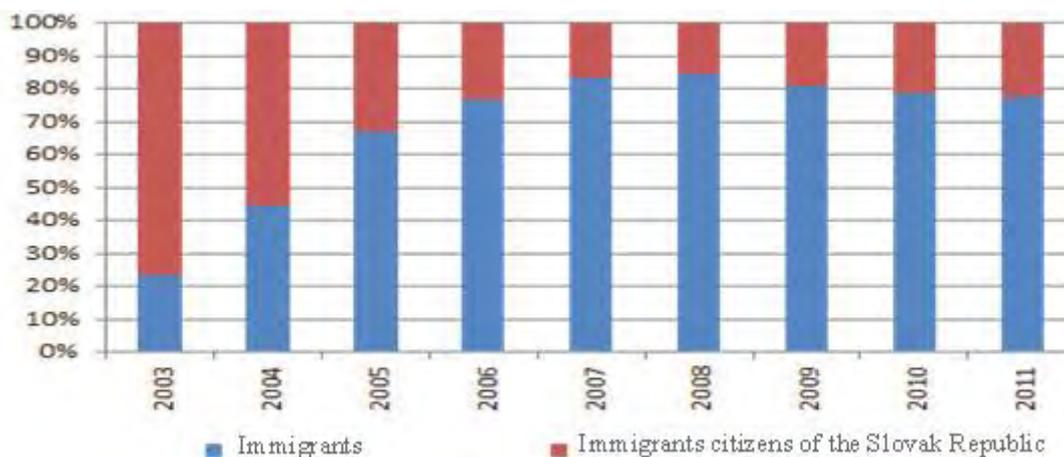
LABOUR MIGRATION IN THE SLOVAK REPUBLIC

Internal migration of the Slovak population for work can be recognized by the change of residence, if the person, who moves, is indicating the reason for this change the shortening of routes into employment or start at a new employer. According to the Statistical Office of the Slovak Republic is the mobility of our

citizens to work in the country relatively low. It follows, that neither the offer nor the demand for labour in the labour market doesn't significantly affect the permanent residence. We could justify this by the high prices of real estates and of housing costs in cities, which are often prohibitive for potential migrants. (Jurčová, 2008).

The share of Slovak citizens and immigrants with permanent stay in our country between years 2003 - 2011 is showed in Graph No. 1 which shows that the migration of Slovak citizens, in comparison with migrant workers from abroad is actually very low.

Graph 1 Share of Slovak citizens and foreigners on the total number of immigrants with permanent residence in the Slovak Republic in the period 2003 - 2011



Source: Statistical Office of the Slovak Republic

Internal mobility of citizens looks prospectively into the near future stable. According to the Institute of Informatics and Statistics of the Slovak Republic only a small percentage of people (4%) who move within the region states as the reason change or to be closer to work. Little bit different it's looking with the migration of population for occupational reasons beyond the territorial units, the number of such migrants is more than double (10%).

According to Jurčová (2008) has obtained degree of population only an indirect effect on labour migration. With this argument, we do not identify. We believe that educational level affects a lot

possibilities of citizens to be successful at the labour market and thus often also need to find adequate work outside of permanent residence. People with lower levels of education (secondary vocational schools) are generally moving only in the territory of their district. Within the region are already more likely to move people with upper secondary education. Citizens who have acquired secondary diploma, often have no choice but to move even a few hundred kilometres, only to find a job corresponding to the acquisition of their expertise, such as specialists. The largest influx of migrant workers is in Bratislava region and the places where come large

foreign investors such as KIA Slovakia in Zilina, Samsung in the Nitra region or via expansion of production of PSA Peugeot Citroen Slovakia in Trnava. (Jurčová, 2008).

ASPECTS OF CITIZENS MIGRATION FOR EMPLOYMENT

For residents of Slovakia and the Czech Republic was the offering of work abroad always very attractive. Even at present time, citizens of both countries use labour migration in its entirety. The main reasons to go to work abroad is the vision of rapid earnings and higher wages, the opportunity to better skills and abilities, but often also lower cost of living compared with home. Therefore are migrants at the beginning willing to adapt for a shorter time even to tougher conditions. Seasonal or temporary labour migration often used just university students, who during the summer holidays go abroad to gain extra income. If the migrant has university degree or technical and is professionally skilled, has a better chance abroad to find a job with an adequate valuation. (Jurčová, 2008).

