

DIFFERENCES IN PRESCHOOL EDUCATORS' AWARENESS AND UNDERSTANDING OF PHYSICAL ACTIVITY

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Abstract

The main scope of the research is to identify and examine differences in preschool educators' awareness and understanding of physical activity. The sample comprised 246 pre-school educators from 20 counties of the Republic of Croatia, including Zagreb, with an average chronological age of 36.79±10.79 years and average work experience of 109.90±119.64 months. Based on level of awareness, participants were categorized into three groups: assessment of awareness level < 4, assessment of awareness level = 4 and assessment of awareness level = 5. Participants completed an online questionnaire consisting of 10 items, where they indicated their degree of agreement with each statement on a 5-point Likert scale. Canonical discriminant analysis revealed a statistically significant difference between the three groups by one discriminant function (CanR=0.44, p=0.000). The findings confirm significant differences among educators, influenced by ongoing professional development, personal interest in physical fitness and a commitment to child development. Educators with higher awareness levels recognize the diverse benefits of physical activity for children's health, social skills and cognitive development. Enhancing awareness through targeted professional development programs can empower educators to effectively promote lifelong habits of health and well-being among pre-school children.

Key words: pre-school educators, activity, sport, differences

Introduction

Pre-school educators play a crucial role in shaping the health and well-being of young children, acting as primary influencers and caretakers alongside parents. Their impact extends beyond academic instruction to encompass the promotion of physical and health education, which is vital for early childhood development. Educators not only impart knowledge but also model behaviors, making their attitudes toward physical activity particularly influential (Prskalo, Findak, Neljak, 2007; Renz-Polster, Hüther, 2017). The pre-school period is a critical stage of development where children form foundational habits and traits and educators' engagement in promoting physical activity can significantly enhance children's physical, social and emotional growth (Eret, 2011). From previous researches (Mikkelsen, 2011; Berk, 2018; Nonis, 2005) we can conclude that pre-school educators have a positive attitude towards physical activity. Despite widespread recognition of the importance of physical activity for young children, there remains a need for a deeper understanding of pre-school educators' perceptions, knowledge and practices related to this area. Research by Tomac, Vidranski and Ciglar (2015) underscores the substantial influence educators have in determining the timing and extent of physical exercise for pre-school children. Promoting a healthy lifestyle, including regular physical activity, is among the pivotal roles of educators, contributing to children's overall development and long-term well-being. However, the effectiveness of such efforts is heavily dependent on educators' own attitudes, behaviors and competence (Petrović-Sočo, Miljević-Ridički, Šarić, 2013).

This study seeks to address the existing gap by examining significant differences in pre-school educators' understanding of physical activity based on their level of awareness. Previous studies have shown that educators' attitudes and beliefs can vary widely, influencing their practical application (Dvorski et al., 2015). Thus, this research hypothesizes that there are significant differences in understanding physical activity among pre-school educators with varying levels of awareness about the need for such activities. Understanding these differences is essential for designing targeted interventions and professional development programs. These programs can equip educators with the necessary knowledge and skills to

create environments that support the physical, social and emotional well-being of young children. Effective professional development is crucial as it not only advances educators' knowledge but also promotes changes in their beliefs and practices, leading to improved educational outcomes (NKRPOO). Professional development programs with transformative potential are essential for fostering meaningful changes in educators' beliefs and actions. As educators' beliefs shape their behaviors, it is necessary to continually question and evolve these beliefs alongside educational philosophies to improve practice. This research aims to provide insights that will aid in the development of effective professional development programs, ultimately enhancing the quality of pre-school education by fostering environments that nurture the physical, social and emotional well-being of young children. In summary, this study highlights the critical role of pre-school educators in promoting physical activity and the need for a deeper understanding of how their level of awareness influences their understanding and practices. By addressing this gap, we aim to contribute to the growing body of literature on early childhood education and underscore the importance of supporting educators in their efforts to cultivate healthy, active lifestyles among pre-school children.

