

# SPATIO-TEMPORAL STRUCTURE OF KINDERGARTEN AS AN INCENTIVE TO ENGAGE IN PHYSICAL ACTIVITY AT PRESCHOOL AGE

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## Introduction

Insufficient physical activity of young children is seen as a problem in many developed countries and is believed to be a direct or indirect cause of many diseases. Numerous studies have been conducted on the effects of physical activity on the anthropological status of children, both in the world and in our country, which differ in type (longitudinal and transversal), in sample size, in level (regional, national, cross-national), examining anthropological status in relation to gender of the respondents, using different methods of measurement and showing the effects of various physical exercise programs (Milenković, 2018). We have focused our attention on those studies that relate to the level of physical activity of preschool children and address the importance of space and equipment that stimulate them to activities as well as the role of adults who work with them.

In their analysis of 27 studies of the correlation between physical activity and sedentary behaviour of young children, published between 1992 and 2015, Tong, Jones, and Okely (2016) identified 66 variables. The study review focused primarily on factors within the services provided by preschool institutions. The studies that addressed children's characteristics (18 studies) and physical environment factors (17 studies) identified the highest level of correlation. The strongest correlation with physical activity was found in relation to gender and age of children, the overall motor coordination of children, the provision of opportunities for physical activity and the characteristics of physical environment - open space (size, use and presence). A high positive correlation was found between physical activity and the external environment - possibility for children to play in that space and its size respectively. The authors emphasize the importance of the physical environment, professional teachers and quality intervention programs.

A study by Cardon et al. (Cardon, Van Cauwenberghe, Labarque, Haerens & De Bourdeaudhuij, 2008) aimed to find out how the physical environment factors in a preschool institution influence the level of physical activity of children during free play. The sample consisted of 415 boys and 368 girls, aged 5.3, from 39 randomly selected preschool institutions in Belgium (Flanders). Measurements were made from October 2006 to February 2007. Of the techniques, observation and pedometry were applied. Boys were found to take significantly more steps per minute than girls (65 versus 54). In both genders, more steps are significantly associated with fewer children per m<sup>2</sup> and shorter free play time. In boys, the hard surface of the playground was a borderline significant predictor of higher levels of physical activity. In girls, a higher level of activity was conditioned by reduced preschool teacher supervision. Playground markings, access to toys, the amount of play equipment and the presence of vegetation did not significantly affect the level of physical activity in both genders.

A study on the physical activity of children aged 3-5 (Hannon & Brown, 2008) aimed to determine whether playground accessories, installed on a preschool playground, led to an increase in physical activity intensity. The study, conducted in 2005 in Salt Lake City, involved 64 children. Activity intensity was measured with an accelerometer, five days before and five days after the introduction of new equipment on the playground. The results showed that the sedentary behaviour was significantly reduced but the activities of lower, medium and higher intensity increased, so the authors conclude that simple interventions and a little teacher training are enough to encourage children to exercise physically.

In relation to this study, which included a small sample of children, from only one preschool institution where the final measurement was made shortly after the intervention in the playground area, in another study by Cardon et al (Cardon, Labarque, Smits & De Bourdeaudhuij, 2009) there were 583 children, aged 5.3, from 40 preschool institutions and the final measurement followed 4-6 weeks after the intervention. Accelerometer measurement was also applied. Free play of children outdoors lasted 42 minutes on average (26 to 89 minutes). The initial measurement, made in November and December 2007, showed that children spent an average of 61.3% in sedentary activities, 25.6% of the time in low intensity activities and 11.2% in moderate and higher intensity activities. Within the sample, in 10 preschool institutions new play equipment was installed, in other 10, the play area was marked, in 10 of the institutions the space was marked and the equipment was provided, while 10 institutions represented a control group. The final measurement in February and March 2008 showed that installing accessories on playgrounds and marking play areas were not a sufficient incentive to increase the intensity of physical activity. The authors argued that these interventions were also likely to have been effective initially, as they had the effect of novelty for children, but the effects were diminished over time. The results of this study are in contrast to the results of the study with primary school children, which showed an increase in activity levels three months after the placement of play equip-

ment (Verstraete et al. 2006, in: Cardon et al. 2009, p. 338). Cardon et al conclude that pre-schoolers react differently in relation to older children and that pre-schoolers will need additional installation of new equipment, a more active attitude of caregivers during free children's play, more instruction and encouragement for active play, and more time for structured physical activities.

The purpose of the research conducted by Chow, McKenzie & Louie (2015) in Hong Kong was to assess the level of physical activity of preschool children, during structured physical education classes, and to evaluate the impact of selected characteristics (lesson context, duration and location; behaviour of the teachers; group size; spatial conditions relative to number of participants). In 2012, four pre-school institutions were selected for the research, based on their structural and programme differences: three have both indoor and outdoor physical education facilities and one indoors only. The age of the children involved in the study was 3-6 years and a sample of grades (five to six grades in three pre-school levels) was randomly selected for observation. Four children (2 boys and 2 girls) from each class were selected for observation. A total of 90 physical education classes were observed. Classes ranged from 9 to 30 minutes. Trained observers used SOFIT (System for Observing Fitness Instruction Time) to evaluate physical education classes, which were realized by 25 teachers (24 females and 1 male) with children, and whose work experience ranged from 2 to 28 years. Teachers were informed of the days on which they would be visited, but not of the precise behaviour that observers would code; they were asked not to alter the original content of the lecture or instructional methods. Significant discrepancies and ranges were observed both in terms of class organization and between these four preschool institutions. The activities primarily provided children with the opportunity to engage in basic movements, such as: jumping (39% of classes), crawling (32%), throwing (29%), and movement on the balance beam (22%), climbing (20%) and tricycle (18%). Few classes offered rhythmic activity (6%) or free play (2%); activities that included sand, water, and parachuting were only observed for one class each. On average, moderate- and higher-intensity activities in children lasted 9.9 minutes per class (49.9% of the class), during average classes, about 20 minutes, with more time in walking / moderate activity (6.1 minutes; 30.3 % of the class) than in higher intensity activities (3.8 minutes; 19.5% of the class). Girls were less active than boys (4.2 vs. 5.6 minutes / class; i.e. 6.2% less). In this study, the results showed that only 23% of observed physical education classes were held outdoors, and in a preschool institution that did not have open space, the highest proportion of moderate and higher intensity physical activity was observed (56%). In the authors' view, in order for children to do enough physical activity in smaller spaces, it is important for their teachers to be effective instructors, to use an activity-friendly curriculum and to have sufficient resources and equipment.

One study aimed to determine the effects of physical activity programs for young children was conducted in South Carolina and involved 379 children (188 in the intervention and 191 in the control group), from 16 preschool institutions, 4 years of age (Pate, Brown, Pfeiffer, Howie, Saunders, Addy & Dowda, 2016). The data were collected during 2008-2009 and 2009-2010 and analysed in the period 2012-2014. The intervention program included structured physical activities indoors, led by a preschool teacher (dancing, overcoming obstacles); structured and unstructured outdoor physical activities and physical activities integrated into the content of other teaching areas. Modifications were made in both social and physical settings. Changes in the social environment included verbal encouragement of activity by teachers/preschool teachers, participation of preschool teachers in physical activity, and inclusion of activities enjoyed by children (e.g. dancing, hunting games, ball games). The physical environment was changing as the number of different props (balls, music and scarves) increased. Emphasis is placed on the use of space, materials and the existing equipment to engage all children in physical activities. When comparing the results, the children in the intervention group (both boys and girls) spent more time in moderate and higher intensity physical activities than the control group during the day at the preschool institution. An analysis of the results in relation to the gender of the children revealed that the intervention program had a greater impact on the girls which has been explained by the fact that they had a lower level of physical activity at the beginning, so there was a greater scope of improvement. The findings of this study support the conclusion that flexible intervention, which trains preschool teachers to provide physical activity opportunities for children, can increase activity intensity and energy expenditure in preschool children.

The findings of the aforementioned research regarding the importance of the physical environment, enriching the environment in order to encourage children's activities, overcoming the limitations of small spaces are also significant from the perspective of practitioners who, with pre-school children in Serbia, implement different programming models and work in different conditions of the physical environment.

In pre-school institutions in Serbia, for the age of children from three years to school, the work program is implemented on the basis of Models A and B, which have been applied in the last two decades and the new Basics of pre-school education program "Years of the Rise" [Godine uzleta], the implementation of which has started in this working year, since September, in the territories of 6 cities and 5 municipalities (the two of which are in Belgrade). It is envisaged that the introduction of this program will take place in succession, so that from September 2022 it will be valid in all cities and municipalities in Serbia. The mentioned program and program models are based on different concepts that are reflected in the space-time structure of the kindergarten.