According to estimates after the Slovakia's accession to the Schengen area in 2007 took advantage of the free labour market abroad about 220,000 Slovak citizens. Labour migration has intensified in this period and throughout Slovakia, where began to show large differences in unemployment rates between regions. The highest unemployment rate was recorded in the southeast part of our country, which is in the districts of south-eastern Slovakia. Mentioned areas are the most vulnerable in particular because of the migration of

economically active citizens to work in other regions. (Jurčová, 2008).

We believe, that for the temporary labour migrants with Slovak citizenship are countries using foreign currency not as lucrative and profitable, than it was before the outbreak of the current economic crisis and trough the entry of Slovakia into the Euro area since the euro has strengthened significantly against the other currencies. We also experience gradual start of the economies of the Member States of the European Union.

MEASURES OF THE LABOUR MARKET IN THE SLOVAK REPUBLIC

According to the Act no. 5/2004 Coll. on Employment Services could Offices of Labour, Social Affairs and Family provide a variety of financial contributions in the form of active measures to promote employment and, indeed, labour migration, namely:

- For commuting to work. The monthly allowance serves as reimbursement of travel costs on public transport, vehicles needed for the attendance from the permanent or temporary residence to place of work and back. The grant applicant must apply only in writing. It is provided the most in the amount of € 135 per month up to six months of starting employment. Its height depends at the distance between work and residence.
- For relocation for work. The benefit is partially compensation for the expenditures, directly related to the relocation of

jobseekers from the place of residence to the new residence. The applicant is entitled to an allowance if the length of this distance was less than 50 km. The maximum contribution is € 1,327.76. Provable expenses include for instance the first rent, or the first payment relating to the use of dwelling.

- For transportation to work. Allowance is paid to employers who provide their employees daily transportation to and from work. The employers are entitled when public transport vehicles not perform transport in the necessary extent.

Slovak Republic would certainly needed to develop programs and measures that would help attract skilled migrants with a certain expertise, because in some sectors of the Slovak national economy is a significant shortage of labour. Slovak Republic is struggling with negative demographic trends within the aging population and with significant difference in the rate of unemployment in individual districts. This requires:

- Gradually increased job mobility of people willing to commute to work to regions with labour shortages.
- Changing the education system in schools so that students training is more focused and managed by the labour market and by the possible lack of working power in the sectors with shortage, to compensate with foreign migrants in response to labour market needs.

Domonkos, Páleník, Radvanský (2010b, p. 18) noted that in addressing of the issue of migration due to labour shortages in certain sectors we cannot "treated it as a separate element of the labour market, but must be seen as part of the overall labour market in the country and following the situation at the labour market, the employment of Slovak citizens and nationals of Member States of the European Economic area, who have the community priority."

In Table 1, is indicated estimated deficit of workers in certain sectors into the future (2030). For example, within the goal of the Slovak Republic to tighten 90 to 100% of the performance of the European Union, would have to fight with serious problems such as acute labour shortages.

Table 1 Estimation of the needs of workers and the deficit (rounded)

The EU performance level achieved by the Slovak Republic in 2030	The required number of employees in thousands	The deficit of workers in thousands
75 %	2 400 – 2 450	320 – 420
80 %	2 500 – 2 600	450 – 550
90 %	2 550 – 2 650	500 – 600
100 %	2 650 – 2 800	580 – 720

Source: Long-term vision of development of Slovak society, p. 89

Illegal migration has on the host country greatest impact in the social and health care area, as it is required to treat the foreigner in case of an accident or acute illness. When the migrant does not have health insurance, the Health insurance Company will not cover his/her treatment. (Mauritzová, Bugri, 2010). Therefore, the Slovak Republic, in order to prevent this, use as prevention of illegal migration, practical measures, such as are awareness campaigns and activities aimed at improving knowledge about the host country in the Third World.

In cooperation with non-governmental and international organizations carried out activities that inform foreigners about the legal opportunities for entry, residence and employment in our territory. This information is also available on the website of the competent ministries in Slovak and English language, on the website of the International Organization for Migration and of the Slovak diplomatic missions abroad. They provide different kinds of advice on various areas of life in Slovakia. Another tool in the fight against illegal migration and illegal employment of migrants is to check their visa requirements and work permits prior to their arrival at the external border of

the state. Furthermore, technical and material resources for members of Border and Foreigner Police, such as computers and scanners, portable readers of documents, apparatus for recording digital facial images, UV lamps, fingerprint readers. The Slovak Republic by conclusion of the Schengen agreement uses within the elimination of illegal migration also information and video surveillance systems. (Mrlianová, Ulrichová, Zollerová, 2011).

