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**ANALYSIS OF THE STRUCTURE OF PARTICIPANTS
OF EDUCATION IN THE FIELD OF INTEGRATING
MOVEMENT IN WORK WITH CHILDREN**

**ANALIZA STRUKTURE UDELEŽENCEV
IZOBRAŽEVANJA NA PODROČJU VKLJUČEVANJA
GIBANJA PRI DELU Z OTROKI**

ABSTRACT

The aim of this research is to determine the profile of preschool teachers who have enrolled in the education for Leader of Kinesiological Activities for Early and Preschool Children at the Faculty of Teacher Education of the University of Rijeka, as well as to predict it for future cycles. As many as 171 preschool teachers who completed their education for Leader of Kinesiological Activities for Early and Preschool Children, i.e. lifelong training programme, participated in the research. The basic descriptive parameters were calculated, and to determine the correlation between certain variables the Spearman's correlation coefficient was used, the differences were determined by the Student's t-test for independent samples, and to predict the future preschool teachers' profile the linear regression analysis was used. The results indicate that the attendants were statistically significantly different ($p < 0.00$) according to the criterion of completed study, i.e. preschool teachers with a completed graduate study are averagely seven years younger and have almost seven years of working experience less. A further trend of enrolment anticipates preschool teachers with less years of service and a completed graduate study. The greatest contribution offered by this research lies in the proven need of the participants for further training on the topic of integrated movement, while the large age span indicates a huge interest of preschool teachers with more, but also fewer years of service.

Keywords: lifelong learning education, kinesiological activities, preschool teachers, children

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IZVLEČEK

Namen te raziskave je bil ugotoviti profil vzgojiteljev predšolskih otrok, ki so se vpisali na izobraževanje za vodjo kinezioloških dejavnosti za zgodnje in predšolske otroke na Pedagoški fakulteti Univerze na Reki, ter ga predvideti za prihodnje cikle. V raziskavi je sodelovalo kar 171 predšolskih učiteljev, ki so zaključili izobraževanje za vodjo kinezioloških dejavnosti za zgodnje in predšolske otroke, tj. program vseživljenjskega izobraževanja. Izračunani so bili osnovni opisni parametri za ugotavljanje povezanosti med določenimi spremenljivkami je bil uporabljen Spearmanov korelacijski koeficient, razlike so bile ugotovljene s Studentovim t-testom za neodvisne vzorce, za napovedovanje profila predšolskih učiteljev v prihodnosti, pa je bila uporabljena linearna regresijska analiza. Rezultati kažejo, da so se udeleženci statistično značilno razlikovali ($p < 0.00$) glede na kriterij končanega študija, tj. predšolski učitelji z dokončanim podiplomskim študijem so v povprečju sedem let mlajši in imajo skoraj sedem let manj delovnih izkušenj. Nadaljnji trend vpisa predvideva predšolske učitelje z manj leti delovne dobe in zaključenim podiplomskim študijem. Največji prispevek, ki ga ponuja ta raziskava, je v dokazani potrebi udeležencev po nadaljnjem izobraževanju na temo integriranega gibanja, medtem ko velik starostni razpon kaže na veliko zanimanje predšolskih učiteljev z več, a tudi manj leti delovne dobe.

Gljučne besede: vseživljenjsko učenje, kineziološke dejavnosti, predšolski učitelji, otroci

