MODESTUM EURASIA Journal of Mathematics, Science and Technology Education, 2021, 17(12), em2046
ISSN:1305-8223 (online)
OPEN ACCESS Research Paper https://doi.org/10.29333/ejmste/11360

Health Education in Pre-school Institution: Integration, Effectiveness, Improvement

Vincentas Lamanauskas [1*], Daiva Malinauskienė [1], Dalia Augienė [2]

[1] Institute of Education, Vilnius University, LITHUANIA
[2] Independent Researcher, Šiauliai, LITHUANIA

Received 8 October 2021 ▪ Accepted 17 November 2021

Abstract

Health education is one of the key components of pre-school education. Preschool age children have acquired knowledge about health, and this forms the basis for developing, maintaining, and strengthening their health. However, children's knowledge of health is insufficient and their healthy lifestyle skills are insufficiently developed. On the one hand, the deteriorating trends in children's health raise certain challenges to the process of pre-school education, on the other hand, their health education possibilities are not fully known and exploited. Health education integration into pre-school/pre-primary education programmes remains a key priority of education policy. Although the importance of developing children's health competence is already noted in pre-school/pre-primary education programmes, various research studies show that children's health indicators are deteriorating.

In January - March 2021, a qualitative research study was conducted, in which 102 kindergarten teachers from various Lithuanian preschool educational institutions participated. The aim of the research was to analyse the factors that promote, limit, and determine the integration of health education into pre-school education programmes and to reveal improvement possibilities.

It has been established that the integration of health education is promoted by children's health problems and the changing understanding of the importance of children's health education. Proper teacher preparation, purposeful activities of the institution, and community involvement in health education remain essential components that determine the effectiveness of health education. Despite the positive attitude and motivation of teachers towards health education, there are still many unused opportunities for improving health education, which should be assessed both at the level of education policy and educational practice, respectively.

Keywords: health education, quantitative content analysis, qualitative research, pre-school education

INTRODUCTION

Education is undoubtedly the basis for good health and a universal and cost-effective platform for health promotion. Health education is most effective at school, because it reaches a man at his most receptive period of life - childhood and adolescence (Lamanauskas, 2018). In addition, pre-school education plays an important role in reducing social inequalities and related inequalities in health sphere (Woynarowska, 2017). Not without reason it is said that in many countries a lot of attention and investment is given to comprehensive promotion of health at all levels of education system. This is especially important in the early stages of education. On the one hand, health education is an integral part of pre-school education, on the other hand, the possibilities are increasing to integrate health strengthening, health promotion, healthy lifestyle skills and other issues into pre-school education programmes. Although research in this area is growing rapidly, it remains insufficient.

✉ vincentaslamanauskas@yahoo.com **(*Correspondence)** ✉ daiva.malinauskiene@sa.vu.lt ✉ augiene@gmail.com

Contribution to the literature

- The study provides a deeper understanding on how health education is integrated in pre-schools and highlights key promoting and limiting factors.
- The study revealed that the integration of health education is promoted by children's health problems and the changing understanding of the importance of children's health education.
- The study revealed untapped opportunities for integrating health education into the educational process and showed ways to make this process more efficient.