## Methods

In the conducted empirical research, a descriptive method was applied, with the aim of understanding, from the perspective of preschool teachers, the extent to which the spatio-temporal structure of the kindergarten enables children to engage in physical activity and develop their motor skills. The tasks of the research were aimed at finding out which kindergarten spaces are being used and how they are being restructured, in order to enable the realization of physical activities, how to stimulate the development of children's motor skills and who is involved in this process and to what extent time structure is flexible to match the physical needs of children. A survey has been applied as a research technique. The non-standardized questionnaire prepared for the purpose of this research contains 24 closed, open and combined questions, the first five of which relate to the sample structure - city/municipality, the environment of the kindergarten, age group, number of children in the group, programme model according to which the work takes place. The next group of 7 questions relates to the realization of morning workout for children and 8 questions relate to the planning and realization of organized/directed physical activities in indoor and outdoor kindergarten spaces - the participants, frequency, duration, spatial possibilities and equipment. Three questions focused on the assessment of children's motor skills - frequency of measurement, participants and possibilities to adapt physical exercises to individual children in order to stimulate underdeveloped motor skills. With the last question, of an open type, we wanted to find out the specifics in the way preschool teachers work so to stimulate the motor skills of children. Descriptive statistics was applied in the data processing and the frequency distribution and their percentage ratio are presented in tables.

The sample in the research is suitable and consists of 35 students of master vocational studies at the Preschool Teacher Training College in Šabac during the school year of 2019/20. The surveyed students work as preschool teachers in 15 pre-school state institutions, in 35 educational groups, of which 17 are in urban, 7 in suburban and 1 in rural environment.

Table 1. Sample structure by places - cities and municipalities

City/Municipality		f
Beograd	Voždovac	4
	Čukarica	3
	Lazarevac	3
	Novi Beograd	3
	Grocka	2
	Palilula	2
	Rakovica	1
	Stari grad	1
	Vračar	1
Šabac		5
Valjevo		3
Nova Varoš		3
Loznica		2
Bajina Bašta		1
Užice		1
Σ		35

Table 2. Age groups with which preschool teachers work and number of children

Age group		f	Number of children enrolled (range)
Older nursery (2-3 years)		2	19-28
Younger nursery		11	14-35
Middle kindergarten		7	16-44
Older kindergarten		6	27-48
Preparatory preschool		6	10-49
Mixed	Age 4-5 years	2	35-36
	Age 3-6 years	1	33
Σ		35	

The number of children in educational groups, as envisaged by the Law on Preschool Education (2010; 2017; 2019. Article 30, 31), is as follows: 2 - 3 years (16); 3 - 4 years (20); 4 - 5.5 years (24); 5.5 years until school (26); mixed group 3 - 6 years (20). Up to 20% increase of the number of children in the group is allowed. Based on the data obtained from the survey, it is observed that the educational groups in practice are more numerous and as many as 65.72% of the educational groups in which the surveyed preschool teachers work exceed the statutory number; in 9 educational groups the number ranges from 33 to 40 and in 4 educational groups it is above 40. In these groups there are three preschool teachers and the groups are located in larger study rooms.

Table 3. Programs and program models applied in educational groups

Program/program model	f
Program of care for children from 6 months to 3 years	1
Model A	16
Model B	15
Basics of the program "Years of the Rise"	3
$\Sigma$	35

In most cities and municipalities in Serbia, educational work is carried out on the basis of the Rule-book on General Principles of Preschool Education (2006), which consists of the Program of care for children from 6 months to 3 years, programs for children from 3 to 5.5 years and preparatory preschool program, based on two models with common educational goals and principles. Model A "gravitates towards the open system of education and action development of the programs depending on the interests of children, and Model B has the characteristics of a cognitive-developmental program and elaborated educational goals, tasks of preschool teachers and types of activities, among which the preschool teacher can choose and elaborate them, depending on the needs, opportunities and interests of children" (General Basics of Preschool Program, 2006, p. 24). An analysis of these programming models in relation to the "competency and power" dimensions indicates that in Model A, a child is understood as a creature with developmental and individual needs and interests, who has conditional power, and in Model B, as a deficient person in relation to an adult and does not have a power, and adults apply the program (Krnjaja and Pavlovic Breneselovic, 2013, p. 220). The Basics of Preschool Education Program "Years of the Rise" (2018) emphasize the child's competencies and appreciation of child's initiative in the educational process as well as the actions of adults for the well-being of the child.

## Results

The results of the research showed that morning exercise makes the largest percentage of daily workout (77.14%). The space in which it takes place is usually the study room and then the hall or courtyard. According to more than half of the answers (57.14%) it is realized after the morning gathering of children, and lasts up to 15 minutes (88.57%).

Table 4. Frequency of morning exercise on a weekly basis

Frequency of morning exercise	f	%
Everyday morning exercise	27	77.14
3 to 4 times a week	4	11.43
2-3 times a week	4	11.43
$\Sigma$	35	100

Table 5. Morning exercise area

Area for the morning exercise	f	%
Always in the study room	8	22.86
In the study room or in the hall	8	22.86
In the study room or in the courtyard	11	31.43
Always in the hall	3	8.57
In the study room, hall and courtyard	5	14.28
$\Sigma$	35	100

Table 6. Morning exercise duration

Morning exercise duration	f	%
Up to 10 minutes	15	42.86
10-15 minutes	16	45.71
15-20 minutes	4	11.43
$\Sigma$	35	100

Table 7. Period during the work day when morning exercise takes place

Period during the work day	f	%
Always before breakfast	20	57.14
Mostly before breakfast, sometimes during the morning	6	17.14
Always during the morning	9	25.72
$\Sigma$	35	100

The largest number of preschool teachers (65.72%) strive for children to perform all movements correctly, but this is also conditioned by the size of the group, so they are not always able to do so. There are equal numbers (17.14%) of those who are persistent in this, and they are preschool teachers with smaller groups of children as well as those with very numerous groups, who consider it is important for children to participate, regardless of the proper movement.

Table 8. Children's participation during morning exercise

Children's participation	f	%
It is important for all children to become involved, regardless of whether they perform all movements correctly	6	17.14
As much as possible, because of the size of the group, we strive for the children to perform all movements correctly	23	65.72
We are persistent in striving for all children to perform all movements properly	6	17.14

Before answering the question on the participants in the implementation, it was important for us to find out how many preschool institutions in our sample have a physical education associate. Responses indicated that these were only 5 institutions and out of 13 preschool teachers working in these institutions, 9 indicated that a physical education associate was included in the planning and implementation of the morning physical exercise.

Table 9. Who realizes the morning exercise

Participation in planning and realization of the morning exercise	f	%
Preschool teachers	25	71.42
Preschool teachers in cooperation with the expert associate	9	25.72
Someone else participates - parents	1	2.86
$\Sigma$	35	100

The answers indicate that usually preschool teachers plan and design the contents of organized/directed physical activities (71.42%); in institutions that have a professional associate for physical education, he or she is involved with the preschool teachers (14.29%) or has a dominant role in this process (11.43%). According to one preschool teacher's (2.86%) answer a parent also participates. Orientation to collaboration with the environment is one of the common features of Models A and B, so it is very important that preschool teachers, primarily among parents, find associates who are willing to engage in educational work.

Table 10. Planning and designing content for organized/directed physical activities

Participants in planning and designing of the content	f	%
Preschool teachers	25	71.42
Professional physical education associate	4	11.43
Preschool teacher in cooperation with professional physical education associate	5	14.29
Preschool teacher in cooperation with parents	1	2.86
Σ	35	100

Table 11. Organized/directed physical activities on a weekly basis

Organized/directed physical activities	f	%
Once a week	9	25.72
Twice a week	13	37.14
Integrated into the content of other areas	13	37.14
Σ	35	100

In an effort to find out from the preschool teachers how well the structure of the kindergarten space is suitable for physical activity, the first question relates to the study room where children spend the most time.

Table 12. Spatial opportunities for physical activity in the study room

Space for physical activities in the study room	f	%
Part of the space is always free and sufficient for physical activity	22	62.86
Changes in space are needed / moving furniture/	13	37.14
Σ	35	100

Although a higher percentage of answers (62.86%) indicates that the space in the study room is sufficient for physical activity, more than a third of the preschool teachers surveyed have to make changes in the space by moving furniture elements so that children can move about freely.

Table 13. Which indoor spaces, other than study rooms, are used for physical activity

Indoor kindergarten facilities (more answers possible)	f	%
Central Hall	9	21.43
Hallways	9	21.43
Gym	16	38.09
Terrace	3	7.14
Nothing apart from the study room	5	11.91
Σ	42	100

Apart from the study room, the gym is most used, followed by the central hall and hallways; 5 respondents (11.91%) answered that they had no opportunity to use any other indoor space. Some kindergartens do not have a gym or it has changed its purpose - it has been converted into two study rooms (1 kindergarten in this sample), but this also affects the quality of other activities.

