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***Physical activity of infants and young children in the water
environment***

Aktywność ruchowa niemowląt i małych dzieci w środowisku wodnym

Key words: physical activity, swimming, physical development

Słowa kluczowe: aktywność ruchowa, pływanie, rozwój fizyczny

INTRODUCTION

Physical activity is an essential component and integrating healthy lifestyle. Without it difficult or even impossible to hold the health and well-being of people of all

ages. Insufficiency can cause many disorders and increased risk of disease. In order to maintain or improve the health of systematic activity is required and optimal for all its level. This is especially important for children and adolescents with an appropriate level of physical activity stimulates their growth.

Swimming infants and young children is an increasingly popular form of physical activity. It ceases to be just a fashion and becomes a conscious choice of parents in order to stimulate the psychomotor development of the young child. In the case of swimming, there are no age restrictions on activities in the water environment a child can attend with their parents from 3-4 months of age starting to adapt to the aquatic environment forms the basis for teaching swimming motor function in the future in order to then be able to use other forms of physical activity in the environment participating in swimming aquatic sports, recreational or therapeutic.

In the opinion of experts participating children in infancy in organized activities in the water has a very positive impact on their physical, mental, intellectual and social. [1,2,3,4,7,14,15].

Aquatic environment is different from that in which man lives every day. Due to displacement, weight reduction is a sham and body movements are easier to make. The higher density of water compared to air resistance reflected, which is traversed by involving large muscle groups. The hydrostatic pressure causes the inspiratory muscles are activated for more work, heat conduction through the water causes a noticeable change in temperature relative to air. [5].

Activities in the aquatic environment positively affect the development of motor skills, coordination, neuromuscular, cardiopulmonary system activation - respiratory stimulation of the bone-muscle-joint, and strengthen immunity. The water by its physical properties (density, hydrostatic pressure, viscosity) affects receptors in the skin of the child, following which stimulates the development of proprioception. Muscle fibers lying directly under the skin are activated by the touch of a parent intensively and water, increasing the effect of relaxation and muscle tension adjusting [12,13]. Development of the child is also possible by stimulating visual and auditory. Splash, the sound of water, the commands to perform actions having fun with singing, observing their behavior and companions and the reaction of water into individual movements, give your child the opportunity to learn a causal relationship, new sounds, associate and analyze movement needed. Introduction of an additional object such as a toy encourages your child to perform more complex movements, which constantly stimulated to develop, among others, cognitive [1].

It is also important to deepen the emotional bond between the child and the parent, due to joint participation in the activities. Parent body is still close to the child's body is maintained visual contact. Amusements and exercises performed by the child complemented by a parent's approval and acceptance. Regular participation in activities the child gets used to the active leisure and is a great way to relax physically and mentally [7,9,14].

By being in a group of peers develop children's social abilities and also develop their personality. The importance of educational tasks, especially movement, where children take part individually or in groups, it is huge and is not limited to the positive

impact on the child's motor development [7]. Learns regularity, helps in overcoming difficulties and gaining success, educates strong will and courage.

PURPOSE OF THE STUDY

The aim of the study was to learn how to implement the curriculum swimming lessons for infants and young children and to assess the impact of physical activity in the water on a physical and psychomotor development of children in infancy and the baby.

Formulated the following research questions:

1. Is the swimming classes for infants and young children have a positive effect on their development?
2. What kind of exercise (game) and the accessories used during the teaching swimming lessons?
3. Is there a relationship between physical activity and participation of parents in their children's swimming lessons?
4. What is the opinion of parents about swimming lessons?

MATERIALS AND METHODS

The study used a diagnostic survey form (questionnaire) addressed to the parents of children attending swimming. The study included 60 children attending swimming classes for infants and young children in the province of Silesia in 2013/2014 year. Size of the group depended on the number of tutors, but does not exceed 20 people, including 10 children and 10 caregivers. A single unit classes lasted 30-45 minutes. The water temperature was 30-32°C.

The questionnaire was anonymous and contained 25 questions about swimming lessons infants and young children. Consisted of closed questions, open-ended questions with the possibility of issuing its own response, in a few cases it was possible to select more than one answer. People participating in the survey were informed of the purpose of testing and were given instructions on how to complete the questionnaire. The study focused on the evaluation of the selection of games and exercises used in teaching swimming lessons, the type of gear used in teaching, age of children involved in activities, the impact of participation in activities on the health of the child and its development and parent opinion about classes. The collected data obtained during the survey are organized thematically and subjected to statistical analysis and descriptive. Basis for the development the research material was to determine the frequency of responses to the question expressed by means of numerical values and rates.