International Context

Obviously, one of the fundamental principles of health education is the need to take care of, strengthen and maintain health. There is a constant search for ways to effectively improve people's health, especially this makes sense in pre-school age. Researchers have no doubt that health education at an early age is important and meaningful because it forms long-term skills (Galvao, 2018; Kann et al., 2001). Finally, the quality of pre-school education is crucial for long-term positive impact. Health education in pre-school is also considered an investment in the future (Yoshikawa et al., 2013). Research also shows that properly designed and implemented health education programmes have a positive effect on the development of children's healthy lifestyle, healthy lifestyle habits and so on (Natsiopoulou et al., 2010; Parcel et al., 1983). Even in such economically developed countries as Japan, New Zealand, etc., health education remains a very important part of general education. Despite the differences existing between countries, common problems and challenges are identified. Researchers claim that it is not enough to just talk about children's health education, as parental influence is often negative (e.g., on nutrition issues, etc.) (Watanabe & Dickinson, 2017). On the other hand, teacher preparation is one of the key areas for effective health education. It is obvious that the competence of teachers in the field of health education is influenced by the level of theoretical preparation, knowledge of various health education methods and the ability to apply them in practice, a responsible attitude to children's individual characteristics and health. Researchers also emphasize the importance of teachers` digital literacy in health education. Digital literacy, according to Matthews (2021) should be an important consideration for the development of the future health education and educators. The preparation of pre-school teachers in this aspect is insufficient, educational institutions face various challenges. According to Smith et al. (2005), health education faces many challenges in teacher preparation and is primarily related to the quality of health education programmes and their proper implementation. Moreover, although schools employ social workers and medical staff, teachers are key actors in health education because they know students' abilities, level of cognition, personal and social needs (Aydin, 2016). Researchers also agree that health education is not only training to cope with ailments / diseases and the like, but also encourages taking care of and strengthening one's own and others' health (Kurowicka, 2019). On the other hand, the health of the teacher himself is forgotten. Researchers emphasize that the health of students, prospective teachers, is a critical factor in the overall context of health education (Emamgholipour Sefiddashti et al., 2020). Thus, the statement that „the foundations of lifelong health are built in early childhood" (Center on the Developing Child at Harvard University, 2010, p. 1) is undoubtedly significant in the analysis of health education issues in pre-school education.

National Context

Over the last decade, important strategic decisions have been made in Lithuania, leading to changes in the national health system. Lithuania, taking into account the new European health policy document "Health 2020: a European Policy Framework and Strategy for the 21st Century", has prepared the National 2014–2025 Health programme. It provides for more attention to be paid to children's health strengthening and its education (Lithuanian Health 2014-2025 programme, 2014). Lithuania's progress strategy "Lithuania 2030" also emphasizes that healthy lifestyle must be consistently developed from an early age. Ineffective health promotion from early childhood has a negative impact on children's morbidity and learning outcomes. Research shows that investing in early childhood gives the greatest benefits, therefore, health promotion and education questions have to be priority questions on the political agenda of any country (EU Action Plan, 2014).

In Lithuania, health promotion has become an integral part of education process, therefore, a lot of programmes are designed and implemented in educational institutions; a number of health promotion and education programmes, health promotion projects, various educational and preventive events take place, which integrate the issues of health and healthy lifestyle education of children, adolescents and young people (Health Education Framework programme, 2012; Health and Sex Education and Family Training Framework programme, 2016; Pre-school Health Promotion Programmes, Health promoting school projects, etc).

Analysing the tendencies of deteriorating health of pre-school age children, it turns out that they are related

to insufficient physical activity of children, poor nutrition, disregard for sleep and rest regime, lack of healthy lifestyle habits and other unfavourable factors (Adaškevičienė & Strazdienė, 2013; Lamanauskas & Augienė, 2019; Strazdienė & Burkė, 2019). The reasons for this can be insufficient integration of children's health promotion measures into general education, failure to ensure children's daily physical activity, low qualification of teachers on health topics, insufficient cooperation with family and health care specialists, and other reasons.

Health promotion in pre-school institutions is becoming an increasingly important element of educational process and is closely related to the development of healthy lifestyle skills. Children's attitudes towards healthy lifestyle and health promotion should be formed at an early age during the educational process and additional activities, trying to involve not only parents, but also the entire community of the educational institution. Health promotion programmes developed by pre-school institutions provide for the integration of health education content into individual health programmes of the institutions and groups.

Promoting children's health is a multifaceted activity that includes a set of measures, such as health education, health care, and a creation of a health-friendly psychosocial and physical environment. Health education is an integral part of the whole education system, implemented in the general activities of education system: training teachers and other specialists, developing and implementing national, international, or other programmes, publishing teaching aids, developing health projects, and working consistently and systematically with children on health issues.