Table 14. Space and equipment of the kindergarten yard

Kindergarten yard	1	2	3	4	5	Average grade
Spacious, it allows for smooth movement, suitable for various activities	/	4	7	11	13	3.94
Equipped with a variety of appliances	2	11	9	6	7	3.14
The devices are safe and all children can use them	5	9	7	7	7	3.06
There are enough grassy areas	6	1	9	6	13	3.54
There is a court/s for group sports	11	10	7	3	4	2.40
The space is enriched and adapted using different equipment and devices	/	2	12	11	10	3.83

The question related to the space and equipment of the yard contained six statements and the preschool teachers made a five-point assessment. The highest average grade refers to the surface of the yard, which allows for the stay and different activities of children (3.94), and preschool teachers seek to adapt the spaces in the yard to activities using different equipment and devices (3.83). However, although there are grass courts, there are not always enough of them or there are none at all (3.54), there are no courts for group sports (2.40) and even the devices are not safe enough (3.06).

Table 15. Physical outdoor activities within the daily activities schedule

Outdoor activities in relation to the schedule of daily activities	f	%
The schedule is always respected regardless of the children's wishes to extend the stay	14	40.00
We occasionally deviate from the schedule so as not to interrupt the game	10	28.57
We adapt the schedule to children's interests	11	31.43
Σ	35	100

The rhythm of the day in a kindergarten involves changing different types of activities - routine (meals, sleeping, maintaining hygiene), program activities and games. Greater flexibility of time organization is a feature of Model A and the Basics of the Program of Pre-school Education, which means that respecting the initiative and interests of children, the activity they are engaging in should not be interrupted, nor should there be an "idle" waiting time for a certain, pre-planned time to start a new activity. Responses of preschool teachers, who use Model B, to always respect the schedule, are expected, but in our sample this option was also chosen by Model A preschool teachers, and it is of the highest rate (40.00%).

Table 16. Time spent outdoors during early fall, spring and summer

Duration of stay outdoors	f	%
30-60 minutes	6	19.35
1-2 hours	13	41.94
More than 2 hours	12	38.71
Σ	31	100

Table 17. Time spent outdoors during late fall and winter

Duration of stay outdoors	f	%
Up to 30 minutes	14	46.66
30 – 60 minutes	9	30.00
1-2 hours	7	23.34
Σ	30	100

It is anticipated that the answers about the length of stay outdoors will vary and will be conditioned



by the season and meteorological conditions. The preschool teachers who did not indicate the duration, provided descriptive answers - "it depends on children's interests", "when the weather is dry". Only in the answers of two preschool teachers there is no difference in duration regarding the seasons, namely, children spend 1-2 hours outdoors.

Table 18. Ways of supplementing and enriching devices and equipment

<b>In what way is the fund of devices and equipment used by children during physical activities enriched and supplemented?</b>	<b>f</b>	<b>%</b>
They are procured by the institution	27	29.35
They are made by preschool teachers	21	22.83
They are made by preschool teachers and parents at workshops	18	19.56
They are made by preschool teachers with children during the activity	12	11.96
Purchased/donated by parents	11	13.04
They are bought by preschool teachers	2	2.17
They borrow them from the school of sports	1	1.09
$\Sigma$	35	100

Preschool teachers are, in most cases, the ones who enrich the fund of equipment and devices used for physical activity, whether they make it themselves (22.83%), with parents at workshops (19.56%) or with children during various activities (11.96%).

Table 19. Frequency of measuring children's motor skills

<b>How many times a year there is the assessment / measurement of children's motor skills</b>	<b>f</b>	<b>%</b>
Twice a year, at the beginning and end of the work year	19	54.29
Once a year (in September)	2	5.71
3-4 times a year	14	40.00
$\Sigma$	35	100

The assessment of children's motor skills is most often done at the beginning and end of the work year (54.29%) and 3-4 times a year (40.00%).

Table 20. Who assesses / measures children's motor skills

<b>Who assesses / measures children's motor skills</b>	<b>f</b>	<b>%</b>
Preschool teachers	24	68.57
Physical education professional associate	1	2.86
Preschool teachers by instruction / in collaboration with a physical education professional associate	8	22.86
Physical education team members	2	5.71
$\Sigma$	35	100

Measurement of children's motor skills is most often realized by preschool teachers (68.57%), and in those institutions that have a professional associate for physical education, he or she joins preschool teachers or gives instructions and participates in the physical education team.

Table 21. Adaptation of exercise in order to stimulate underdeveloped motor skills

<b>To what extent preschool teachers adapt physical exercises</b>	<b>f</b>	<b>%</b>
Due to the number of children in the group they cannot be adjusted, everyone does the same exercises	13	37.14
They occasionally adjust the exercises to the needs of individual children or groups of children	18	51.43
Carry out special programs/exercises with children who have reduced motor skills	4	11.43
$\Sigma$	35	100



The majority of preschool teachers (51.43%) occasionally do exercises with children who have underdeveloped individual motor skills, while 37.14% are not able to do so because of the number of children, so everyone does the same exercises; of 4 preschool teachers who responded to implement programs / exercises that are adapted for children, 3 preschool teachers work in institutions that have a professional associate for physical education, cooperate with him/her in the planning, implementation of physical activities and assessment of children's motor skills; one preschool teacher independently evaluates when it is necessary to act because there is no professional associate at his / her institution.

The last question in the questionnaire was open-ended, and we expected the preschool teachers to indicate what was specific about their kindergarten, when it came to space use and how their work was done to encourage the development of children's motor skills, if they felt that it was not covered. Fifteen preschool teachers responded in more detail, describing the situations they encountered in practice. The potentials of the local community, which allow the use of other spaces in the immediate vicinity of the kindergartens - sports fields, forest, park with equipped children's playground, influence to improve the conditions for realization of motor activities of children.

When find irregular posture in children and the most commonly reported disorders are postural disorders of the spinal column and lowered feet, preschool teachers seek to influence by the choice of exercises that are performed in groups or individually - exercises for the muscles of the arm and shoulder, abdominal and back muscles; walking bare feet on uneven surfaces, competing in fast and proper walking on different surfaces (inside, outside of the feet, on the toes, on the heel); marble exercises (catching the marble with the toe and inserting it into the bowl).

Preschool teachers also say that the use of stairs represents a problem for a certain number of children, so they work with them individually, first holding them by hand and providing verbal support until they are able to climb and descend independently; the fear of climbing and sliding down the slide is overcome by the inclusion of other children, who during this activity encourage their friends by singing their favourite songs. They find as many reasons as possible to use stairs and climbers in the yard. The preschool teachers try to act on the parents as well, by pointing to a particular problem and the success of the action depends on whether they want to accept the suggestion and turn to the expert or deny its existence.

## Discussion

In relation to the first research task, to identify which kindergarten spaces are used for the physical activities of children and how they are being restructured, the results showed that the study room is most commonly used for the morning exercise and then the gym or yard. The space in the study room is generally sufficient for physical activity, although more than a third of the preschool teachers surveyed have to make changes to the space by moving furniture elements to allow children to move around freely. During the day, besides the study room, other indoor spaces are used for physical activities - the gym, the central hall and the hallways, and in this sample it was found that in some kindergartens they were unable to use other indoor spaces or even do not have a gym or it was turned into study rooms. The kindergartens' yards are mostly spacious, there are grassy areas, but not always enough, there are no grounds for group sports, and the devices are not always safe. The preschool teachers try to adapt the spaces in the yard to the activities by using different equipment and devices. In the enrichment of the fund of equipment and devices are mostly involved preschool teachers, who make them themselves or in cooperation with the parents, at workshops or with children in various activities. The potential of the local community and the use of other spaces outside the kindergarten influence to improve the conditions for the realization of motor activities of children.

The second research task was related to the ways of planning the stimulation of the development of motor skills and participants in this process. Planning of educational work should be based on continuous observation, listening to children and monitoring their needs and interests (Rulebook on the quality standards of the institution, 2018). Most often, the preschool teachers are the ones who plan and create the physical activity program and assess the motor skills of children (2-4 times during the working year), and only one quarter of the surveyed preschool teachers in this process cooperate with a professional associate - a teacher for physical education. Not all preschool institutions have professional associates for physical education. The ratio of educational groups to the number of professional associates is determined by the Rulebook on closer conditions for the establishment, start-up and pursuit of the activity of a preschool institution (2019), which stipulates that an institution with more than 48 educational groups of full-day and half-day stay has a professional associate of another profile, namely an educator for fine arts, music and physical education and speech therapist. Even when employed at a preschool institution, the question arises as to how effective his/her work can be in promoting the development of the motor skills of children, in an institution with a large number of kindergarten facilities and educational groups? Consequences of sedentary lifestyles are increasingly evident at preschool age. Authors who measured the anthropological status of preschool children aged 6 and 7 years and received worrying results, point to the great importance of prevention and corrective exercises, which can be implemented as part of kindergarten activities (Milosevic and Obradovic, 2008; Obradovic and Milosevic, 2008; Romanov, Stupar, Medjedovic and Brkin). A small number of preschool teachers implement special programs with children having reduced motor abilities (11.43%), half of the respondents

occasionally adjust exercises (51.43%) and 37.14% are not able to do so due to the number of children in educational groups.