Material & methods

Examinee sample - The research included a sample of 246 pre-school educators from 20 counties of the Republic of Croatia, including the city of Zagreb. The largest proportion of examinees hailed from the 5 Slavonian counties, constituting 43.49% (107) of the sample. Furthermore, 23.17% (57) were from the Adriatic counties, while 33.33% (82) were from Zagreb and other continental counties. The average chronological age of the participants was 36.79 ± 10.79 years, ranging from 19 to 64 years. The majority of the sample comprised female pre-school educators, accounting for 97.56% (240) of the total examinees. Among the participants, 93.90% (231) were employees, with 61.38% (151) possessing three or more years of teaching experience. Additionally, 32.92% (81) of educators were identified as students, currently enrolled in the education system. According to the level of awareness about the need to engage in physical activities, the total sample is divided into 3 groups: LAW1 (Group 1) 26,42% (65) - assessment of awareness level < 4, LAW2 (Group 2) 45,12% (111) - assessment of awareness level = 4 and LAW3 (Group 3) 28,46% (70) - assessment of awareness level = 5.

Variable sample - For the purpose of analyzing the differences in pre-school educators' awareness a survey questionnaire comprising 34 questions was utilized. From this questionnaire, 10 questions were selected for the current research. The examinees expressed their degree of agreement with each statement on a 5-point Likert scale, where 1 represented "not at all" and 5 represented "completely." Except for the categorical variable POS - which represent the assessment of the level of awareness/information about the need to engage for practicing physical activities and DOB - which represent the chronological age of the examinees the remaining variables were assessed on a Likert scale: *PRK* - knowledge of the developmental characteristics of pre-school children; *ROK* - understanding the basic kinesiology knowledge about the influence of physical activity on different segments of the anthropological status of pre-school children; *RUT* - possibility to discuss about the impact of physical exercise on the health of pre-school children and on growth and development; *OIA* - possibility of explaining and interpreting the anthropological characteristics of pre-school children; *PMI* - knowledge of the application of measuring instruments used in work with children of pre-school age; *PVI* - assessment of personal interest in non-kindergarten sports activities of pre-school children; *PVK* - assessment of the importance of the quality of children's free time content as a factor in upbringing and education.

Methods of data processing - The methods used for data processing included calculating descriptive statistical parameters for all variables: arithmetic mean (AS), standard deviation (SD), minimum (Min) and maximum (Max) result. In order to determine if there are significant differences between the three groups the canonical discriminant analysis conducted on the groups according to level of awareness. Within the canonical discriminant analysis, the coefficient of canonical discrimination was determined, as well as groups position on discriminant function and correlation between the variables and the discriminant function. The significance of coefficients of canonical discrimination was tested by Bartlett's test. The data was classified by statistical package STATISTICA 13.0.

Description of experimental procedure - All examinees voluntarily and anonymously filled out the online survey questionnaire. The questionnaire conducted during the period of 7th to 3rd April 2023. through social networks, in a period in which there are no exams, holidays and vacations distractions, so the examinees could provide a more realistic self-assessment of the selected kinesiological features.

Results

Table 1. shows descriptive indicators of variables for the total sample of consumers and also for the all three work experience groups. Across all groups (LAW1 - LAW3), in all dependent variables, the average values increase with higher levels of awareness about the need to engage in physical activities. The group of LAW3 parents, who have the highest level of awareness, exhibits the highest average values across all observed variables. Notably, aside from the PVK variable—which assesses the quality of children's free time content as a factor in upbringing and education (AS=4.16) for the total sample—no other variable has an average value exceeding 4.00. Specifically, within the groups, the LAW1 group does not have any average values above 4.00. In contrast, the LAW3 group has four variables with average ratings higher than 4.00, indicating better outcomes among parents with higher awareness levels. The PMI variable, which measures knowledge of the application of measuring instruments used in working with pre-school children, consistently has the lowest average values across all groups. This suggests a significant area for potential improvement in educators' skills related to measurement tools. The standard deviation values are consistent across all groups.

Table 1. Descriptive indicators of measuring variables.