Preschool age is crucial in shaping the physical and mental health of children. By the age of seven, there is an intense development of the body of children. With the formation of the functional body systems, the main personality traits, character, etc. are formed. However, children's health remains a problem area. Not only the trend of deteriorating children's health is observed, but also social health inequalities (Našlėnė et al., 2020). Clearly, it is important at this stage to develop children's healthy lifestyle knowledge and practical skills. Therefore, improving children's health, developing healthy lifestyle skills, health promotion is undoubtedly health priority area of pre-school education. On the other hand, any system will not work efficiently and systematically unless it is improved, updated, modernized. Therefore, it is sensible to analyse the situation of health education in pre-school education institutions, evaluate the efficiency of the process and modernize the content of health education.

Thus, the aim of the research was to analyse the factors that promote, limit, and determine the effectiveness of the integration of health education into pre-school education programmes, and to reveal improvement possibilities.

In order to realise the aim of the research, the research questions were formulated:

- What factors promote/limit the integration of health education?
- What factors determine the effectiveness of health education?
- How is the role of the pre-school teacher in health education assessed?
- What are the possibilities to improve health education?

It is likely that the results of the empirical research will help to effectively improve the process of pre-school education. The position of teachers is important not only in matters of children's health education, but also in all matters relating to the education and care of pre-school children. Therefore, the survey of teachers' opinions can be an important indicator in assessing the current situation of children's health promotion and education and in making important policy decisions to improve the performance of the entire health sector.

RESEARCH METHODOLOGY

General Background

A qualitative study was conducted in January-March 2021. The research is based on the premise that the research studies of the opinions and the assessments of the educational participants are important because they allow to identify relevant problems, to clarify the already known ones, to predict the possibilities for improvement. Relatively little structured textual information was collected during the study. The study is based on the assumption that semantic units (words, their compounds, etc.; their presence or intensity in certain text units) reflect certain aspects analysed in the study. According to Lune and Berg (2017), qualitative research provides the opportunity to delve into the meanings, concepts, definitions, characteristics, descriptions, etc. of the phenomena in order to reveal the meaning.

Sample Selection

The study involved 102 pre-school teachers. The geographical distribution of the respondents is quite wide, i.e., the respondents from more than 35 pre-school education institutions of the country's municipalities. In terms of professional qualifications, 62 teachers, 30 senior teachers and 10 teacher methodologists participated in the study.

A non-probabilistic target method of forming the study group was chosen for sampling, when the subjects included in the study group were the most typical in terms of the study trait. According to Morse (1994), a

sample of 30-50 participants is suitable for this type of study. Qualitative sample size may best be determined by the time allotted, resources available, and study objectives (Patton, 1990). Thus, an attitude is held that such sample is quite representative in qualitative research and allows to draw appropriate conclusions.

Instrument and Procedures

The questionnaire used in the study consisted of seven open-ended questions. In formulating the questions, the current situation of pre-school education was assessed, and the analysis of pre-school education programmes was performed.

The following open questions were asked:

What factors promote the integration of health education into pre-school and pre-primary school education programmes?

What factors hinder/limit the integration of health education into pre-school and pre-primary school education programmes?

What determines the effectiveness of health education in pre-school/pre-primary school education?

What health education improvement possibilities do you see/discern in pre-school/pre-primary education?

What methods/forms do you use to present health education content?

How do you assess the role/importance of pre-school /pre-primary education teacher in health education?

What could you suggest/recommend in order to make children's health education more effective and of better quality?

The research instrument was discussed in a group of researchers. The initial validation of the instrument was performed, in which 5 pre-school education specialists participated. After evaluating their presented comments, an adjustment of the research instrument was made.

