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Alexandra Pappa
Ph.D., University of Ioannina, Ioannina, Greece

Maria Sakellariou
Professor, University of Ioannina, Ioannina, Greece

Corresponding Author:
Alexandra Pappa
Ph.D., University of Ioannina, Ioannina, Greece

Evaluation of the quality of meals and sleep in kindergartens of general and special education

Alexandra Pappa and Maria Sakellariou

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Abstract
The quality of education is directly linked both to the socio-emotional development and balance of infants and to their later academic career. The curriculum is today considered an organized tool in the hands of the teacher, the purpose of which is to contribute in a scientific and thorough way to the holistic development of infants. The modern school environment should be organized based on scientific and pedagogical criteria, always with a view to satisfying the personal and educational needs of children. The purpose of this research was to investigate the views of General and Special Education teachers on the quality of the meals and sleep in Greek Kindergartens. The results of the research showed that teachers consider it very important during the snack-meal that all the children sit at the same table and talk to each other, while regarding to sleep the space should help relax the children and provide employment for children who do not sleep. Finally, it emerged that the quality of snack-meal and sleep is affected by the number of students per class, as well as by the geographical area where the Kindergarten is located.

Keywords: Quality of education, socio-emotional development, academic career

1. Introduction
Education is a fundamental right of every human being and is considered a critical social institution and an important development mechanism (Basov, 2019; Goczek, Witkowska & Witkowski, 2021) [2, 12]. Quality is a multidimensional concept and in many cases it is associated with a variety of factors, which lead to the formulation of various definitions for its content, but also the ways of its utilization (Oakland, 2014) [22]. In the field of education, the definition of quality differs depending on the person or body that attempts to give the conceptual definition, with the result that different definitions are formulated by teachers, parents, bodies, etc. (Elassy, 2013) [9]. The different perspectives in which the aims and objectives of quality are defined in combination with the social and political role that education plays today make it very difficult to clearly conceptualize educational quality (Rentzou, 2015) [26]. According to the Pedagogical Institute of the Greek Ministry of Education, the quality of education is defined as the result resulting from the operation and interaction of a set of parameters of a stochastic nature, based on which the frameworks of organization, administration, operation and social acceptance of the educational system are formed (MNERA -P.I., 2008) [19].
One of the most important characteristics of quality in education is the curriculum, the objectives and characteristics of which should be clearly defined, so as to achieve a high level of quality (De la Vega, 2020; Mwebi, 2015) [5, 20]. The purpose of the curriculum at the Kindergarten level is the holistic development of the child, namely the physical, mental and socio-emotional development (Yali, 2021) [31] and should be oriented towards meeting the needs of the children and harmonize with the general philosophy of education (Li & Feng, 2013; Xiong, 2019) [15, 30]. In addition, all stakeholders of the educational process are crucial to comply with and jointly serve the goals of the curriculum and the mission of the educational institution (Cedillo, Cabrera & Japón, 2020; Diez *et al*., 2020; Wan & Guo, 2022) [4, 6, 29]. In order to contribute to the upgrading of the level of educational quality, the curriculum should respond to the role of the Kindergarten, advocate its principles and respect the cultural and socio-cultural identity of each country in which it is applied (Yali, 2021;

Yan, 2002) [31, 32]. Additionally, an important characteristic of quality in education is the school environment, as it is the place where children spend many hours of their day (Ramos & Vicera, 2019) [25]. The way teachers choose to organize the Kindergarten space must respond to the developmental needs and the particularities of early childhood (Penteri *et al*., 2022a; Penteri *et al*., 2022b) [23-24]. When designing the space, great emphasis and attention should be given to the areas of hygiene and safety, such as for example the size of the class and its pedagogic-teaching dimension, i.e. the equipment and materials available (Madani, 2019) [16].

In the modern educational reality, the most effective means for improving education is considered assessment (Castro & Tumibay, 2021; Kinzie, 2019) [3, 13]. Evaluation, through organized processes, contributes to the improvement of the quality of teaching, learning, research and the overall management of educational institutions, regardless of level (Manatos, Sarrico & Rosa, 2017) [17]. The establishment of a system of evaluation indicators combined with scientific data collection would contribute to the objective recording of the results of evaluation in the field of education, thus promoting its development (Niu, 2022) [21]. In the literature, a positive correlation has been established between the design of a quality curriculum and the learning environment, the educational staff, the teaching methods, the administration, the courses and the logistical infrastructure available to each school unit (Abdullahi & Kadir, 2019; Kopas-Vukašinović & Savić, 2020) [1, 14].