Var	Total sample (N=246)			LAW1 (N=65)			LAW2 (N=111)			LAW3 (N=70)		
	AS±SD	Min	Max	AS±SD	Min	Max	AS±SD	Min	Max	AS±SD	Min	Max
DOB	36,79±10,79	19	64	39,17±11,29	19	62	37,35±10,74	20	64,0	33,70±9,76	20	62
PRK	3,97±0,74	1	5	3,66±0,76	1	5	4,04±0,65	2	5,0	4,16±0,77	2	5
ROK	3,87±0,86	1	5	3,51±0,77	1	5	3,87±0,82	2	5,0	4,20±0,88	2	5
RUT	3,86±0,84	1	5	3,45±0,77	1	5	3,86±0,84	2	5,0	4,23±0,73	2	5
OIA	3,58±0,88	1	5	3,23±0,79	1	5	3,60±0,86	2	5,0	3,86±0,91	2	5
PMI	3,37±1,01	1	5	2,97±0,79	1	5	3,41±1,03	1	5,0	3,69±1,06	1	5
PVI	3,50±0,98	1	5	3,09±0,95	1	5	3,46±0,83	1	5,0	3,94±1,05	1	5
PVK	4,16±0,86	2	5	3,78±0,94	2	5	4,21±0,80	2	5,0	4,43±0,75	2	5

AS–arithmetic mean, SD–standard deviation, Min–minimal result, Max–maximum result, Var–Variables, LAW–awareness group

The greatest variability in responses is seen in the PMI variable, indicating diverse levels of knowledge about applying measuring instruments among pre-school educators. Conversely, the highest homogeneity in responses is observed in the PRK variable, which assesses knowledge about the developmental characteristics of pre-school children. The minimum scores for all seven dependent variables in the total sample are 1, highlighting areas where parents' perceptions and practices can be significantly improved.

Table 2. Differences of arithmetic means and canonical discriminant analysis between groups.

CANR	λ	h^2	df	p
0,44	0,79	57,06	14	0,000
0,13	0,98	4,37	6	0,627

CanR–canonical correlation coefficient, λ –lambda, h^2 –Chi square, df – degrees of freedom, p – level of significance

Table 3. Arithmetic means of groups on the discriminant function.

Group	DF
LAW1	0,698
LAW2	-0,011
LAW3	-0,632

DF–correlation coefficients of discriminant function and variables, LAW–awareness group

Table 2. show the differences in arithmetic means and canonical discriminant analysis between the three groups, showing statistically significant differences (1st canonical correlation of the discrimination function; CanR=0.44, $p=0.000$). This coefficient indicates that, while the differences between the three groups regarding the observed variables are moderate, the discrimination function significantly distinguishes between the groups. Furthermore, the significance of the specified coefficient was tested using Bartlett's Chi-square test, yielding a statistically significant result with an error of $p=0.000$. This confirms the robustness of the observed differences between the groups and underscores the importance of the

variables in distinguishing among them. Overall, these findings highlight the relevance of the variables examined in Table 2. and their potential impact on the features of the groups under research.

From Table 3. we can see the positioning of the groups LAW1, LAW2 and LAW3 along the discrimination function. It is evident that groups LAW2 and LAW3 are situated at the negative pole of the discrimination function, with their averages at LAW2 = -0.011 and LAW3 = -0.612 standard deviations of the discrimination function, respectively. Conversely, group LAW1 is positioned at the positive pole, with its average at 0.698 standard deviations of the discriminant function.

From Table 4. we can see that according to level of awareness three groups are significantly different in three (3) variables. Those are: possibility to discuss about the impact of physical exercise on the health of pre-school children and on growth and development; assessment of personal interest in non-kindergarten sports activities of pre-school children; assessment of the importance of the quality of children's free time content as a factor in upbringing and education.

Table 4. Differences between groups in individual variables.