It was explained to the research participants that the opinions of individual respondents will not be made public, the study is completely anonymous. Comments and/or the context of a personal opinion/position are particularly important for the research. The questionnaire was filled in by computer, the scope was not limited. Communication with study participants was by e-mail.

Data Analysis

Research data was provided in writing. The obtained respondent's answers were coded. The most frequently recurring semantic units were grouped until the primary named subcategories became apparent. In the second stage the subcategories were grouped into categories. The data of the qualitative research are processed using quantitative *content* analysis when the essential characteristics are distinguished in the information array. In addition, quantitative content analysis is a method based on the systematic coding and quantification of content (Huxley, 2020). Devi-Prasad (2019) defined content analysis as reducing a large portion of words obtained through qualitative data in order to make meaning of the data by detecting trend and meaning. Analytical analysis of the content of textual data arrays is considered to be the basis and essential advantage of quantitative content analysis (Morkevičius, 2005). The obtained verbal data array, based on conventional *content* analysis methods, was analysed in three stages:

- Multiple reading and analysis of answers;
- Search for semantically close answers and "keywords";
- Interpretations and coordination of semantic units;
- Ranking of categories and subcategories.

To ensure the reliability of the data analysis, the isolation and subsequent grouping of semantic units was performed independently by three researchers. Researchers were regularly consulted on the analysis. At a later stage, the researchers sought consensus on the assignment of subcategories to categories. The coordination and adjustment took place in two stages. There was a weak break between the first and the second stages of coordination. The degree of compatibility was higher than 90 %. Miles and Huberman (1994) state that it is enough for the reliability of data to find correspondence percentage higher than .70. According to Neuendorf (2002), inter-coder reliability score above 80 per cent would be acceptable 'in most situations'. The main goal of the researchers, according to Bengtsson (2016) was to organize and extract meaning from the data collected and to draw rational conclusions from it.

RESEARCH RESULTS

After analysing the opinions expressed by the respondents about the factors promoting health education integration into pre-school and pre-primary education programmes, three categories were distinguished: *Children's health problems*, *The importance of children's health education*, and *Society's attitude to health* (Table 1).

One can see that the first category *Children's health problems* (51.1%) has the greatest significance when discussing the integration of health education factors into IC programmes and is mostly related to the main reasons, which are generalised in subcategories: *Deterioration of children's health* (24.6%) and *Lack of physical activity* (11.5%). The diversity of respondents' opinions on children's health effects is also evident in the other two subcategories *Unbalanced diet* (8.8%) and *IT negative effects* (6.2%).