The third research task focused on the temporal structure, that is, how flexible it is to accommodate to children's physical activity needs. Morning physical exercise mainly occurs daily (77.14% of responses), when integrated into the contents of other areas it is also present daily, while directed physical activities are performed twice a week and one quarter of the total number of responses shows that it is only once a week. Flexibility in the rhythm of the day and in the realization of activities is one of the indicators of the quality of work, which implies that children should be given different opportunities to play and learn (Rulebook on quality standards of institutions, 2018). When comparing the results of the survey, the highest percentage of responses (40.00%) indicates that it is more important for preschool teachers to respect the schedule, approximately one-third of the teachers adjust the schedule to children's interests, and 28.57% occasionally deviate from the schedule. The time children spend outdoors is dependent on the seasons and meteorological conditions, during the winter months it is shorter, in most responses it lasts 30-60 minutes and in the early autumn, spring and summer 1-2 hours or longer. Only in the answers of two preschool teachers there is no difference in duration compared to the seasons, children spend 1-2 hours outdoors.

## Conclusion

The results of the research show that there is a discrepancy regarding the working conditions, the number of children in educational groups, spatial capacities, equipment. Preschool teachers strive to meet the requirements of stimulating the development of children's motor skills by making minor changes and adjusting the interior spaces of the kindergarten as well as using the available open spaces. They are aware of the importance of physical activities at an early age, which are present daily in educational work, but not sufficiently and generally without the possibility of individualizing approaches that would continuously, through special programs, stimulate the motor skills of children who are less pronounced. Solutions to these problems could be expected in systemic changes that would lead to the inclusion of a larger number of physical education teaching assistants in the educational process, who, along with preschool teachers, children and parents, would contribute to the development of the program.

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# PROSTORNO-VREMENSKA STRUKTURA DEČJEG VRTIČA KAO PODSTICAJ ZA BAVLJENJE FIZIČKIM AKTIVNOSTIMA NA PREDŠKOLSKOM UZRASTU

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## Uvod

Nedovoljna fizička aktivnost dece ranih uzrasta uočava se kao problem u velikom broju razvijenih zemalja i veruje se da to može da bude direktan ili indirektan uzrok mnogih bolesti. Vršena su brojna istraživanja o efektima fizičkih aktivnosti na antropološki status dece, i u svetu i kod nas, koja se razlikuju po tipu (longitudinalna i transferzalna), po veličini uzorka, nivou (regionalna, nacionalna, međunacionalna), koja ispituju antropološki status u odnosu na pol ispitanika, u kojima su primenjeni različiti načini merenja, prikazuju efekti raznih programa fizičkog vežbanja (Milenković, 2018). Pažnju smo usmerili na ona istraživanja koja se odnose na nivo fizičke aktivnosti dece predškolskog uzrasta, bave se značajem prostora i opreme koja ih podstiče na aktivnosti kao i ulogom odraslih koji sa njima rade.

Tong, Džons i Oukli (Tonge, Jones & Okely 2016) su u svojoj analizi 27 studija o korelaciji između fizičkih aktivnosti i sedentarnog ponašanja dece ranih uzrasta, objavljenih u periodu od 1992. do 2015. godine, identifikovali 66 varijabli. Pregled studija se prvenstveno fokusirao na faktore u okviru usluga koje pružaju predškolske ustanove. U studijama koje su se bavile karakteristikama dece (18 studija) i faktorima fizičkog okruženja (17 studija) ustanovljeno je da ima najviše povezanosti. Najsnažnija povezanost sa fizičkom aktivnošću ustanovljena je u odnosu na pol i godine deteta, ukupnu motoričku koordinaciju dece, pružanje mogućnosti za fizičku aktivnost i odlike fizičkog okruženja – otvorenog prostora (veličina, upotreba i prisustvo). Ustanovljena je visoka pozitivna korelacija fizičke aktivnosti i spoljašnjeg okruženja – mogućnost da se deca igraju u tom prostoru i njegova veličina. Autori naglašavaju značaj fizičkog okruženja, stručnih nastavnika i kvalitetnih interventnih programa.

Istraživanje Kardona i saradnika (Cardon, Van Cauwenberghe, Labarque, Haerens & De Bourdeaudhuij, 2008) imalo je za cilj da ustanovi kako faktori fizičkog okruženja u predškolskoj ustanovi utiču na nivo fizičkih aktivnosti dece tokom slobodne igre. Uzorak je činilo 415 dečaka i 368 devojčica, uzrasta 5.3 godina, iz 39 nasumično izabranih predškolskih ustanova u Belgiji (u Flandriji). Merenja su vršena u periodu od oktobra 2006. do februara 2007. godine. Od tehnika je primenjeno posmatranje i pedometrija. Ustanovljeno je da dečaci u minuti naprave znatno više koraka od devojčica (65 prema 54). Kod oba pola je veći broj koraka značajno povezan sa manjim brojem dece po m<sup>2</sup> i sa kraćim vremenom slobodne igre. Kod dečaka je tvrda podloga igrališta bila granični značajan prediktor za viši nivo fizičke aktivnosti. Kod devojčica je viši stepen aktivnosti bio uslovljen smanjenim nadzorom vaspitača. Oznake na igralištu, pristup igračkama, količina opreme za igru i prisustvo vegetacije nisu značajno uticali na nivo fizičke aktivnosti kod oba pola. Studija o fizičkoj aktivnosti dece uzrasta 3-5 godina (Hannon & Brown, 2008) imala je za cilj da utvrdi da li dodatna oprema za igru, postavljena na dečjem igralištu predškolske ustanove, dovodi do povećanja intenziteta aktivnosti. U istraživanju, koje je realizovano 2005. godine u Solt Lejk Sitiju, učestvovalo je 64 dece. Intenzitet aktivnosti je meren akcelerometrom, pet dana pre i pet dana posle unošenja nove opreme na igralište. Rezultati su pokazali da se znatno smanjilo sedentarno ponašanje a povećale aktivnosti manjeg, srednjeg i većeg intenziteta pa autori zaključuju da su dovoljne jednostavne intervencije i malo obuke vaspitača da se deca podstaknu na zdrave fizičke aktivnosti.

U odnosu na ovo istraživanje, kojim je obuhvaćen mali uzorak dece, samo iz jedne predškolske ustanove a finalno merenje je izvršeno ubrzo po intervenciji u prostoru dečjeg igrališta, u drugom istraživanju Kardona i saradnika (Cardon, Labarque, Smits & De Bourdeaudhuij, 2009) obuhvaćeno je 583 dece, uzrasta 5.3 godina, iz 40 predškolskih ustanova a finalno merenje je usledilo 4-6 nedelja posle intervencije. Takođe je primenjeno merenje akcelerometrom. Slobodna igra dece na otvorenom prostoru je u proseku trajala 42 minuta (26 do 89 minuta). Inicijalno merenje, izvršeno u novembru i decembru 2007. godine, pokazalo je da su deca u proseku provodila 61.3% u sedentarnim aktivnostima, 25.6% vremena u aktivnostima manjeg intenziteta i 11.2% u aktivnostima umerenog i većeg intenziteta. U okviru uzorka, u 10 ustanova je postavljena nova oprema za igranje, u 10 je obeležen prostor za igru, u 10 ustanova je obeležen prostor i data oprema, dok je 10 ustanova predstavljalo kontrolnu grupu. Finalno merenje u februaru i martu 2008. godine je pokazalo da postavljanje dodatne opreme na dečjim igralištima i markiranje prostora za igru, nisu dovoljan podsticaj za povećanje intenziteta fizičkih aktivnosti. Autori iznose mišljenje da su verovatno i ove intervencije takođe bile efikasne u početku, jer su imale efekat novine za decu ali su efekti tokom vremena umanjeni. Rezultati ove studije su u suprotnosti i sa rezultatima istraživanja sa decom osnovnoškolskog uzrasta, koje je pokazalo povećanje nivoa aktivnosti tri meseca posle postavljanja opreme za igru (Verstraete et al. 2006, prema: Cardon et al. 2009, str. 338). Kardon i saradnici zaključuju da različito reaguju predškolska deca u

odnosu na stariji uzrast i da će predškolicima biti potrebno dodatno unošenje nove opreme, aktivniji odnos vaspitača koji vrše nadzor tokom slobodne dečje igre, više uputstava i ohrabrenja za aktivnu igru kao i više vremena za strukturirane fizičke aktivnosti.