RESULTS OF RESEARCH

An analysis of research suggests that In the classes were the largest group of children under one year of age (55%), 8 children (13.33%) were between the ages of 1 to 2 years, and the group of children aged 2 to 4 years accounted for 31.66% of the participants (table 1).

Table 1. Age of children attending classes

Age of the child	N - 60	%
Less than 6 months	17	28,33
6 -12 months	16	26,66
1 - 2 years	8	13,33
2 - 3 years	8	13,33
Over 3 years	11	18,33

A large group of children under 1 year of age who participated in activities probably indicates the awareness of parents related to the knowledge of the beneficial effects of swimming classes on child development, as well as the fact that for several months of the child's activities in the aquatic environment is the only way to participate in the activities organized. Small children can no longer participate in other physical activities.

Table 2. The duration of participation in classes

Time	N - 60	%
Since a month	5	8,33
Since 6 months	33	55
Since the year	16	26,66
Over the year	6	10

Another question asked respondents related to the length of the regular participation in the classes. The majority (55%) of parents with a child involved in the activities of a few months, 22 patients (36.66%) of the year, 5 people (8.33%) of the month. Such a high percentage of children (92%) attending for at least six months reflects the continuation of the course, the observation of which could confirm the beneficial effects of parents' activities in the aquatic environment on health, well-being and development of the child (table 2).

Table 3. Frequency of participation in swimming lessons

Frequency	N - 60	%
Raz w miesiącu	3	5
Once per month	13	21,66
Once per week	41	68,33
More than once per week	3	5

Most of the respondents (68.33%) participate in the activities of swimming with infants and young children once per week. The most popular are swimming lessons for babies and young children take place at once a week, usually on weekends, so that professionals working parents to participate in them with their children (table 3).

Most of the parents (73%) participating in swimming classes could swim. The rest of the respondents confirmed their inability to swim. Swimming classes for infants

and young children do not require swimming skills from their parents because of all the fun and exercise are executed at a depth of 90 to 140 cm. However, on the basis of the answers showed that these programs often decide to parents who can swim. Perhaps because they feel more confident knowing how to swim in the water, are aware of the potential risks arising from the presence in the aquatic environment and its assessment can also ensure the safety of their swimming child.

The survey is also being asked whether parents have information about the permissions of the person established classes. It is important that a person who is empowered class instructor or trainer, which guarantees competence in the implementation of the program of the course, the selection of games and exercises, but also the proper use of safety rules during class. It was found that most parents know that the training instructors are swimming instructors or trainers, 5 parents did not know what permissions is a person who exercises.

Infants and young children can be prepared to participate in activities at the swimming pool through the early application of adaptive exercises at home, involving the watering of the body and face of the child during the bath, the baby's face dipping under water, increasing the noise through the use of a shower (creating conditions similar to those of the acoustic at the swimming pool), increasing the water space through shared bath child and parent in a large tub [8]. Treatments used before the course starts may accelerate the adaptation of the child to the aquatic environment involving the elimination of obstacles to the establishment of proper contact between the leading teaching and participant activities and strengthen the body's resistance to thermal and mechanical stimulus [8]. Therefore, the question addressed to the parents is the adaptive and applied exercises at home before the start of the course. The majority (80%) of parents surveyed did not use before exercise classes at the swimming pool with water to prepare a child because they do not have knowledge related to the initial adaptation of the child for classes at the swimming pool at home. In contrast, 17 patients (28%), after being informed at the first meeting in the classroom with the introduction of adaptive exercise, decided to apply additional exercises to prepare at home, in parallel with the start of the course, have adopted the child quickly to a new place and aquatic environments.

Another question asked related to surveyed pre-adaptation to the aquatic environment of the child during class. In the opinion of the majority of parents in children observed the situation of anxiety associated with the arrival of a new environment (indoor swimming pool, foreign persons) as well as from being in the water. Several parents said their children need time to adapt to the new environment, because react crying and showed interest in participating in the activities. However, this situation changed after 2-3 meetings did not result in cancellation of the participation in the course swimming.

Table 4. Reasons for the participation of children in swimming lessons

Motivations	Number of answers *
Disease entity	0
Increase the resilience of the child	11
Active spending free time	11
Strengthening the parent-child relationship	13
Acclimatization child with peer group	18
Improvement of motor skills and coordination of the child	15
Having fun	14
Others	0

** The sum of the answers is not equal to the number of respondents because respondents could give more than one answer*

Surveyed were asked about the reasons to enroll your child swimming course. Respondents from the proposed answers can select up to 3. It was found that the most common reason enroll your child in the class was to get familiar the child to swim with the peer group and to improve movement and neuromuscular coordination of the child. Marked the minimum active parents to spend time and increase the resilience of the child (table 4).