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INTRODUCTION

The lack of integral motor development in the phase of early childhood is almost impossible to be compensated for later on in life, which is especially important when we know that children's motor skills are directly linked to the development of the central nervous system (Vujičić and Petrić, 2021). The cardio-respiratory fitness test shows that each new generation of children is weaker than the previous one (Kasović, Štefan, Petrić, 2021). Due to an insufficient level of physical activity their health is seriously jeopardized (Jurakić and Heimer, 2012). The occurrence of obesity, diabetes, cardio-vascular problems, passivity and other consequences brought by an inactive lifestyle is increasingly common with the younger generation (Shields, 2006). Research indicates that the existing interventions in the area of children's motor activities did not give significant results (Novak et al. 2014), which can indicate preschool teachers' insufficient understanding of the importance of movement integration in the daily educational process (Brockman, Jago and Fox, 2010). Spending time in institutions compared to the time spent out of them, reduces the level of children's physical activity significantly (Petrić, 2022). Education in early education institutions, despite contemporary paradigms, is still dependent on the structure which usually neglects the importance of an integral motor development of children (Brockman, Jago and Fox, 2010). Children spend the largest part of their day in institutions (Hyndman, Benson and Telford, 2016), so it is important to understand the competencies owned by the professional who is there with them, but also what his/her understanding of the importance of movement in the educational work is (Petrić, 2021).

Institutions have a significant possibility of influencing the motor literacy of children and the formation of habits linked to movement (Petrić, 2019). In the kinesiological sense we usually differ between two types of sports programmes: integrated sports programme and specialised ("short") sports programme. The results of the analysis of institutional kinesiological programmes indicate that, as a rule, only the integrated sports programme, which includes the preschool teacher, has significant qualitative advantages in the sense of the children's integral development (Petrić, 2022). The education programme for Leader of Kinesiological Activities for Early and Preschool Children at the Faculty of Teacher Education of the University of Rijeka trains preschool teachers to be able to realise an integrated sports programme. It has been conducted since 2020, and its primary purpose is to develop preschool teachers' competencies for a quality organisation and employment of kinesiological activities, i.e. the acquisition of specific knowledge and skills in the field of kinesiological education which would make them able to teach kinesiological activities as part of special sports programmes

with early and preschool children. In other words, the attendants will be competent to integrate movement in their direct educational work with the purpose of children's integral development.

Contemporary lifestyle enhances various significant changes in almost all professions, and so in the educational profession, too. It is therefore necessary to constantly work on the professional training of professionals (Petrić, 2022). On the other hand, kinesiological programmes and interventions should also be constantly adapted to the users' needs (Petrić, 2021). It is therefore the aim of this research to determine the profile of preschool teachers enrolling in the education for Leader of Kinesiological Activities for Early and Preschool Children at the Faculty of Teacher Education of the University of Rijeka, as well as to predict it for future cycles.

METHODS

Research participants

As many as 171 preschool teachers who completed their education for Leader of Kinesiological Activities for Early and Preschool Children, i.e. lifelong training programme in the last three years, participated in the research. They are employed in kindergartens located in 13 different counties in the Republic of Croatia.

Research variables

The variables in this research are the participants' year of birth, i.e. their chronological age, number of years of service, and level of education which is differentiated as undergraduate or graduate university study Early and Preschool Education.

Statistical data processing

The collected data were processed by the program STATISTIKA 12.5 (StatSoft, Inc., Tulsa, Oklahoma, USA) and presented as charts and tables. The basic descriptive parameters (arithmetic means, standard deviation) were calculated, and to determine the correlation between certain variables the Spearman's correlation coefficient was used, the differences for the variable 'level of education' were determined by the Student's t-test for independent samples, and to predict the future preschool teachers' profile the linear regression analysis was used. To determine the normality of distribution of results the Kolmogorov-Smirnov test was used. Statistical significance was tested at the level of $p < 0.05$.

RESULTS

Image 1 shows that the largest number of attendants, over one hundred of them which form the majority of all the participants, is employed in the County of Primorje and Gorski Kotar, more precisely in the city of Rijeka. Of the thirteen counties in the Republic of Croatia where the rest of the participants come from, most of them come from the Split-Dalmatia County and its participants are employed in kindergartens in the city of Split. A number of counties have only one attendant. The total number of preschool teachers who attended the education is unevenly spread throughout the counties, but the image shows the interest for it being present among preschool teachers from different parts of the country, which encompasses over the half of the total number of counties.