Table 1. Factors promoting the integration of health education

Category	*N* (%)	Subcategory	*N* (%)	Subcategory components	*N* (%)
Children's health problems	97 (51.1)	Health deterioration	46 (24.6)	Current health of children; deteriorating/becoming worse children's physical, mental, social health	22 (12.2)
				Deteriorating children's state of health	8 (4.2)
				Deteriorating children's health indicators	6 (3.1)
				Insufficient parental attention to children's health	6 (3.1)
				Various children's health problems	4 (2.0)
		Lack of physical activity	22 (11.5)	Lack of physical activity, deteriorating physical activity	18 (9.4)
				Limited opportunities for movement and physical activity	3 (1.6)
				Inappropriate children's daily routine	1 (0.5)
		Unbalanced nutrition	17 (8.8)	Unbalanced/inappropriate nutrition at home	6 (3.1)
				Inappropriate nutrition habits	5 (2.6)
				Deteriorating food quality	3 (1.6)
				Promoting unhealthy foods in families	2 (1.0)
				Children are poorly acquainted with the principles of healthy eating	1 (0.5)
		Negative effects of IT	12 (6.2)	Careless parents' attitude towards the use of smart technologies	5 (2.6)
				IT negative impact on children's health	4 (2.0)
				Long time spent using technologies	3 (1.6)
The importance of children's health education	61 (31.3)	Teachers' attitude	20 (10.2)	Teacher's activity and attitude towards health education	8 (4.2)
				Understanding of health education importance within teachers and in school community	4 (2.0)
				The attitude of leaders and teachers, a unified attitude towards children's health promotion	4 (2.0)
				Commitment to raising a happy and healthy child	2 (1.0)
				The aim to expand the competencies of educators	1 (0,5)
				The need to purposefully initiate child's physical activity	1 (0.5)
		Health education improvement	19 (9.8)	Healthy and secure environment creation	6 (3,1)
				Comprehensive/holistic child education	5 (2.6)
				Attitude towards early health education	3 (1,6)
				Continuous improvement, the aim to improve education	2 (1.0)
				The aim to provide students with knowledge about a healthy lifestyle	2 (1.0)
				Opportunities to integrate health education into all subjects	1 (0.5)
		Health competence development	19 (9.8)	The basics of a healthy lifestyle are formed in early childhood	7 (3.7)
				Strengthening children's responsibility for their own and other's health	5 (2.6)
				The aim to help children develop health-friendly skills and habits	4 (2.0)
				Necessity and desire to develop health competence	2 (1.0)
				Formation of the right approach to the development of a healthy lifestyle	1 (0.5)
		Children's needs	3 (1.5)	Children's desire to move and to be in the fresh air	2 (1.0)
				Children's interest in health issues, their personal interest	1 (0.5)
Public attitude towards health	34 (17.6)	Lifestyle changes	19 (9.8)	The need of strengthening health knowledge	9 (4.7)
				Growing public awareness	3 (1.6)
				The need for physical activity	2 (1.0)
				The changing rhythm of life	2 (1.0)
				A positive example of foreign countries	2 (1.0)
				Information provided by media about healthy lifestyle	1 (0.5)
		Health projects / programmes	15 (7.8)	Health projects and programmes prepared by various institutions	10 (5.2)
				Prevention of diseases, ailments, health disorders	5 (2.6)

Note: Totally 192 semantic units were extracted

In the second category, *The importance of children's health education* (31.3%), teachers' opinions are almost evenly distributed in three subcategories: *Teachers' attitude* (10.2%), *Health education improvement* (9.8 %) and *Health competence development* (9.8%). The teacher's attitude is related to his own activity in health education issues and his attitude to educate a happy and healthy child. The other two subcategories reflect teachers' aspirations to improve education and the ability to integrate health education into all subjects and the desire to help children develop health-friendly skills and habits. The subcategory *Children's needs* (1.5%) in the second category has the lowest value because it reflects the position of the teacher as a children's expert, and not the child himself (assessment from the pedagogue's perspective).

The third category, *Public attitude towards health* (17.6%), is the least significant within the analysis of this issue because it presents general trends that can lead to a healthier lifestyle (9.8%) and specific health promotion activities through prepared health projects/programmes (7.8%).

Thus, the main factors encouraging health education integration into pre-school and pre-primary education programmes are deteriorating children's health every year and the importance of children's health education. The least significant factor is focused on the socio-informational aspect of life change and health prevention events.