Svrha istraživanja koje su u Hong Kongu sproveli Čau, Mekenzi i Lui (Chow, McKenzie & Louie, 2015) bila je procena nivoa fizičke aktivnosti predškolske dece, tokom strukturiranih časova fizičkog vaspitanja i procena uticaja odabranih karakteristika (kontekst časova, trajanje i lokacija; ponašanje nastavnika; veličina grupe; prostorni uslovi u odnosu na broj učesnika). Za istraživanje, realizovano 2012. godine, izabrane su četiri predškolske ustanove, na osnovu njihovih strukturnih i programskih razlika: tri imaju i zatvoreni i otvoreni prostor za fizičko vaspitanje a jedna samo zatvoreni prostor. Uzrast dece koja su bila uključena u istraživanje je 3-6 godina a uzorak razreda (pet do šest razreda u tri nivoa predškolskog uzrasta) nasumično je odabran za posmatranje. Odabrano je po četvoro dece (2 dečaka i 2 devojčice) iz svakog razreda za posmatranje. Ukupno je posmatrano 90 časova fizičkog vaspitanja. Časovi su trajali u rasponu od 9 do 30 minuta. Obučeni posmatrači koristili su SOFIT (System for Observing Fitness Instruction Time) za procenu časova fizikog vaspitanja, koje je sa decom realizovalo 25 nastavnika (24 žene i 1 muškarac), čije se radno iskustvo se kretalo od 2 do 28 godina. Nastavnici su bili obavešteni o danima kada će ih posetiti, ali ne o preciznom ponašanju koje će posmatrači kodirati; od njih se tražilo da ne menjaju originalni sadržaj predavanja ili instruktivne metode. Ispoljena su značajna odstupanja i rasponi kako u pogledu organizacije časova tako i između ove četiri predškolske ustanove. Aktivnosti su deci prvenstveno pružale mogućnost da se bave osnovnim pokretima i to: skakanje (39% časova), puzanje (32%), bacanje (29%), kretanje na gredi za ravnotežu (22%), penjanje (20%) i tricikl (18%). Mali broj časova je ponudio ritmičke aktivnosti (6%) ili slobodnu igru (2%); aktivnosti koje su uključivale pesak, vodu i igru padobranom zapažene su samo na po jednom času. U proseku, aktivnosti umerenog i većeg intenziteta su kod dece trajale 9,9 minuta po času (49,9% časa), tokom prosečnih časova oko 20 minuta, sa više vremena u hodanju / umerenoj aktivnosti (6,1 minut; 30,3% časa) nego u aktivnostima većeg intenziteta (3,8 minuta; 19,5% časa). Devojčice su bile manje aktivne od dečaka (4,2 naspram 5,6 minuta / po času; 6,2% manje). U ovoj studiji rezultati su pokazali da je samo 23% posmatranih časova fizičkog vaspitanja održavano na otvorenom prostoru, a u predškolskoj ustanovi koja nije imala otvoreni prostor, zabeležen je najveći procenat fizičkih aktivnosti umerenog i većeg intenziteta (56%). Po mišljenju autora, da bi deca ostvarila dovoljno fizičkih aktivnosti u manjim prostorima, važno je da njihovi nastavnici budu efikasni instruktori, da koriste nastavni plan i program koji podstiče na aktivnosti i imaju dovoljno sredstava i opreme.

Jedno od istraživanja, sa ciljem da se ustanove efekti programa fizičkih aktivnosti za decu ranih uzrasta, izvršeno je u Južnoj Karolini i učestvovalo je 379 dece (188 u interventnoj i 191 u kontrolnoj grupi), iz 16 predškolskih ustanova, uzrasta 4 godine (Pate, Brown, Pfeiffer, Howie, Saunders, Addy & Dowda, 2016). Podaci su prikupljeni tokom 2008–2009. i 2009–2010. godine i analizirani u periodu 2012–2014. godine. Interventni program je obuhvatao strukturirane fizičke aktivnosti u zatvorenom prostoru, pod vođstvom vaspitača (ples, savladavanje prepreka); strukturirane i nestrukturirane fizičke aktivnosti na otvorenom prostoru i fizičke aktivnosti integrisane u sadržaje drugih oblasti. Modifikacije su izvršene i u socijalnom i fizičkom okruženju. Promene u socijalnom okruženju uključivale su verbalno podsticanje na aktivnost od strane nastavnika/vaspitača, učešće vaspitača u fizičkoj aktivnosti i uključivanje aktivnosti u kojima uživaju djeca (npr. ples, igre lova, igre loptom). Fizičko okruženje se menjalo tako što je povećan broj različitih rekvizita (lopte, muzika, marame). Akcenat je stavljen na upotrebu prostora, materijala i postojeće opreme, da bi se sva deca uključivala u fizičke aktivnosti. Kada se uporede rezultati, deca iz interventne grupe (i dečaci i devojčice) su, tokom dana u predškolskoj ustanovi, provela više vremena u fizičkim aktivnostima umerenog i većeg intenziteta, u odnosu na kontrolnu grupu. Analiza rezultata u odnosu na pol dece otkrila je, da je interventni program imao veći uticaj na devojčice a objašnjenje je da su one imale niži stepen fizičkih aktivnosti na početku pa je bilo i više prostora za poboljšanje. Nalazi ove studije podržavaju zaključak da fleksibilna intervencija, koja obučava vaspitače da pruže deci mogućnosti za fizičku aktivnost, može povećati intenzitet aktivnosti i potrošnju energije kod dece predškolskog uzrasta.

Nalazi navedenih istraživanja koji se odnose na značaj fizičkog okruženja, bogaćenje sredine u cilju podsticanja dečje aktivnosti, prevazilaženje ograničenja malih prostora, značajni su i iz ugla praktičara, koji sa predškolskom decom u Srbiji realizuju različite programske modele i rade u različitim uslovima fizičkog okruženja.

U predškolskim ustanovama u Srbiji, za uzrast dece od tri godine do polaska u školu, program rada se realizuje na osnovu Modela A i B, koji se primenjuju u poslednje dve decenije i novih Osnova programa predškolskog vaspitanja i obrazovanja "Godine uzleta" sa čijom primenom se započelo u ovoj radnoj godini, od septembra meseca, na teritorijama 6 gradova i 5 opština (od toga su dve na teritoriji Beograda). Predviđeno je da se uvođenje ovog programa odvija sukcesivno, tako da bi od septembra 2022. godine bio važeći u svim gradovima i opštinama u Srbiji. Navedeni program i programski modeli zasnovani su na različitim koncepcijama koje se odražavaju i na prostorno-vremensku strukturu vrtića.



## Metode

U sprovedenom empirijskom istraživanju primenjena je deskriptivna metoda, sa ciljem da se, iz perspektive vaspitača, sagleda u kojoj meri prostorno-vremenska struktura vrtića omogućava deci da se bave fizičkim aktivnostima i razvijaju svoje motoričke sposobnosti. Zadaci istraživanja su bili usmereni na to da se sazna koji se prostori vrtića koriste i na koji način se restrukturiraju, da bi se omogućilo realizovanje fizičkih aktivnosti, na koji način se planira stimulisanje razvoja motoričkih sposobnosti dece i ko je uključen u ovaj proces, koliko je vremenska struktura fleksibilna da bi se uskladila sa potrebama dece za fizičkim aktivnostima. Od istraživačkih tehnika je primenjeno anketiranje. Nestandardizovani upitnik, sačinjen za potrebe ovog istraživanja, sadrži 24 pitanja zatvorenog, otvorenog i kombinovanog tipa, od kojih se prvih pet odnose na strukturu uzorka – grad/opština, sredina u kojoj se nalazi dečji vrtić, uzrasna grupa, broj dece u grupi, programski model po kome se odvija rad. Naredna grupa od 7 pitanja, odnosi se na realizaciju jutarnjeg vežbanja dece a 8 pitanja se odnosi na planiranje i realizaciju organizovanih/usmerenih fizičkih aktivnosti u zatvorenim i otvorenim prostorima vrtića – ko su učesnici, učestalost, trajanje, prostorne mogućnosti, opremljenost. Tri pitanja su bila usmerena na procenu motoričkih sposobnosti dece – učestalost merenja, učesnici, mogućnosti da se fizičke vežbe prilagođavaju pojedinoj deci u cilju stimulisanja nedovoljno razvijenih motoričkih sposobnosti. Poslednjim pitanjem, otvorenog tipa, želeli smo da saznamo specifičnosti u načinu rada vaspitača, na podsticanju motoričkih sposobnosti dece. U obradi podataka je primenjena deskriptivna statistika a distribucija frekvencija i njihov procentualni odnos prikazan je tabelarno.

Uzorak u istraživanju je prigodan i čini ga 35 studenata master strukovnih studija u Visokoj školi strukovnih studija za vaspitače u Šapcu, školske 2019/20. godine. Anketirani studenti rade kao vaspitači u 15 predškolskih državnih ustanova, u 35 vaspitnih grupa, od kojih je 17 u gradskoj sredini, 7 u prigradskoj i 1 u seoskoj sredini.