Image 1. The counties of the preschool teachers' employment.

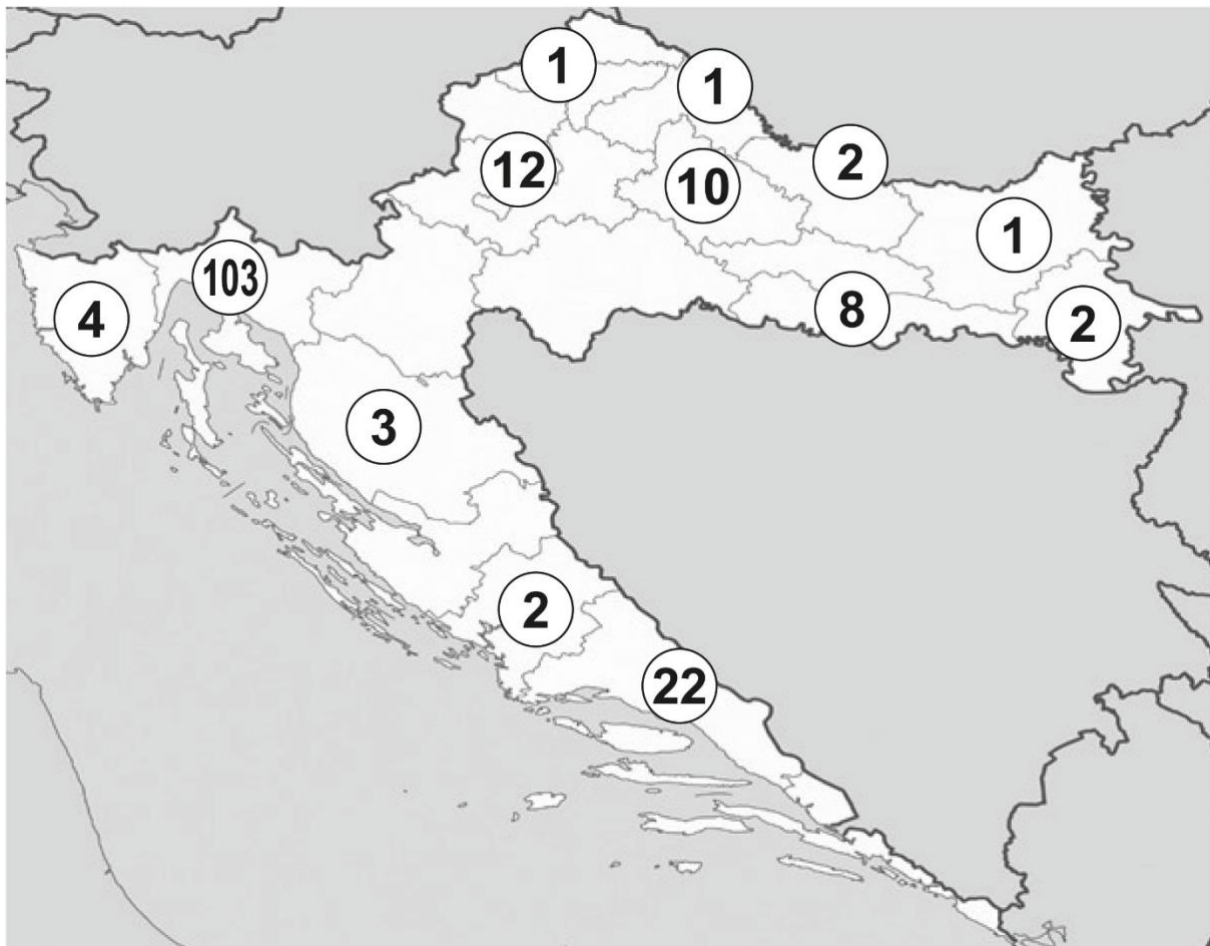


Table 1 shows that the attendants are averagely 38 years old and have 10 years of service. The largest percentage (66.08%) has a chronological age of 22 to 42 (Chart 1), and half of the attendants who have participated so far have 10 years of service (Chart 3).