Table 2. Factors limiting the integration of health education

Category	*N* (%)	Subcategory	*N* (%)	Subcategory components	*N* (%)
Problems of health education organisation	68 (41.2)	Lack of material resources	41 (24.9)	Poor financing of state institutions	12 (7.3)
				Lack of educational means	12 (7.3)
				Lack of material resources	10 (6.1)
				Inadequate institutional spaces, educational environment	6 (3.6)
				Lack of educational environment inventory tools	1 (0.6)
		Indifference to health promotion	16 (9.7)	Too little emphasis on the importance of health education	9 (5.5)
				No purposeful physical education activities in institutions	3 (1.8)
				Low attention to children's physical activity both at home and in educational institutions	1 (0.6)
				No sport activities	1 (0.6)
				The risks of smart technologies	1 (0.6)
				Unhealthy, inappropriate nutrition at home	1 (0.6)
		Lack of time	6 (3.6)	High occupation in other areas of education	3 (1.8)
				Lack of time	2 (1.2)
				Lack of time for active leisure	1 (0.6)
		Deficiencies of the curriculum	5 (3.0)	Inappropriate education programme	2 (1.2)
				No unified health conception definition between teachers	2 (1.2)
				Inconsistent curriculum implementation	1 (0.6)
Lack of cooperation of participants in the educational process	50 (30.0)	Lack of cooperation with parents	32 (19.2)	Parent position and different attitudes to health	8 (4.8)
				Inappropriate parental attention and involvement	6 (3.6)
				Parents' unwillingness to participate in cooperation and seek continuity	6 (3.6)
				Different attitudes of parents and education institution to health promotion	5 (3.0)
				Exclusion of the family in the construction and implementation of health education content	3 (1.8)
				Parents' reluctance to cooperate	2 (1.2)
				Parents' negative attitude towards children's activity	2 (1.2)
		Lack of cooperation with specialists	18 (10.8)	There is a lack of close cooperation between the relevant specialists in the field	8 (4.8)
				Lack of specialists in pre-school education institution (psychologist, coach, etc.)	8 (4.8)
				Lack of teamwork of educators and other professionals	2 (1.2)
Insufficient teacher competencies	47 (28.8)	Lack of motivation	24 (14.5)	The reluctance of educators to improve	10 (6.1)
				Lack of educators' motivation	6 (3.6)
				Lack of educators' initiative, passivity	4 (2.4)
				Educators' indifference, unwillingness to change, to try	2 (1.2)
				Pre-school/pre-primary education teachers' preconceptions on children's health education issues	1 (0.6)
				Improper psychological work environment	1 (0.6)
		Lack of preparation	23 (14.3)	Lack of health knowledge of educators	14 (8.9)
				Lack of competence of educators	4 (2.4)
				Lack of professional training of educators	3 (1.8)
				Lack of in-service training programmes for educators	2 (1.2)

Note: Totally 165 semantic units were extracted

After the analysis of the factors limiting the integration of health education into pre-school and pre-primary education programmes, three categories were distinguished: *Problems of health education organisation*, *Lack of cooperation between the participants in the educational process*, *Insufficient teacher competencies* (Table 2).

It turns out that the category *Problems of health education organisation* (41.2%) has the largest contribution when discussing the group of factors limiting the integration of health education. Integration is limited by the *Lack of material resources* (24.9%), *Indifference to health promotion* (9.7%), *Lack of time* (3.6%) and *Curriculum deficiencies* (3.0%). All four sub-categories report about a lack of responsibility in both institutional and parental approaches to children's health education.

Another important factor limiting integration is lack of cooperation. The second category *Lack of cooperation of participants in the educational process* (30.0%) consists of two subcategories: *Lack of cooperation with parents* (19.2%) and *Lack of cooperation with specialists* (10.8%). It was found that only the common goal and the teamwork of educators with parents and specialists give good and measurable results in the field of children's health education and health promotion. When there is no common interest, there is no positive result.

The third category – *Insufficient teacher competencies* (28.8%), according to significance, is almost as important as the second category. According to the content of the respondents' answers, two subcategories were distinguished: *Lack of teacher motivation* (14.5%) and *Lack of preparation* (14.3%). These subcategories reveal the teacher's negative personal qualities (indifference, unwillingness to improve, preliminary attitudes, etc.), that determine their passive attitude towards improvement possibilities.

It can be asserted that the main factors limiting health education integration into programmes is related to irresponsible institutional and parental attitudes, lack of cooperation and lack of competence and passivity of the educator in the search for solutions to health issues.