2. Materials and Methods

2.1 Purpose of the exploratory study

The purpose of this research was to investigate the views of General and Special Education Kindergarten teachers regarding the quality of meals and sleep in Greek Kindergartens.

2.2 Exploratory tool

The most appropriate exploratory tool for the needs of this research was considered the questionnaire, which included "open" and "closed" type questions. The participants evaluated proposals related to the quality of the school environment in Preschool Education, stating on a 5-point Likert scale their degree of agreement or disagreement with the content. Completing the questionnaire was anonymous, without recording any personal information of the participants.

3. Results

A total of 1204 teachers from all over Greece, who worked in General Education Kindergartens and in Special Education structures (Special Kindergartens, Integration Departments and Parallel Support) took part in this research. As shown in Figure 1 below, 72.0% (N: 867) of teachers worked in General Education and 28.0% (N: 337) in Special Education.

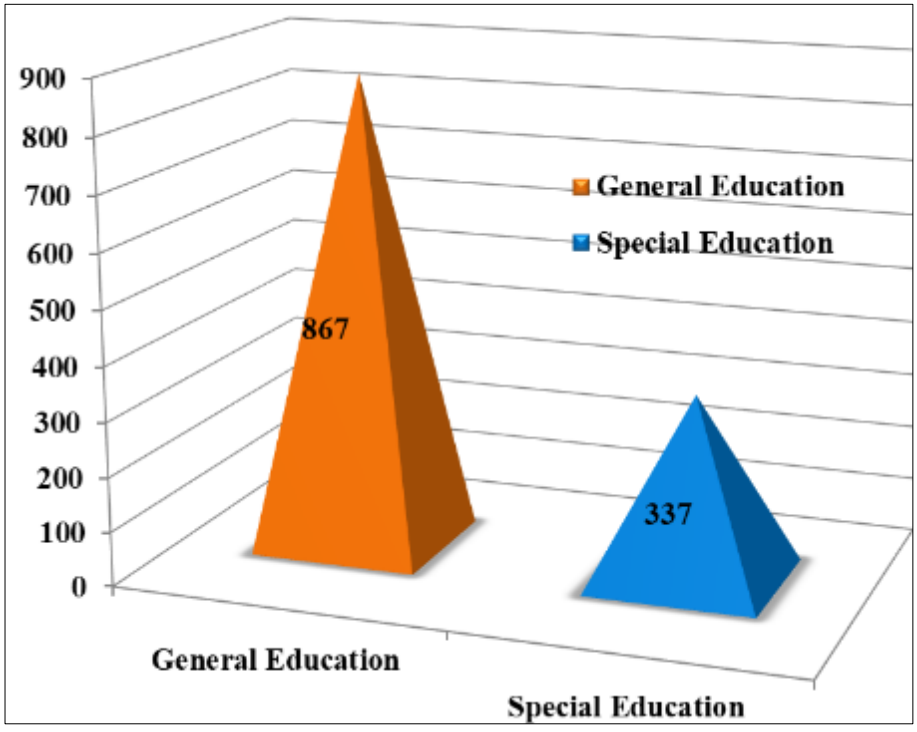


Fig 1: Type of education of participating teachers

The answers of the teachers regarding the number of children attending in each class (Figure 2) the percentages are distributed as follows: on 7,7% (N:93) attend 1 to 5 pupils, on 12,2% (N:147) attend 6 to 10 pupils, on 62,5% (N:319) attend 11 to 15 pupils, on 25,8% (N:311) attend 16 to 20 pupils and on 27,7% (N:334) attend 21 pupils and over.