It is also observable (Table 1, Chart 2) that almost 60% of the preschool teachers who have attended the education for Leader of Kinesiological Activities for Early and Preschool Children completed the undergraduate study, i.e. there is a small number of those (42.69%) who completed the graduate university study Early and Preschool Education.

Table 1. Basic descriptive parameters, frequencies and percentages.

Variable	M ± SD	Category	Number	%
age	1984.60 ± 9.17	1940<x<=1950	1	0.59
		1960<x<=1970	11	6.43
		1970<x<=1980	46	26.90
		1980<x<=1990	60	35.09
		1990<x<=2000	53	30.99
study	1.42 ± 0.49	undergraduate	98	57.31
		graduate	73	42.69
service	10.34 ± 8.68	-5<x<=0	7	4.11
		0<x<=5	60	35.29
		5<x<=10	31	18.24
		10<x<=15	25	14.71
		15<x<=20	25	14.71
		20<x<=25	11	6.47
		25<x<=30	6	3.53
		30<x<=35	4	2.35
		35<x<=40	1	0.59

Legend: M- mean, SD- standard deviation

Chart 1. Distribution of results in the variable Age.

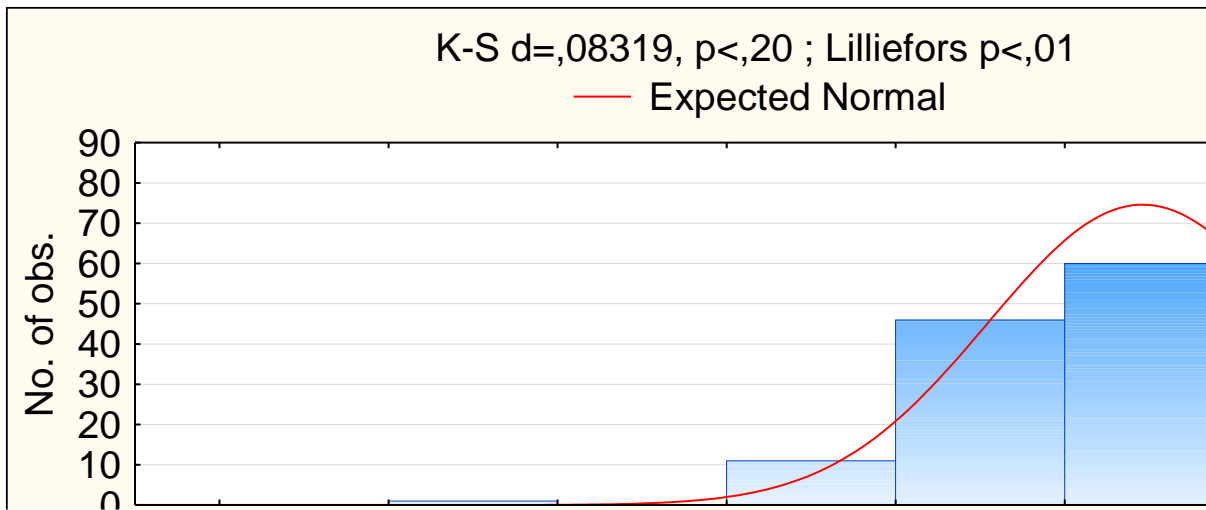


Chart 2. Distribution of results in the variable Study.