Table 3. Factors determining the effectiveness of health education in pre-school education

Categories	*N* (%)	Subcategories	*N* (%)	Subcategory components	*N* (%)
Proper teacher preparation	61 (37.9)	Teacher competence	34 (21.3)	Teacher competence in the field of health promotion	15 (9.6)
				Teachers' personal example	10 (6.2)
				Professionalism of specialists, their qualification	6 (3.7)
				Physical education teachers, working in pre-school institutions	3 (1.8)
		Teacher motivation	27 (16.6)	Creativity and initiative of teachers	12 (7.4)
				Interest of teachers and specialists	10 (6.2)
				Interest of teachers in the diversity of health promotion activities	3 (1.8)
				Teachers' values and attitudes	2 (1.2)
Purposeful activities of the institution	51 (31.3)	Health education content	38 (23.4)	Creating a safe and healthy educational environment	9 (5.6)
				Quality of health education content	5 (3.1)
				Developed special health education programme	4 (2.5)
				Ongoing prevention programmes and projects	4 (2.5)
				Sports activities, physical exercises, other sports activities	4 (2.5)
				Consistency of health education activities	3 (1.8)
				Training to take care of your physical health	2 (1.2)
				Compliance with sanitary and hygiene standards in the nursery	2 (1.2)
				Implementation of healthy lifestyle habits	1 (0.6)
				Providing appropriate knowledge to children	1 (0.6)
				Early implementation of values	1 (0.6)
				Properly prepared children's nutrition menu	1 (0.6)
				Developing the ability to resist misbehaviour	1 (0.6)
		Material resources	10 (6.1)	Good material base	5 (3.1)
				Adequate funding of educational institutions	3 (1.8)
				Appropriate physical education tool	2 (1.2)
		Teacher support	3 (1.8)	Conditions provided by educational institutions for teachers to improve In the field of health education	2 (1.2)
				Appropriate methodological recommendations	1 (0.6)
Community involvement in health education	50 (30.8)	Family collaboration	27 (16.6)	Cooperation between teachers and parents	14 (8.6)
				Parental education	6 (3.7)
				Cooperation of educational institution with the family	6 (3.7)
				Community involvement in health promotion projects	1 (0.6)
		Community activity	23 (14.2)	Positive/favourable attitude of heads of institutions to health education	9 (5.6)
				Collaboration of the whole community	8 (5.0)
				Cooperation with social partners	3 (1.8)
				Active work of the educational institution	1 (0.6)
				Favourable psychological work environment	1 (0.6)
				A modernizing public attitude	1 (0.6)

Note: Totally 162 semantic units were extracted

After analysing the responses about the factors determining health education effectiveness, three categories were also identified: *Proper teacher preparation*, *Purposeful activities of the institution*, *Community involvement in health education* (Table 3).

It turns out that no significant difference was found between the three singled out categories when discussing the factors determining health education effectiveness. However, the first category *Proper teacher preparation* (37.9%) has a slightly higher value than the other two. The respondents note that the subcategories *Teacher competence* (21.3%) and *Teacher motivation* (16.6%) are the most important components assessing the proper preparation of teachers.

The second category *Purposeful activities of the institution* (31.3%) consists of 3 subcategories: *Health education content* (23.4%), *Material resources* (6.1%), *Teacher support* (1.8%). The main focus in this category is devoted on ensuring health education content - the creation of a safe and healthy educational environment and quality assurance, various sports activities and occupations, healthy lifestyle skill formation, etc. The third category *Community involvement in health education* (30.8%) includes teachers' attitude towards *Family collaboration* (16.6%) and *Community activity* (14.2%).

The presented analysis of the research data shows that the factors determining the effectiveness of health education in pre-school education depend not only on the teacher's readiness and purposeful activities of the institution on health issues, but on the whole community involvement in the search for appropriate health education solutions.

After analysing health education improvement possibilities, three categories were distinguished: *Teacher training*, *Health promotion activities*, Changes in the organisation of children's educational activities (Table 4).