Tabela 1. Struktura uzorka po mestima - gradovi i opštine

Grad/Opština		f
Beograd	Voždovac	4
	Čukarica	3
	Lazarevac	3
	Novi Beograd	3
	Grocka	2
	Palilula	2
	Rakovica	1
	Stari grad	1
	Vračar	1
Šabac		5
Valjevo		3
Nova Varoš		3
Loznica		2
Bajina Bašta		1
Užice		1
Σ		35

Tabela 2. Uzrasne grupe sa kojima rade vaspitači i broj dece

Uzrasna grupa		f	Broj upisane dece (raspon)
Starija jaslenska (2-3 godine)		2	19-28
Mlada vrtićka		11	14-35
Srednja vrtićka		7	16-44
Starija vrtićka		6	27-48
Pripremna predškolska		6	10-49
Mešovita	Uzrast 4-5 godina	2	35-36
	Uzrast 3-6 godina	1	33
Σ		35	

Broj dece u vaspitnim grupama, predviđen Zakonom o predškolskom vaspitanju i obrazovanju (2010; 2017; 2019. član 30, 31) je sledeći: 2 – 3 godine (16); 3 – 4 godine (20); 4 – 5,5 godina (24); 5,5 godina do polaska u školu (26); mešovita grupa 3 – 6 godina (20). Dozvoljeno je povećanje broja dece u grupi do 20%. Na osnovu podataka dobijenih anketiranjem, uočava se da su vaspitne grupe u praksi brojnije a čak 65.72% vaspitnih grupa u kojima rade anketirani vaspitači prelazi zakonski predviđen broj; u 9 vaspitnih grupa se broj kreće između 33 i 40 a u 4 vaspitne grupe je iznad 40. U ovim grupama radi po tri vaspitača a grupe su smeštene u većim radnim sobama.

Tabela 3. Programi i programski modeli koji se primenjuju u vaspitnim grupama

Program/programski model	f
Program nege i vaspitanja dece do 3 godine	1
Model A	16
Model B	15
Osnove programa „Godine uzleta“	3
Σ	35

U većini gradova i opština u Srbiji, vaspitno-obrazovni rad se odvija na osnovu Pravilnika o opštim osnovama predškolskog vaspitanja (2006), koji sačinjavaju Program nege i vaspitanja dece od 6 meseci do 3 godine, programi za decu od 3 do 5.5 godina i pripremni predškolski program, na osnovu dva modela sa zajedničkim vaspitno-obrazovnim ciljevima i načelima. Model A „gravitira otvorenom sistemu vaspitanja i akcionom razvijanju programa zavisno od interesovanja dece a Model B ima karakteristike kognitivno-razvojnog programa i razrađene vaspitno-obrazovne ciljeve, zadatke vaspitača i tipove aktivnosti, među kojima vaspitač može da bira i razrađuje ih, zavisno od potreba, mogućnosti i interesovanja dece“ (Opšte osnove predškolskog programa, 2006, str.24). Analiza ovih programskih modela u odnosu na dimenzije „kompetentnost i moć“ ukazuje da se dete u Modelu A shvata kao biće sa razvojnim i individualnim potrebama i interesovanjima, koje ima uslovnu moć a u Modelu B, kao biće u deficitu u odnosu na odraslu osobu i nema moć, odrasli primenjuje program (Krnjaja i Pavlović Breneselović, 2013, str. 220). Osnove programa predškolskog vaspitanja i obrazovanja „Godine uzleta“ (2018) naglašavaju kompetencije deteta i uvažavanje dečje inicijative u vaspitno-obrazovnom procesu kao i delovanje odraslih za dobrobit deteta.

## Rezultati

Rezultati istraživanja su pokazali da se jutarnje telesno vežbanje, u najvećem procentu odvija svakodnevno (77.14%). Prostor u kojem se odvija je najčešće radna soba a zatim sala ili dvorište. U više od polovine odgovora (57.14%) realizuje se po jutarnjem okupljanju dece i traje do 15 minuta (88.57%).

Tabela 4. Učestalost jutarnjeg vežbanja na sedmičnom nivou

Učestalost jutarnjeg vežbanja	f	%
Svakodnevno jutarnje vežbanje	27	77.14
3 do 4 puta sedmično	4	11.43
2-3 puta sedmično	4	11.43
Σ	35	100

Tabela 5. Prostor u kojem se odvija jutarnje vežbanje

Prostor u kojem se odvija jutarnje vežbanje	f	%
Uvek u radnoj sobi	8	22.86
U radnoj sobi ili sali	8	22.86
U radnoj sobi ili dvorištu	11	31.43
Uvek u sali	3	8.57
U radnoj sobi, sali ili dvorištu	5	14.28
Σ	35	100



Tabela 6. Trajanje jutarnjeg vežbanja

Trajanje jutarnjeg vežbanja	f	%
do 10 minuta	15	42.86
10-15 minuta	16	45.71
15-20 minuta	4	11.43
Σ	35	100

Tabela 7. Vreme u toku radnog dana kada se odvija jutarnje vežbanje

Vreme u toku radnog dana	f	%
Uvek pre doručka	20	57.14
Uglavnom pre doručka, ponekad u toku prepodneva	6	17.14
Uvek u toku prepodneva	9	25.72
Σ	35	100

Najveći broj vaspitača (65.72%) nastoji da deca pravilno izvode sve pokrete ali je to uslovljeno i brojnošću grupe pa nisu uvek u mogućnosti da tako i postupe. Podjednak je broj (po 17.14%) onih koji su u tome istrajni i to su vaspitači sa manjim grupama dece kao i onih, sa veoma brojnim grupama, kojima je važno da deca učestvuju, bez obzira na pravilno izvođenje pokreta.

Tabela 8. Učešće dece tokom jutarnjeg vežbanja

Učešće dece	f	%
Bitno je da se sva deca uključe, bez obzira da li pravilno izvode sve pokrete	6	17.14
Koliko je moguće, zbog brojnosti grupe, nastojimo da deca pravilno izvode sve pokrete	23	65.72
Istrajni smo u nastojanju da sva deca pravilno izvode sve pokrete	6	17.14

Pre odgovora na pitanje o tome ko učestvuje u realizaciji, bilo nam je važno da saznamo koliko predškolskih ustanova iz našeg uzorka ima stručnog saradnika za fizičko vaspitanje. Odgovori su pokazali da je to samo 5 ustanova a od 13 vaspitača, koji rade u tim ustanovama, njih 9 je navelo da se u planiranje i realizaciju jutarnjeg fizičkog vežbanja uključuje i stručni saradnik za fizičko vaspitanje.

Tabela 9. Ko realizuje jutarnje vežbanje

Učešće u planiranju i realizaciji jutarnjeg vežbanja	f	%
Vaspitači	25	71.42
Vaspitači u saradnji sa stručnim saradnikom	9	25.72
Neko drugi se uključuje - roditelji	1	2.86
Σ	35	100

Odgovori ukazuju na to da su najčešće vaspitači ti koji planiraju i osmišljavaju sadržaje organizovanih/usmerenih fizičkih aktivnosti (71.42%); u ustanovama koje imaju stručnog saradnika za fizičko vaspitanje, on se uključuje zajedno sa vaspitačem (14.29%) ili ima dominantnu ulogu u ovom procesu (11.43%). U odgovoru jednog vaspitača (2.86%) naveden je roditelj. Orijentacija na saradnju sa okruženjem je jedna od zajedničkih odlika Modela A i B, pa je veoma važno da vaspitači, prvenstveno u roditeljima, imaju saradnike koji su spremni da se uključe u vaspitno-obrazovni rad.

Tabela 10. Planiranje i osmišljavanje sadržaja organizovanih/usmerenih fizičkih aktivnosti

Učesnici u planiranju i osmišljavanju sadržaja	f	%
Vaspitači	25	71.42
Stručni saradnik za fizičko vaspitanje	4	11.43
Vaspitač u saradnji sa stručnim saradnikom za fizičko vaspitanje	5	14.29
Vaspitač u saradnji sa roditeljima	1	2.86
Σ	35	100

Odgovori da su fizičke aktivnosti integrisane sa sadržajima ostalih oblasti, ukazuju na način programskog rada po Modelu A i Osnovama programa „Godine uzleta“ a određeno vreme tokom sedmice, kada se odvijaju usmerene aktivnosti, na rad po Modelu B. Vaspitači koji rade sa decom mlađeg uzrasta su se češće opredeljivali za prvi ponuđeni odgovor (25.72%).