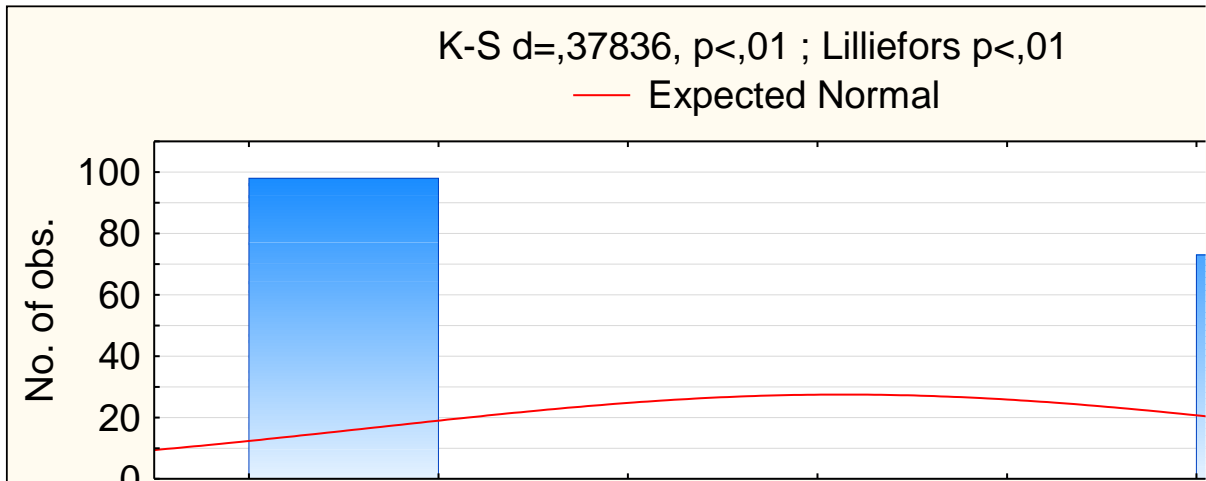
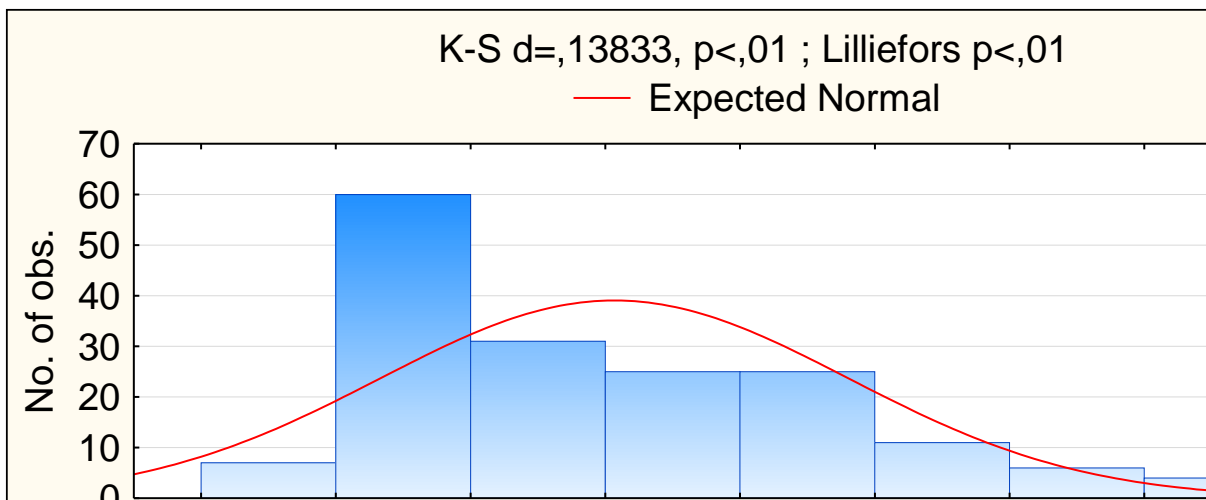


Chart 3. Distribution of results in the variable Service.



There is a statistically significant difference ($p > 0.05$) between preschool teachers who completed the undergraduate and those who completed the graduate university study Early and Preschool Education in the variables Service and Age. The preschool teachers who completed the graduate study are on average seven years younger and have 6.5 years of service.