Var	λ	p
PRK	0,797	0,278
ROK	0,793	0,525
RUT	0,809	0,049
OIA	0,790	0,740
PMI	0,789	0,912
PVI	0,815	0,018
PVK	0,817	0,016

λ –lambda, p– significance level

Dicussion

Across all groups studied, a clear trend emerges where higher awareness among pre-school educators correlates with higher average values in all observed variables related to physical activity. This can be attributed to several interconnected factors that shape educators' attitudes and practices in promoting physical activity among young children. Educators with higher awareness levels likely possess a deeper knowledge and understanding of the developmental benefits associated with physical activity. They are more informed about how regular exercise contributes not only to physical health but also to social and emotional well-being during early childhood. This knowledge empowers them to prioritize physical activity in their educational practices. Ongoing professional development plays a crucial role. Educators who engage in continuous learning opportunities focused on health and physical education are better equipped with current research findings, best practices and pedagogical strategies. This professional growth enhances their competence in integrating physical activity into daily routines and curriculum planning. Educators with higher awareness levels often serve as effective role models. By demonstrating personal commitment to physical activity, they inspire children and their families to adopt healthy behaviors. This role modeling aspect is particularly influential during the formative years when children are highly receptive to learning through observation and imitation. Positive correlation between higher awareness and higher average values in physical activity-related variables underscores the pivotal role of pre-school educators in promoting healthy habits from a young age. By enhancing awareness through knowledge acquisition, professional development, role modeling, institutional support and community engagement, educators can significantly contribute to children's overall well-being and lay a strong foundation for lifelong health. Furthermore, educators categorized in LAW3, demonstrating the highest level of awareness, consistently exhibit the highest average values across all variables studied in relation to physical activity. This finding underscores the positive impact of heightened awareness on educators' attitudes and practices concerning physical activity promotion in pre-school settings. However, despite these higher average values, it is notable that none of the variables, except for the assessment of children's free time content (PVK) which scored 4.16, surpassed an average rating of 4.00. This observation suggests that there are areas where educators' perceptions and practices related to physical activity can still be strengthened. Several factors may contribute to this finding. While educators in LAW3 demonstrate a high level of awareness, the practical implementation and integration of physical activity into daily routines may still face challenges. Educators may encounter barriers such as limited resources, time constraints, or competing educational

priorities, which can impact the consistency and quality of physical activity opportunities provided to children. Also, despite awareness of the importance of physical activity, educators may differ in their approaches to assessing and addressing children's needs and interests in this regard. This variability may result in differing levels of emphasis placed on physical activity within different educational settings. Additionally, social and institutional context within pre-schools may influence educators' perceptions and practices related to physical activity. Factors such as organizational policies, parental expectations and community norms can shape the extent to which physical activity is prioritized and integrated into daily routines. Moreover, ongoing professional development and training opportunities tailored to enhance educators' knowledge and skills in physical activity promotion could further strengthen their practices. A significant area for improvement identified in the study is evident in the PMI variable, which assesses educators' knowledge of using measurement instruments in pre-school settings. This variable consistently scored the lowest across all groups, highlighting a critical need for targeted training to enhance skills related to assessing and monitoring physical activity. Without specialized training or exposure to measurement instruments, educators may lack confidence or proficiency in accurately measuring and monitoring physical activity levels among young children. Sometimes the complexity of using measurement instruments in pre-school settings may present challenges. Educators may encounter difficulties in selecting appropriate tools, understanding measurement protocols and interpreting data collected. Furthermore, the availability and accessibility of measurement instruments could influence educators' proficiency. Limited access to equipment, budget constraints, or insufficient institutional support may hinder educators' ability to practice and refine their skills in using measurement tools effectively.

The significant differences observed between groups in variables related to the discussion of physical exercise impacts on children's health, personal interest in non-kindergarten sports activities and the importance of free time content quality reflect varying levels of awareness among pre-school educators. Educators with higher awareness levels exhibit more understanding and engagement in promoting physical activity and health-related behaviors among pre-school children. One possible explanation for these findings is that educators with heightened awareness are more likely to prioritize professional development opportunities focused on health promotion and physical activity. Moreover, educators with higher awareness levels may demonstrate a personal interest in physical fitness and sports activities beyond the pre-school setting. Additionally, educators with heightened awareness are likely more attuned to the quality of children's free time content and its influence on upbringing and education.

Conclusions

This study aimed to analyze how varying levels of awareness impact pre-school educators' understanding of physical activity. The findings from this study confirm the hypothesis that educators with different levels of awareness demonstrate significant variations in their understanding of physical activity and its implications for pre-school children. The findings confirm significant differences among educators, influenced by ongoing professional development, personal interest in physical fitness and a commitment to child development. Educators with higher awareness levels recognize the diverse benefits of physical activity for children's health, social skills and cognitive development. Enhancing awareness through targeted professional development programs can empower educators to effectively promote lifelong habits of health and well-being among pre-school children.

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