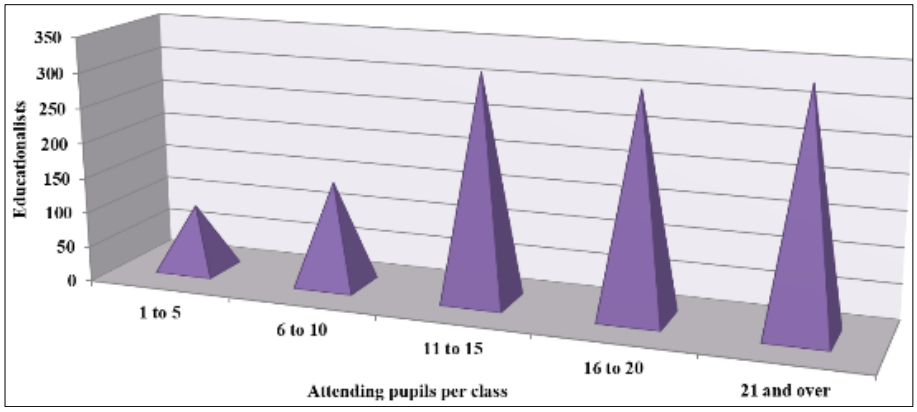


Fig 2: Attending pupils per class

Regarding the demographic characteristics of the geographical area where the school is located, as shown in Figure 3 below, the largest percentage of teachers declared that they belong to an urban area (52.9%, N:637), while smaller percentages were recorded for semi-urban (24.2%, N:291) and rural (22.9%, N:276) areas.

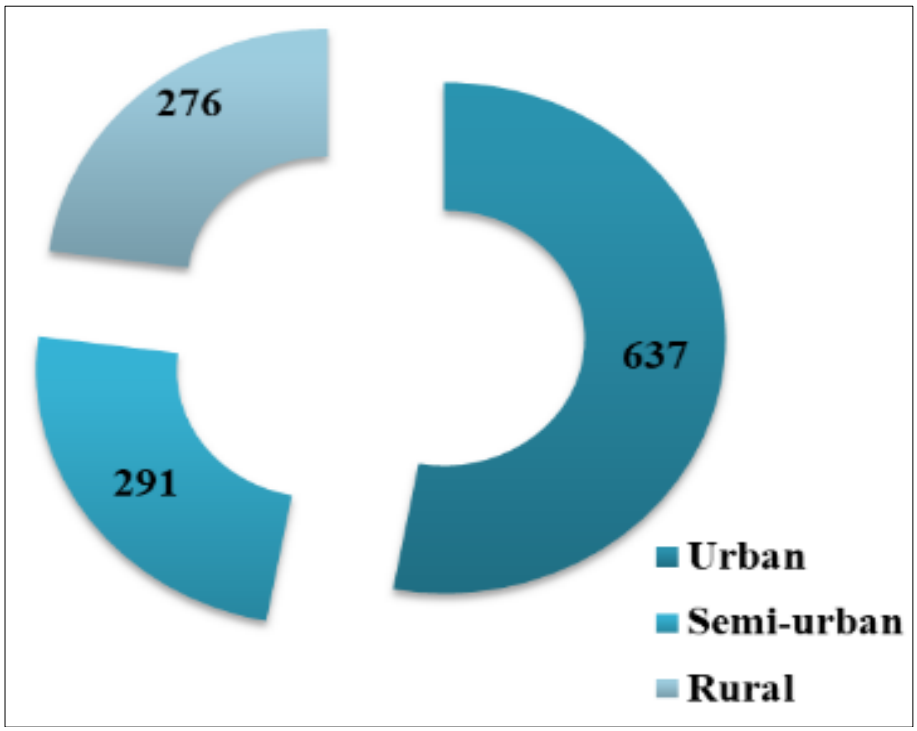


Fig 3: Geographical origin of educationalists

Furthermore, 33.6% of Kindergarten participants in the survey stated that children with any type of disability sit at the same tables as their classmates during snack and meal. 38.7% of teachers rated it as very important that children can talk during snacks and meals, with 43.1% judging it as extremely important. The percentages of teachers' responses are presented in detail in Table 1 below.

Table 1: Evaluation of snack and meal

	Not at all	Slightly	Moderately	Very	Extremely
	N (%)	N (%)	N (%)	N (%)	N (%)
During snacks and meals, children with disabilities sit at the same tables as their peers.	92 (7.6%)	36 (3.0%)	146 (12.1%)	405 (33.6%)	525 (43.6%)
During the snack and the meal, the children are given the opportunity to talk to each other.	22 (1.8%)	47 (3.9%)	150 (12.5%)	466 (38.7%)	519 (43.1%)

According to 35.0% of Kindergarten teachers in the survey, it is very important that the structure and organization of the sleeping area contribute to the children's relaxation, while 22.3% considered it extremely important. 29.3% of the teachers in the research sample stated that it is very important to organize activities for children who do not sleep or wake up early, while on the contrary 20.8% stated that there is no such provision for these children. The responses are detailed in Table 2 below.