Tabela 11. Organizovane/usmerene fizičke aktivnosti na sedmičnom nivou

Organizovane/usmerene fizičke aktivnosti	f	%
Jednom sedmično	9	25.72
Dva puta sedmično	13	37.14
Integrisane u sadržaje ostalih oblasti	13	37.14
Σ	35	100

Nastojeći da od vaspitača saznamo koliko je struktura prostora u vrtiću pogodna za realizaciju fizičkih aktivnosti, prvo pitanje se odnosi na radnu sobu u kojoj deca provode najviše vremena.

Tabela 12. Prostorne mogućnosti za realizaciju fizičkih aktivnosti u radnoj sobi

Prostor za fizičke aktivnosti u radnoj sobi	f	%
Deo prostora je uvek slobodan i dovoljan za realizaciju fizičkih aktivnosti	22	62.86
Potrebne su izmene u prostoru, pomeranjem nameštaja	13	37.14
Σ	35	100

Iako veći procenat odgovora (62.86%) ukazuje da je prostor u radnoj sobi dovoljan da bi se realizovale fizičke aktivnosti, ipak više od trećine anketiranih vaspitača mora da izvrši izmene u prostoru, pomeranjem elemenata nameštaja, da bi deca mogla neometano da se kreću.

Tabela 13. Koji se zatvoreni prostori, sem radne sobe, koriste za fizičke aktivnosti

Zatvoreni prostori vrtića (moguć je veći broj odgovora)	f	%
Centralni hol	9	21.43
Hodnici	9	21.43
Sala	16	38.09
Terasa	3	7.14
Ništa sem radne sobe	5	11.91
Σ	42	100

Sem radne sobe, najviše se koristi sala a zatim centralni hol i hodnici; 5 ispitanika (11.91%) je odgovorilo da nemaju mogućnosti da koriste bilo koji drugi zatvoreni prostor. Neki vrtići nemaju salu ili je ona promenila namenu - pretvorena je u dve radne sobe (1 vrtić iz ovog uzorka) ali to onda utiče i na kvalitet ostalih aktivnosti.

Tabela 14. Prostor i opremljenost dvorišta vrtića

Dvorište vrtića	1	2	3	4	5	Proseč. ocena
Prostrano, omogućava neometano kretanje, pogodno za različite aktivnosti	/	4	7	11	13	3.94
Opremljeno raznovrsnim spravama	2	11	9	6	7	3.14
Sprave su bezbedne i sva deca mogu da ih koriste	5	9	7	7	7	3.06
Ima dovoljno travnatih površina	6	1	9	6	13	3.54
Postoji teren/i za grupne sportove	11	10	7	3	4	2.40
Prostor se obogaćuje i prilagođava korišćenjem različite opreme i rekvizita	/	2	12	11	10	3.83

Pitanje koje se odnosilo na prostor i opremljenost dvorišta sadržalo je šest tvrdnji a vaspitači su vršili procenu na petostepenoj skali. Najviša prosečna ocena se odnosi na površinu dvorišta, koja omogućava boravak i različite aktivnosti dece (3.94) a vaspitači nastoje da prostore u dvorištu prilagođavaju aktivnostima korišćenjem različite opreme i rekvizita (3.83). Međutim, iako postoje travnati tereni njih nema uvek dovoljno ili ih uopšte nema (3.54), nedostaju tereni za grupne sportove (2.40) a ni sprave nisu dovoljno bezbedne (3.06).

Tabela 15. Fizičke aktivnosti na otvorenom prostoru u okviru rasporeda dnevnih aktivnosti

Aktivnosti na otvorenom prostoru u odnosu na raspored dnevnih aktivnosti	f	%
Raspored se uvek poštuje bez obzira na želje dece da boravak produže	14	40.00
Povremeno odstupamo od rasporeda da ne bismo prekidali igru	10	28.57
Raspored prilagođavamo dečjim interesovanjima	11	31.43
Σ	35	100

Ritam dana u vrtiću podrazumeva smenu različitih vrsta aktivnosti – rutinskih (obroci, spavanje, održavanje higijene), programskih aktivnosti i igre. Veća fleksibilnost vremenske organizacije je odlika Modela A i Osnova programa predškolskog vaspitanja i obrazovanja, što podrazumeva da, poštujući inicijativu i interesovanja dece, ne bi trebalo da bude prekidana aktivnost kojom se bave kao što ne bi trebalo da bude ni „praznog hoda“ kada se čeka određeno, unapred isplanirano vreme, za početak nove aktivnosti. Odgovori vaspitača koji rade po Modelu B, da se raspored uvek poštuje, su očekivani ali na ovom uzorku su se za isti odgovor opredeljivali i vaspitači koji rade po Modelu A, i on je najviše zastupljen (40.00%).

Tabela 16. Vreme provedeno na otvorenom prostoru tokom rane jeseni, proleća i leta

Trajanje boravka na otvorenom	f	%
30-60 minuta	6	19.35
1-2 sata	13	41.94
više od 2 sata	12	38.71
Σ	31	100

Tabela 17. Vreme provedeno na otvorenom prostoru tokom kasne jeseni i zime

Trajanje boravka na otvorenom	f	%
do 30 minuta	14	46.66
30 – 60 minuta	9	30.00
1-2 sata	7	23.34
Σ	30	100

Očekivano je da će se odgovori o trajanju boravka na otvorenom prostoru razlikovati i da će biti uslovljeni godišnjim dobom i meteorološkim uslovima. Vaspitači koji nisu naveli trajanje, davali su opisne odgovore – „zavisu od dečjih interesovanja“, „kada je suvo vreme“. Samo u odgovorima dva vaspitača nema razlike u trajanju u odnosu na godišnja doba, deca provode po 1-2 časa na otvorenom.

Tabela 18. Načini dopunjavanja i obogaćivanja sredstava i rekvizita

Na koji način se obogaćuje i dopunjuje fond sredstava i rekvizita koje deca koriste u toku fizičkih aktivnosti?	f	%
Nabavlja ih ustanova	27	29.35
Prave ih vaspitači	21	22.83
Prave ih vaspitači i roditelji, na radionicama	18	19.56
Prave ih vaspitači sa decom u toku aktivnosti	12	11.96
Kupuju/poklanjaju roditelji	11	13.04
Kupuju ih vaspitači	2	2.17
Pozamljuju ih iz škole sporta	1	1.09
Σ	35	100

Vaspitači su, u najvećem broju odgovora, ti koji obogaćuju fond sredstava i rekvizita koji se koriste za fizičke aktivnosti, bilo da ih prave sami (22.83%), sa roditeljima na radionicama (19.56%) ili sa decom u toku različitih aktivnosti (11.96%).

Tabela 19. Učestalost merenja motoričkih sposobnosti dece

Koliko puta godišnje se vrši procena/merenje dečjih motoričkih sposobnosti	f	%
Dva puta godišnje, na početku i na kraju radne godine	19	54.29
Jednom godišnje (u septembru)	2	5.71
3-4 puta godišnje	14	40.00
Σ	35	100

Procena dečjih motoričkih sposobnosti se najčešće vrši na početku i na kraju radne godine (54.29%) i 3-4 puta godišnje (40.00%).

Tabela 20. Ko vrši procenu/merenje dečjih motoričkih sposobnosti

Ko vrši procenu/merenje dečjih motoričkih sposobnosti?	f	%
Vaspitači	24	68.57
Stručni saradnik za fizičko vaspitanje	1	2.86
Vaspitači po instrukcijama/u saradnji sa stručnim saradnikom za fizičko vaspitanje	8	22.86
Vaspitači članovi tima za fizičko vaspitanje	2	5.71
Σ	35	100

Merenje dečjih motoričkih sposobnosti najčešće realizuju vaspitači (68.57%) a u onim ustanovama koje imaju stručnog saradnika za fizičko vaspitanje on se uključuje zajedno sa vaspitačima ili daje instrukcije i učestvuje u timu za fizičko vaspitanje.

Tabela 21. Prilagođavanje fizičkog vežbanja u cilju stimulisanja nedovoljno razvijenih motoričkih sposobnosti

U kojoj meri vaspitači prilagođavaju fizičke vežbe	f	%
Zbog brojnosti dece u grupi ne mogu da prilagode, svi rade iste vežbe	13	37.14
Povremeno prilagođavaju vežbe potrebama pojedine dece ili grupe dece	18	51.43
Realizuju posebne programe/vežbe sa decom koja imaju smanjenje pojedine motoričke sposobnosti	4	11.43
Σ	35	100

Najveći broj vaspitača (51.43%) povremeno radi vežbe sa decom kod kojih su zapažene slabije razvijene pojedine motoričke sposobnosti dok 37.14% to nije u mogućnosti zbog brojnosti dece pa svi rade iste vežbe; od 4 vaspitača koja su odgovorila da realizuju programe/vežbe koje prilagođavaju deci, 3 vaspitača rade u ustanovama koje imaju stručnog saradnika za fizičko vaspitanje, sa njim sarađuju u planiranju, realizaciji fizičkih aktivnosti i u proceni dečjih motoričkih sposobnosti; jedan vaspitač samostalno procenjuje kada je potrebno da deluje jer u njegovoj ustanovi nema stručnog saradnika.