Table 2. Differences in the variables Age and Service with respect to the variable Education.

Variable	M graduate	M undergraduate	t-value	df	p
service	6.60	13.08	-5.15	168	0.00**
age	1988.17	1981.94	4.68	169	0.00**

Legend: M- mean, df- degrees of freedom, ** $p < 0.01$

The correlation between the research variables (Table 3) indicates a statistically significant ($p > 0.05$) correlation of the variable Age with Education and Service, i.e. of Education and Service. Younger preschool teachers have a higher level of education and less years of service. Furthermore, a higher chronological age consequently means significantly more years of service.

Table 3. Correlation among the variables Age, Education and Service.

	Age	Education	Service
Age	1.00		
Education	-0.34*	1.00	
Service	0.83*	-0.37*	1.00

Legend: * $p < 0.05$

Table 4 gives the results of the linear regression analysis of results for the variable Education. It is clear that the years of service have a significant influence on the level of education and it can be said that in the future the profile of the preschool teachers who will enrol in the education for Leader of Kinesiological Activities for Early and Preschool Children will include those with a completed graduate study and with less years of service.

Table 4. Linear regression analysis of results for the variable Education

		b*	Std.Err. of b*	b	Std.Err. of b	t(167)	p
Education R= ,37 R2= ,13 F(2,167)=13,61	Intercept			-9.91	13.92	-0.71	0.48
	Age	0.11	0.13	0.01	0.01	0.83	0.41
	Years of service	-0.28	0.13	-0.02	0.01	-2.17	0.03*

Legend: b- value, Std.Err of b- standard error of a b-value, t-value, p < 0.05

DISCUSSION

We live in times of intensive technological development which extremely changed the way we live, so new knowledge and lifelong education programmes have become a constituent part of the system. The main findings of this research have shown that 66 % of the preschool teachers who completed their education for Leader of Kinesiological Activities for Early and Preschool Children are between 22 and 42 years old; 15 % of them completed the graduate study; almost 40 % of them have up to five years of service; 59 % of them are from the Primorje-Gorski Kotar County, while the remaining 41 % are from other parts of the Republic of Croatia. The age span of the participants in the education represents the period of life when huge investments are made into education and professional development, whereas the higher percentage of those who completed the undergraduate study is logical due to its accessibility. The preschool teachers who participated in educations linked to movement feel significantly more competent for its integration into their educational work (Blanuša Trošelj, Žigulić and Petrić, 2022). Almost 60 % of the preschool teachers who attended the education have more than five years of service. Preschool teachers with more years of service have a better opinion about the benefits brought by movement and about the need for professional training (Blanuša Trošelj, Žigulić and Petrić, 2022). The greater awareness of preschool teachers who have more years of service about the value of movement and the need for additional education starts from the assumption that persons with a higher chronological age have suffered from spoiled health more often, which is obviously linked to insufficient levels of physical activity. Although it was expected that most attendants would come from the Primorje-Gorski Kotar County due to the education being held there, still there were 41 % of them who came from other parts of the Republic of Croatia which is surprising. The authors are of the opinion that the education is obviously well constituted and interesting, and this was recognised by preschool teachers throughout the Republic of Croatia. The education is based on contemporary scientific knowledge with an

interdisciplinary approach to movement with early-aged and preschool children. Therefore, the emphasis is not only on the motor content, but the context for the approach to movement is much wider.