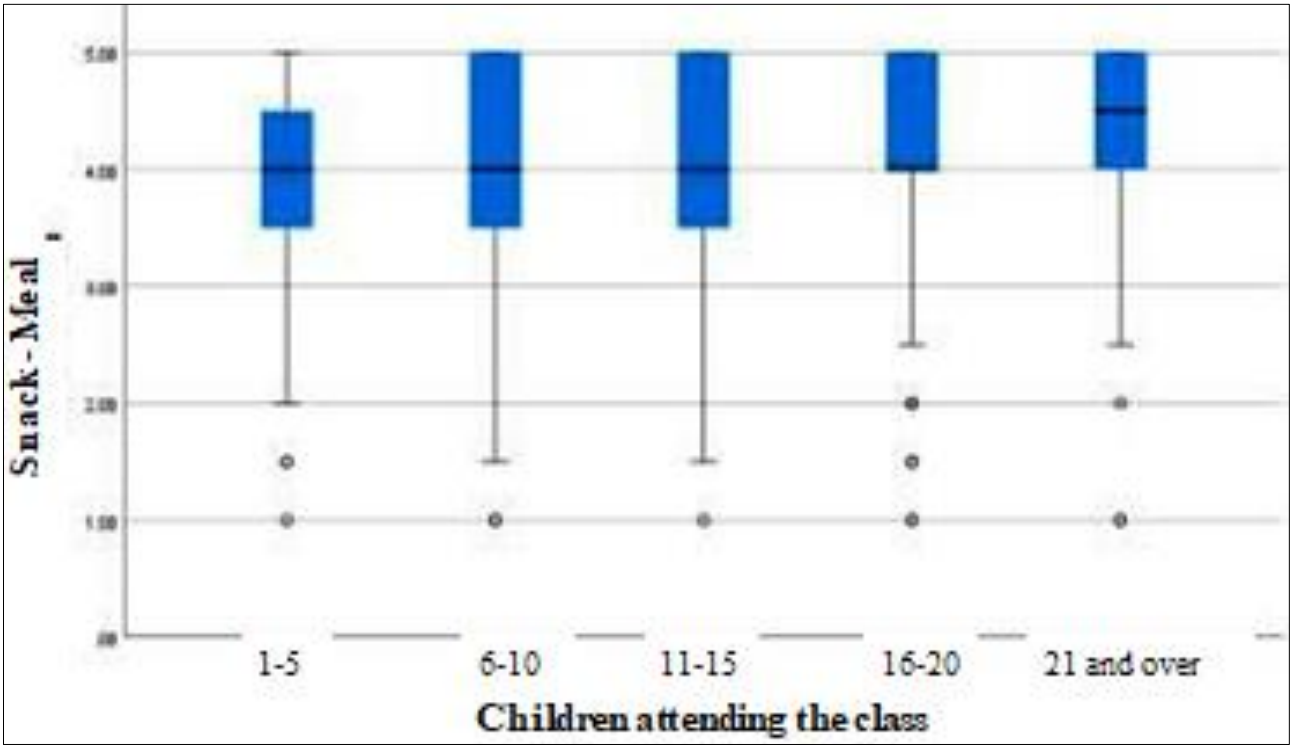
Table 2: Evaluation of sleep in Kindergarten

	Not at all	Slightly	Moderately	Very	Extremely
	N (%)	N (%)	N (%)	N (%)	N (%)
The structure and organization of the sleeping area helps children relax.	158 (13.1%)	142 (11.8%)	214 (17.8%)	421 (35.0%)	269 (22.3%)
Activities are organized for children who wake up early or do not sleep.	251 (20.8%)	185 (15.4%)	238 (19.8%)	353 (29.3%)	177 (14.7%)

During the statistical analysis of the survey data, we proceeded to a variance analysis test, where a statistically significant correlation emerged between the dimension "Snack-meal" and the number of children attending the class with p=0.047. The estimates obtained from the teachers' answers are presented in detail in Table 3 below, while the statistically significant differences are attributed by the comparative Boxplot 1 that follows.