Among the practical measures are already in our country included compensatory measures replacing internal border controls. In terms of controls to detect illegal residence and illegal employment of foreigners and subsequent deportation to their countries of origin. Alternative to legalize their stay in Slovakia are considered further practical measures, i.e. allow the illegal migrants to file an application for asylum, thereby avoiding expulsion from the country (Mrlianová, Ulrichová Zollerová, 2011). In § 68a and § 68b of Act no. 5/2004 Coll. on Employment Services, are provided important labour market measures designed to prevent illegal work and illegal employment in the form of penalties for employers, who do not fulfil their tax obligations to the state, but also to such

illegally employed persons. The fine can impose the Headquarter of the Office of Labour, Social Affairs and Family.

EMPLOYMENT OF FOREIGNERS IN THE SLOVAK REPUBLIC

The Slovak Republic has seen a growing number of immigrants into its territory after its accession to the European Union. The year 2007, when the European Union expanded including Romania and Bulgaria, was for Slovakia the year with large numbers of immigrants. Until then, the two newly accepted countries citizens needed permit for to stay longer than three months. Only 7% of immigrants reported as the reason for their relocation work reasons. According to the region's most migrants came to the region of Bratislava, Trnava, Trenčín and Nitra. Less attractive regions for immigrants were Presov and Kosice. The Slovak Republic is one of the countries with a small number of foreign immigrants. (Jurčová, 2008).

If a foreigner coming from third countries is interested in working in the Slovak Republic, he/she must obtain a working permit. An application for a working permit must submit either an employee or potential future employer, but this must happen before the foreigner crossed the borders of the Slovak Republic. Each application is assessed individually as well as considering of the current situation on the labour market in Slovakia. If the foreigner is employed under an international agreement on employment, it can be employed without regards to the labour market. When he/she obtain an employment permit, he/she may apply for temporary residence permit in the Slovak

Republic in respect of labour migration. In case the foreigner with temporary residence wants to replace the employer must re-apply for a new work permit.

Different rules apply to citizens from the European Economic Area, Swiss citizens and their family members. Law no. 5/2004 Coll. on Employment gives these citizens equal opportunities in employment as have citizens of the Slovak Republic. It also allows them freedom of movement without discrimination.

On the basis of Council Regulation of European Economic Community No. 311/76 on the compilation of statistics on foreign workers, has the Slovak Republic statistical obligations on the movement of foreigners for work in the Slovak Republic. The data in the Slovak Republic collects and processes Headquarter of Labour, Social Affairs and Family. Bilateral agreements obligates the employers to report trough the information cards the move of working foreigners. It is their duty to report the end of employment relationship or if they send them for work performance. (Jurčová, 2008).

CONCLUSION

Labour migration allows employees to carrier placement in the labour market, acquire new knowledge and experience, getting to know new and different cultures, and the extension of language skills. On the one hand, labour migration brings positives already mentioned, on the other hand, hides some negative, which is especially emigration of young and perspective people, but mainly economically active people abroad following the subsequent absence of those residents of the home country. Surplus

of force in certain sectors makes the wages of the national economy not to grow, even in these sectors they are decreasing. Every country should strive to create enough job opportunities for every citizen and fight by all available means and measures for reducing the rate of unemployment in the country.

In the second half of 2008, was the Slovak Republic, like other European Union Member States, hit by the economic crisis. Its impact on our economy as well as inadequate spending of government funds, meant that there was an imbalance between supply and demands of the labour market, which unfortunately continues even today. Matyšák (2015) says: the state was forced to save and to stop supporting the development of medium and small businesses.

This contributed to an enormous reduction of job positions at the labour market, as well as in significant decline in the creation of new job (Matyšák, Tůma, 2015). Impact of the economic crisis in some regions significantly deepened unemployment. This limited the interest of employers to employ foreigner migrant workers, which helped the flourishing of illegal work as between migrants also by the majority population (Slovák, P., Masaryk, V., Matyšák, P. 2014).

Slovak Republic, among other difficulties must begin to address the serious problem that is caused by the reorganization of curriculum in secondary education, but mainly by reducing of interest of young people into unattractive, physically carried out and supporting paraprofessional. In general for this types of work is very little interest, since in recent years is a growing number of people

studying at the universities, by which they complement and extend their education and work attractiveness to employers. By means of these factors is Slovakia struggling with labour shortages, particularly in certain sectors of expertise at some of the national economy sectors and is forced to deal with this situation by taking of migrant workers from abroad.

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