Table 5. Use of supplies during classes teaching swimming

Types of educational supplies	Number of answers *
Mats	5
Balls	8
Sleeves	12
Balloons	10
Boards	7
Pool noodles	15
Inflatable toys	13
Submersible toys	5
Floating toys	8
others	0

**The sum of the answers is not equal to the number of respondents because respondents could give more than one answer*

In the survey were asked about the use of educational supplies used most frequently during the course and exercises and games for use during classes. In each of the questions, respondents were allowed to select up to 3 answers.

The most frequently used utensils during class were pool noodles, inflatable toys, swimming sleeves, balloons, floating toys, balls and boards. The least frequently used utensils were submersible toys and mats (table 5). Attractive, colorful accessories used in classes in the aquatic environment allow you to improve both muscle coordination and visual-motor. Occasional use of toys submersible was probably related to age most children, infants and young children aged 1-2 years are not yet able to dive into the depths, in order to take the object from the bottom of the pool. The opinion swimming specialists in infants and young children related to the use of swimming sleeves are divided. Some recommend the use of this utensil, others strongly emphasize the negative effects of the sleeves. Swimming sleeves serve mainly as a utensil increasing buoyancy, allowing the child to safely maintain the surface of the water, but it also restricts the freedom of the child's movements during locomotion and hinder immersion of the body below the surface of the water. Wonders as the frequent use of the gear in the class, which is also involved carers to belay and sustain the child's body on the surface of the water.

Table 6. Types of exercises and activities used in swimming classes

Type of exercise	The frequency of use
Holding a child in a vertical position in a place / in walking / the toss	very often
Precipitation / jumping into the water from standing or sitting position	often
Slides on the surface of the water on the chest / ridge / Side	often
Towing a child by a parent with continued chest / back of	often
Dipping in water	rarely
The movement of the chest / back of the activation upper limb / lower limbs	often
Active break resting	rarely / never
Independent movement of the child in position in the back / chest	sometimes

During the course the most commonly used exercises was towing a child on the breast and the back using all sorts of grips in order to maintain the child. Also used in the vertical position (child set on front or back of the parent), during exercise in place and march, tossing grip protective against accidental immersion, all kinds of jumps (the sitting position on the edge of the swimming pool, from a standing position), slides on the chest and on the back or side (table 6). In many games and exercises used

footwork and activation of the child's shoulders, striving to produce the skills of independent movement, using a utensil or grip the increasing displacement of the support. The other hand less frequently used exercise and have fun with your baby's head submerged under water, the answer 50% of respondents reported. Immersion child's head under water are used depending on the level of the group. Usually the first attempt of immersion in water is introduced into the classroom the first 10-12 lesson course swimming, after having gradually preparing participants to complete this item. [10,11,15]. Since most children attend classes from 6 months, it is striking that the lack or the occasional use of this exercise classes. Perhaps it results from the frequent use of swimming sleeves that make it difficult to perform exercises with submerged under water. The question gave the opportunity to select the nature of the ways dives. The most common way submergence with the parent of the front position and in reflection from the wall in the form of a slip. Another question concerned the form of classes used during the course. The most common form of during class swimming infants and young children were group exercises and playing with singing. Less frequently individual exercises performed with the parent, and the least forms of competition, stories movement (table 7).

Table 7. Types of play / exercise classes used in swimming

Types of play / exercise	Number of replies *
With singing	34
Movement story	3
Individual with a parent	10
Form of competition	5
Group	33
Other	2

**The sum of the answers is not equal to the number of respondents because respondents could give more than one answer*

Seems very significant information about the impact of participation in activities for the development of a small child. Most parents of children attending noticed positive changes in the development and behavior of the child. Frequently parents served in the survey responses increase immunity, physical activity and longer, more peaceful sleep. The least improvement in appetite declared carers of the child. Two parents have not noticed any positive changes in a child under the influence of water courses and five noted adverse changes - increased susceptibility to infection.

The vast majority - 55 parents (92%) answered that classes meet their expectations. Very important for the parents of the ability of the common active leisure with the child, which brings about the pleasure of both the child and parents. Only 2 people (3%) is not satisfied with the lessons. Continuation of participation in the next course swimming infants and young children declared 50 parents (83%).