Table 3: Dimension «Snack-meal» in relation to the number of children attending the class

	N	Mean value	Standard variation	Standard error	95% C.I.		
					Lower limit	Upper limit	p
1-5	93	4.00	.89	.09	3.82	4.18	
6-10	147	3.97	.97	.08	3.81	4.12	
11-15	319	4.06	.89	.05	3.96	4.15	.047
16-20	311	4.14	.87	.05	4.04	4.24	
21 and over	334	4.19	.81	.04	4.10	4.28	
Total	1204	4.10	.88	.03	4.05	4.15	

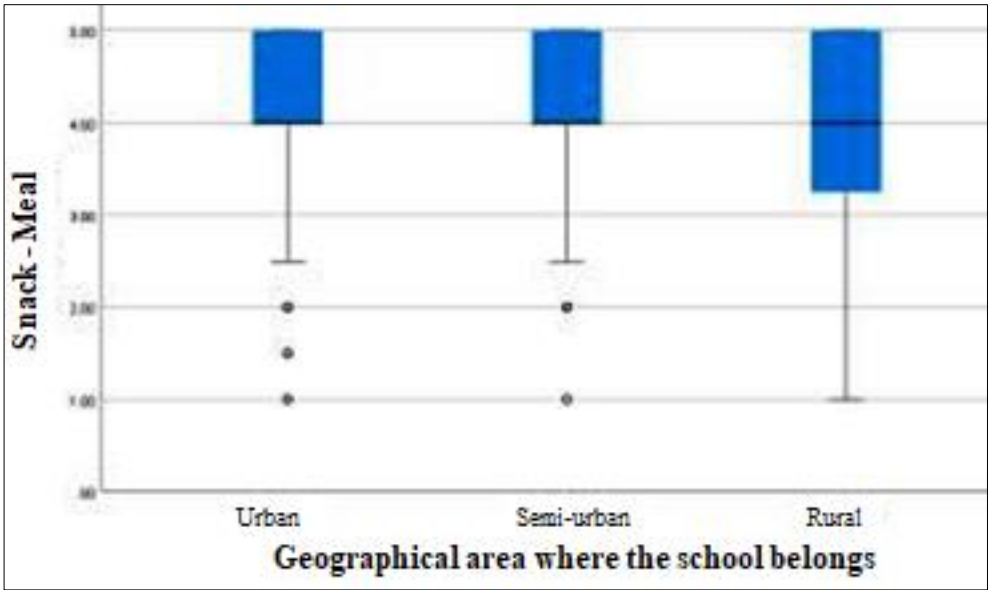


Boxplot 1: Dimension «Snack-meal» in relation to the number of children attending the class

From the analysis of variance carried out, statistically significant differences emerged between the dimension "Snack-meal" and the geographical area in which the school unit of the participating teachers is based with p=0.025. Specifically, we see that F(2)=3.682 and in the "Urban" category (4.15) there were statistically significantly higher values compared to the "Rural" category (3.98), i.e. the participants whose Kindergarten belongs to an urban area declared a greater degree of pleasure for the snack-meal in their department compared to those whose school is in a rural area. In Table 4 below, the estimates are presented in detail and the statistically significant differences are attributed by the comparative Boxplot 2 that follows.

Table 4: Dimension «Snack-meal» in relation to the geographical area of Kindergarten

	N	Mean value	Standard variation	Standard error	95% C.I.		
					Lower limit	Upper limit	p
Urban	637	4.15	.86	.03	4.08	4.21	
Semi-urban	291	4.11	.86	.05	4.01	4.21	.025
Rural	276	3.98	.94	.06	3.87	4.09	
Total	1204	4.10	.88	.03	4.05	4.15	

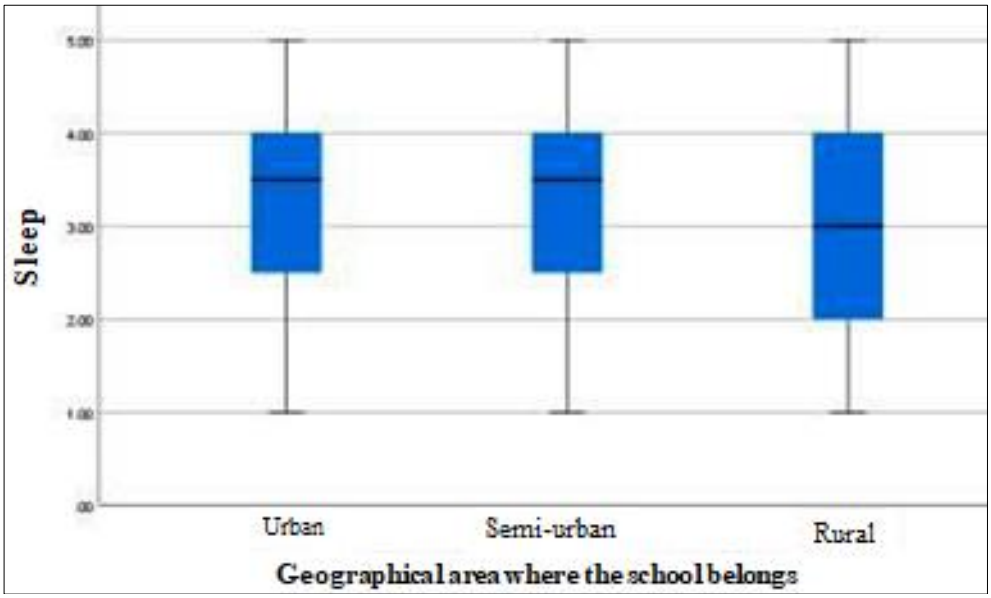


Boxplot 2: Dimension «Snack-meal» in relation to the geographical area where the school belongs