The attendants are statistically significantly different in the criterion of the completed study, i.e. preschool teachers who completed the graduate study are on average seven years younger and have almost seven years of service less. It is interesting to notice that some studies suggest that there is no proof that teachers with less years of service (0-3 years) have lower competencies, while other findings indicate a diminished quality of teaching for persons who have 4 to 5 years of service (Graham, White, Cologon and Pianta, 2020). Therefore, lifelong education programmes are seen as a tool to retain the level of motivation and the feeling of self-actualisation. Lifelong learning is defined as the activity of learning throughout life, which is especially important in the current educational environment with upcoming changes (Rogiers, Merchie and Keer, 2019). The support and professional training should be a priority for all teachers, not only beginners (Graham, White, Cologon and Pianta, 2020), while the continued leadership and mentoring could contribute to the development of younger colleagues with less years of service (Chin, Nicholaus, Wee and Kuan, 2019). The authors of this research state that in informal chats with the participants they emphasized the importance of enhancement and support by the leader for motivation, wish for change and application of newly acquired knowledge.

Further analyses predict future enrolment of attendants (preschool teachers) with less years of service and a completed graduate study. The authors think that such results are still desirable for the educational system. Observing the professional as an individual, it can be assumed that from the beginning of their work experience they will apply new knowledge in their work with children, where movement will be considered the primary factor of integrated learning. Understanding the importance of movement which has a latent role in each and every children's research action, the preschool teacher creates conditions for an integral development. The already mentioned education is directed toward making preschool teachers aware of the benefits and ways of implementing physical activity during the whole stay in the kindergarten, as well as applying practical examples of integrated activities. By their actions and by living the movement, preschool teachers become a pattern, or a model from which children learn. Preschool teachers can directly influence the employment of professional knowledge in their practical work (Šagud, 2011). Therefore, the fact that preschool teachers with a higher level of education and less years of service apply new knowledge based on scientific findings from the

very beginning of their career represents an exceptional practical contribution in the whole educational vertical. By collecting experience on such basis, they create the conditions for a systematic work with children and a better insight into their needs. The research which studied the education of parents with the purpose of raising their awareness of the importance of physical activity for early-aged children in kindergarten and primary school children presented significant positive changes at the level of weekly physical activity for both children and parents (Vujičić, Petrić, Pejić Papak, 2018; Petrić, Holik, Blažević, Vincetić, 2019). Besides, the authors have indicated how important the behavioural pattern of the parents is, and how it influences children's life. Since children spend a lot of their time in the kindergarten with their preschool teachers, their behaviour, or pattern, can also have a role in the formation of life habits. That is why the authors of this research emphasize the importance of transmitting new knowledge to education staff, regardless of their chronological age or length of service.

The contemporary paradigm of early and preschool education is based on integrated learning directed toward the quality of the child's environment (Petrić, 2021). According to the National Curriculum of Early and Preschool Education of the Republic of Croatia, preschool teachers have the task to build a partnership with parents and ensure an integral development of the child (Ministry of Science, Education and Sport, 2014).

CONCLUSION

Integrated movement is certainly a part of the contemporary paradigm which creates the conditions for an integral development of the child. The greatest contribution offered by this research is the observable need of the participants for further training on the topic of integrated movement, whereas the large age span indicates the preschool teachers' huge interest, regardless of the length of their service. The prediction results which point to a higher level of education and less years of service are of a great practical significance, because from the beginning of their career we can influence a higher level of physical activity among children, but also preschool teachers. In longer terms, such an approach ensures a healthier work environment since the risk of various diseases is prevented. There is a small number of educations, but also studies, dealing with the integration of movement in the domain of the preschool teacher's role. Therefore, the need for further research persists. In the future, it would be especially good to investigate the level of physical activity of preschool teachers and the quality of life. It is precisely the low level of physical activity of them can be crucial in not

integrating movement into everyday work. For the first time in the Republic of Croatia, certain characteristics of preschool teacher who believe in the integration of the movement and want to apply it daily have been determined. They should be understood as representative and basic in defining further educational policies of preschool teachers who will encourage the complete motor development of children by their example and direct work.

The education for the Leader of Kinesiological Activities for Early and Preschool Children is widespread. This indicates high working quality, but also the need for further educations which would reach a larger number of people working in the system thus improving the quality of education practice.

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Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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