Poslednje pitanje u upitniku je bilo otvorenog tipa, a od vaspitača smo očekivali da navedu šta je specifično za njihov vrtić, kada je u pitanju korišćenje prostora i kako se odvija njihov rad na podsticanju razvoja motoričkih sposobnosti dece, ukoliko smatraju da nije bilo obuhvaćeno pitanjima. Petnaest vaspitača je detaljnije odgovorilo, opisujući situacije sa kojima se sreću u praksi. Potencijali lokalne zajednice, koji dozvoljavaju korišćenje i drugih prostora u neposrednoj blizini vrtića – sportskih terena, šume, parka sa opremljenim dečjim igralištem, utiču da se poboljšaju uslovi za realizaciju motoričkih aktivnosti dece.

Kada kod dece uoče nepravilno držanje tela, a u odgovorima su najčešće navođeni poremećaji posturalnog statusa kičmenog stuba i spuštene stopala, vaspitači nastoje da utiču izborom vežbi koje realizuju grupno ili individualno – vežbe za mišiće ruku i ramenog pojasa, trbušne i leđne mišiće; hodanje bosim stopalima po neravnim površinama, takmičenje u brzom i pravilnom hodanju po različitim podlogama (unutrašnjom, spoljašnjom stranom stopala, na prstima, na peti); vežbe klikerima (hvatanje klikera prstima stopala i ubacivanje u posudu).

Vaspitači takođe navode da jednom broju dece problem predstavlja korišćenje stepeništa pa sa njima rade individualno, najpre držeći ih za ruku i pružanjem verbalne podrške, dok ne uspeju samostalno da se penju i silaze; strah od penjanja i spuštanja niz tobogan savladavaju uključivnjem i ostale dece, koja u toku ove aktivnosti bodre svoje drugove pevanjem njihovih omiljenih pesmica. Pronalaze što više razloga da koriste stepeniše i penjalice u dvorištu. Vaspitači nastoje da deluju i na roditelje, ukazivanjem na određeni problem a uspešnost delovanja zavisi od toga da li oni žele da prihvate sugestiju i obrate se stručnjaku ili negiraju njegovo postojanje.

## Diskusija

U odnosu na prvi zadatak istraživanja, da se ustanovi koji prostori vrtića se koriste za fizičke aktivnosti dece i na koji način se restrukturiraju, rezultati su pokazali da se radna soba najčešće koristi za jutarnje vežbanje a zatim sala ili dvorište. Prostor u radnoj sobi je uglavnom dovoljan za realizaciju fizičkih aktivnosti mada više od trećine anketiranih vaspitača mora da izvrši izmene u prostoru, pomeranjem elemenata nameštaja, da bi se omogućilo neometano kretanje dece. U toku dana se za fizičke aktivnosti, sem radne sobe, koriste i drugi zatvoreni prostori – sala, centralni hol i hodnici a na ovom uzorku je ustanovljeno da u nekim vrtićima nemaju mogućnosti da koriste druge zatvorene prostore, pa da čak nemaju ni salu ili je ona pretvorena u radne sobe. Dvorišta vrtića su uglavnom prostrana, postoje travnate površine ali ih nema uvek dovoljno, nedostaju tereni za grupne sportove a ni sprave nisu uvek bezbedne. Vaspitači nastoje da prostore u dvorištu prilagođavaju aktivnostima korišćenjem različite opreme i rekvizita. U obogaćivanje fonda sredstava i rekvizita najviše su uključeni vaspitači, koji ih izrađuju sami ili u saradnji sa roditeljima, na radionicama ili sa decom u okviru različitih aktivnosti. Potencijali lokalne zajednice i korišćenje drugih prostora, van vrtića, utiču da se poboljšaju uslovi za realizaciju motoričkih aktivnosti dece.

Drugi zadatak istraživanja se odnosio na načine planiranja stimulisanja razvoja motoričkih sposobnosti i učesnike u ovom procesu. Planiranje vaspitno-obrazovnog rada treba da bude zasnovano na kontinuiranom posmatranju, slušanju dece i praćenju njihovih potreba i interesovanja (Pravilnik o standardima kvaliteta rada ustanove, 2018). Najčešće su vaspitači ti koji planiraju i kreiraju program fizičkih aktivnosti i vrše procenu motoričkih sposobnosti dece (2-4 puta u toku radne godine), a samo jedna četvrtina anketiranih vaspitača u ovom procesu ostvaruje saradnju sa stručnim saradnikom – pedagogom za fizičko vaspitanje. Nemaju sve predškolske ustanove stručnog saradnika za fizičko vaspitanje. Odnos vaspitnih grupa i broja stručnih saradnika određen je Pravilnikom o bližim uslovima za osnivanje, početak rada i obavljanje delatnosti predškolske ustanove (2019), kojim je predviđeno da ustanova sa više od 48 vaspitnih grupa celodnevno i poludnevno boravka ima stručnog saradnika drugog profila, a to je pedagog za likovno, muzičko i fizičko vaspitanje i logoped. Čak i kada je zaposlen u predškolskoj ustanovi, postavlja se pitanje koliko može da bude efikasan njegov rad na podsticanju razvoja motoričkih sposobnosti dece, u ustanovi sa velikim brojem objekata i vaspitnih grupa? Posledice sedentarnog načina života sve više se uočavaju i na predškolskom uzrastu. Autori koji su vršili merenja antropološkog statusa predškolske dece uzrasta 6 i 7 godina i dobili zabrinjavajuće rezultate, ukazuju na veliki značaj prevencije i korektivnih vežbi, koje mogu da se realizuju u okviru aktivnosti u dečjim vrtićima (Milošević i Obradović, 2008; Obradović i Milošević, 2008; Romanov, Stupar, Međedović i Brkin). Mali broj vaspitača realizuje posebne programe sa decom kod koje su uočene smanjene motoričke sposobnosti (11.43%), polovina anketiranih povremeno prilagođava vežbe (51.43%) a 37.14% to nije u mogućnosti zbog brojnosti dece u vaspitnim grupama.

Treći zadatak istraživanja je bio usmeren na vremensku strukturu, odnosno, koliko je ona fleksibilna da bi se uskladila sa potrebama dece za fizičkim aktivnostima. Jutarnje fizičko vežbanje se uglavnom odvija svakodnevno (77.14% odgovora), kada je integrisano u sadržaje ostalih oblasti takođe je svakodnevno prisutno, dok se usmerene fizičke aktivnosti realizuju dva puta sedmično a jedna četvrtina od ukupnog broja odgovora pokazuje da je to samo jednom sedmično. Fleksibilnost u ritmu dana i u realizaciji aktivnosti, jedan je od pokazatelja kvaliteta rada a podrazumeva da deci treba omogućiti različite prilike za igru i učenje (Pravilnik o standardima kvaliteta rada ustanova, 2018). Kada se uporede rezultati dobijeni anketiranjem, najveći procenat odgovora (40.00%) ukazuje da je vaspitačima važnije poštovanje predviđenog rasporeda, približno jedna trećina vaspitača prilagođava raspored dečjim interesovanjima a 28.57% povremeno odstupa

od rasporeda. Vreme koje deca provode na otvorenom prostoru zavisi od godišnjih doba i meteoroloških uslova, u zimskim mesecima je kraće, u većini odgovora je 30-60 minuta a tokom rane jeseni, proleća i leta 1-2 sata ili duže. Samo u odgovorima dva vaspitača nema razlike u trajanju u odnosu na godišnja doba, deca provode po 1-2 časa na otvorenom.

## Zaključak

Rezultati istraživanja pokazuju da postoji neusaglašenost u odnosu na uslove rada, broj dece u vaspitnim grupama, prostorne mogućnosti, opremljenost. Vaspitači nastoje da zadovolje zahteve u pogledu stimulisanja razvoja dečjih motoričkih sposobnosti unošenjem manjih promena i prilagođavanjem unutrašnjih prostora vrtića kao i korišćenjem raspoloživih otvorenih prostora. Svesni su značaja fizičkih aktivnosti na ranim uzrastima, koje su svakodnevno prisutne u vaspitno-obrazovnom radu ali ne u dovoljnoj meri i uglavnom bez mogućnosti individualizovanja pristupa kojim bi se kontinuirano, posebnim programima, podsticale motoričke sposobnosti dece koje su slabije izražene. Rešenja ovih problema bi se mogla očekivati u sistemskim promenama koje bi dovele do toga da se u vaspitno-obrazovni proces uključi veći broj stručnih saradnika za fizičko vaspitanje koji bi, zajedno sa vaspitačima, decom i roditeljima doprinosili razvoju programa.

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