SUMMARY AND CONCLUSIONS

Based on the analysis of the responses to questionnaires sent to parents of young children participating in swimming courses, it was found that the majority of children (92%) attend swimming lessons systematically, from 6 months or longer. Prior to their participation in class, except for a few cases, the adults did not use exercises familiarize the child with the water in the home. The main reason for participation in the class was mostly tame a child with a peer group, a desire to improve motor skills and coordination of the child and strengthen the ties parent - child. Exercise and games are conducted in a groups, usually combined with singing. During the course, an important role is played by toys and swimming utensils increasing displacement, facilitating the maintenance of the child's body on the water surface, or activating a child to perform physical activities. Most instructors using pool noodles, swimming sleeves, balls, inflatable floating toys and using them in a number of exercises and games. The use of different types of games and exercises and colorful, various utensils influences on cognitive development of the child and to exercise stimulates locomotor movements [8,10,15].

The vast majority of parents surveyed believe that there have been positive changes in a child under the influence of classes at the swimming pool. The most frequently mentioned benefits should increase resistance, longer sleep and increase the physical activity of the child. Classes in the aquatic environment impact on harmonious development of the child primarily by stimulating the circulatory and respiratory system, and nervous movement, and their specific causes that despite the high physical activity after school child is mentally relaxed and happy to take a new tasks at the next lesson [8,15].

Receive tactile and proprioceptive when in an aqueous environment is essential for the development of perception, affecting motor function: physical coordination, manual dexterity and lateralization, planning the sequence of movements, which in the future is reflected in the development of self-service, assimilation techniques, drawing and writing, handling tools and also affects the emotional stability and concentration of attention [12].

There was no association between physical activity parents and their children attending swimming classes. Most parents do not take regular physical activity and has not cultivated in the past any sport. Few people take recreational physical activity choosing swimming, cycling or running. Despite thismost of people declared continue participation in the classes. The task of parents in the education of recreation is skillful directing interests and the child's physical activity. Is why joint participation in physical activities of children with their parents is the best way of education for recreation and activity.

Regular physical activity causes the body to series of positive changes. Education in the child the desire to attend regular classes depends on the processes of teaching and education, so it's important that parents, family-friendly environment, kindergarten and school aroused interest in sport and active leisure products.

CONCLUSIONS

1. Participation of children in swimming lessons has a positive effect on their health and acts as a stimulant on their psychomotor development.
2. Water activities develop personality and social abilities of children by being in a group of peers.
3. Social activities at the swimming pool parent with child strengthen emotional bonds between them.
4. The swimming classes used a variety of games, exercise and utensils teaching affecting the child's senses and activating to actively participate in the classes.

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ABSTRACT

The aim of the study was to learn how to implement the program of activities swimming lessons for infants and young children and assessment of the impact of physical activity in the water on a physical and psychomotor development of children in infancy and the baby. The study used a diagnostic survey form (questionnaire) addressed to the parents of children participating in swimming classes. The study involved 60 children attending swimming classes for infants and young children in the province of Silesia in 2013/2014 year. The study focused on the evaluation of the selection of games and exercises used in the course of teaching swimming, type of utensils used in teaching, age of children involved in activities, the impact of participation in activities on the health of the child and its development and parent opinion about classes. Based on the analysis of the answers given by the respondents stated that children's participation in swimming lessons has a positive effect on their health, acts as a stimulant on their psychomotor development and strengthens the emotional bond between parents and children.

STRESZCZENIE

Celem pracy było poznanie sposobu realizacji programu zajęć nauki pływania dla niemowląt i małych dzieci oraz ocena wpływu aktywności ruchowej w wodzie na rozwój fizyczny i psychomotoryczny dzieci w wieku niemowlęcym i po niemowlęcym. W badaniu zastosowano formę sondażu diagnostycznego (ankiety) skierowanego do rodziców dzieci biorących udział w zajęciach pływania. Badaniami objęto 60 dzieci uczęszczających na zajęcia pływania dla niemowląt i małych dzieci w województwie śląskim w 2013/2014 roku. Badanie dotyczyło przede wszystkim oceny doboru zabaw i ćwiczeń zastosowanych w kursie nauczania pływania, rodzaju wykorzystywanych przyborów dydaktycznych, wieku dzieci uczestniczących w zajęciach, wpływu uczestnictwa w zajęciach na stan zdrowia dziecka i jego rozwój oraz opinii rodzica na temat zajęć. Na podstawie analizy odpowiedzi udzielonych przez respondentów stwierdzono, iż udział dzieci w zajęciach pływania pozytywnie wpływa na ich zdrowie, działa stymulująco na ich rozwój psychomotoryczny a także wzmacnia więzi emocjonalne pomiędzy rodzicami i dziećmi.

Artykuł zawiera 27030 znaków ze spacjami