Additionally, the analysis of variance revealed a statistically significant correlation between the "Sleep" dimension and the geographic area where the Kindergarten of the teacher survey participants is located. In more detail, we observe that F(2)=3.280 and in the "Urban" category (3.28) there are statistically significantly higher values compared to the "Rural" category (3.07), which means that the participants who worked in schools in urban areas showed a greater satisfaction with sleep quality compared to their rural counterparts. In Table 5 below, the estimates are presented in detail and the statistically significant differences are attributed to the comparative Boxplot 3 that follows.

Table 5: Dimension «Sleep» in relation to the geographical area of Kindergarten

	N	Mean value	Standard variation	Standard error	95% C.I.		p
					Lower limit	Upper limit	
Urban	637	3.28	1.15	.05	3.19	3.37	.038
Semi-urban	291	3.22	1.12	.07	3.09	3.35	
Rural	276	3.07	1.17	.07	2.93	3.21	
Total	1204	3.22	1.15	.03	3.15	3.28	



Boxplot 3: Dimension «Sleep» in relation to the geographical area where the school belongs

It is worth noting that from the processing of the research data, no statistically significant correlation emerged when comparing the dimension "Snack-meal" with the type of education (General, Special Education), as p amounted to 0.720, nor when comparing the dimension "Sleep" with the number of children attending the department, since p reached 0.237.

4. Discussion of the Conclusion

This research aimed to investigate the opinions of General and Special Education teachers on the quality of the school

environment in Kindergarten. Kindergarten teachers in the majority rated it as very important that students with any type of disability sit with their classmates at the same table during snack and meal. Also, it is of great value for children to be able to discuss and exchange opinions and experiences during mealtime, cultivating in this way their social and emotional skills. These opinions of teachers have been expressed in other similar researches (Germanos, 2010; 2015; Matsagouras, 2009) [11, 18].

In addition, the research showed that the space used for children's relaxation, as well as for the sleep of students who stay at noon in the All-Day Department, should be structured in such a way that the children can rest. However, a large share of the teachers in the sample disagrees that such spaces are available in Kindergartens, agreeing with similar surveys, where the serious issues of insufficient and often inappropriate spaces in which Greek schools are housed were captured (Doliopoulou, 2003; Tsalagiorgou & Avgitidou, 2017) [8, 28]. Then, teachers' answers to the question of whether activities are organized to occupy children who wake up early or do not sleep at all are divided, as almost half of the participants answered negatively, in agreement with other researches (Sylva *et al*., 2004; Tsalagiorgou & Avgitidou, 2017) [27, 28].

Furthermore, it emerged that the number of students studying in each class of the Kindergarten affects the quality of the snack-meal. Specifically, teachers who teach classes with more than 21 students expressed higher levels of satisfaction with the quality of the snack-meal compared to their colleagues who have taken charge of smaller classes. A possible explanation for this particular finding is the fact that crowded classes are usually located in areas with a large population, where sufficient logistical and spatial infrastructure is provided. The teachers of the large classes, therefore, have more flexibility to organize the Kindergarten space and make use of the available equipment, always aiming to satisfy the needs of the toddlers.

In addition, the correlations of snack-meal and sleep with the geographical area where the school unit of the participating teachers is based are of particular importance. The available logistical infrastructure and the spaces offered for the childrens' snack-meal and sleep in the Kindergarten were evaluated as very satisfactory by the teachers in urban areas, in contrast to those in semi-urban and rural areas. The student population of urban centers is higher and therefore there are greater requirements for the supply of equipment and the provision of suitable areas for eating and resting infants. The association of the geographical area of the school with the quality of food and sleep of the children in the Kindergarten is justified, due to the financial funds available from the municipal authorities. The amounts available for the purchase of equipment and the organization of spaces in urban schools are greater compared to rural areas, so urban teachers work in better school environments.

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