One can see that in order to assess the quality of health improvement services, the first category has the highest value *Teacher training* (41.8%), which consists of three subcategories: *Development of health education competencies* (27.4%), *Teacher support* (10.1%) and *Teacher motivation* (4.3%). Teacher new competence acquisition, their improvement in the health promotion sphere,

Table 4. Health education improvement possibilities in pre-school education

Categories	*N* (%)	Subcategories	*N* (%)	Subcategory components	*N* (%)
Teacher training	58 (41.8)	Development of health education competencies	38 (27.4)	Encourage participation in various ongoing projects	16 (11.7)
				Teacher training	7 (5.0)
				Teacher education	6 (4.3)
				Organise as many as possible trainings and seminars on health promotion for teachers	4 (2.9)
				Development of educational activities organised by a public health specialist	3 (2.1)
				Public health professional lectures for community	1 (0.7)
				Supply of health education innovations/trainings for pre-school and pre-primary education teachers	1 (0.7)
		Teacher support	14 (10.1)	Development of an effective and coordinated health education programme	5 (3.6)
				Allocate posts for physical education specialists in each institution	4 (2.9)
				Development of forms of dissemination of good practice between pre-school and pre-primary educational institutions	4 (2.9)
				Development of an effective methodology	1 (0.7)
		Teacher motivation	6 (4.3)	Motivate teachers, motivation increase	6 (4.3)
Health promotion activities	51 (36.2)	Collaboration with family	29 (20.7)	Greater involvement of parents in kindergarten life and activities	7 (5.0)
				Strengthen parental education on the importance of health and attitude formation.	6 (4.3)
				Strengthen the cooperation between the kindergarten health specialist, educators, and parents	6 (4.3)
				Strengthen cooperation with the family	5 (3.6)
				Provide help to parents (legal representatives) in protecting and strengthening their children's physical and mental health	3 (2.1)
				More purposeful cooperation between the child's family and educational institution	2 (1.4)
		Creation of educational environments	15 (10.6)	Develop various educational activities outside	8 (5.7)
				Equip educational outdoor spaces for children's health strengthening	3 (2.1)
				Adapting the internal and external environments of educational institutions to children's physical activity	2 (1.4)
				More optimal use of outdoor space	2 (1.4)
		Material	5 (3.5)	Increase funding	3 (2.1)
				Increase the diversity of health education tools	2 (1.4)
		Improving nutrition	2 (1.4)	Improve children's nutrition	1 (0.7)
				Develop healthy eating habits	1 (0.7)
Changes in the organisation of children's educational activities	31 (22.0)	Healthy lifestyle education	14 (9.9)	Carry out health promotion campaigns	4 (2.9)
				Ensure the continuity of health competence development	3 (2.1)
				Organise regular health education sessions	2 (1.4)
				The development of the right attitude towards healthy lifestyle factors	2 (1.4)
				Promote a healthy lifestyle	1 (0.7)
				Health lessons for children	1 (0.7)
				Ensure equal opportunities for every child's full development	1 (0.7)
		Promotion of physical activity	12 (8.6)	Promote sport activities, activities in the institution	6 (4.3)
				Encourage children's physical activity	6 (4.3)
		Leisure organisation	5 (3.5)	Create better conditions for children to play and relax	2 (1.4)
				Strengthen and diversify non-formal education in this field	2 (1.4)
				Reduce excessive prohibitions, restrictions	1 (0.7)

Note: Totally 140 semantic units were extracted

giving them support in developing health promotion programmes and education methodologies, sharing experience with other educational process participants and increasing teacher motivation are singled out by the respondents as important components in health education improvement.

The category *Health promotion activities* (36.2%) consists of four subcategories, of which the subcategories *Collaboration with family* (20.7%) and *Creation of educational environments* (10.6%) are the most important. The partnership between the pedagogue and the parents as well as the appropriate environment can help the teacher to ensure the quality education of the children and to achieve the set goals in any field of education/activity–especially health.

The third, according to the importance, is the category *Changes in the organisation of children's educational activities* (22.0%), which consists of three subcategories related to children's activities: *Healthy lifestyle education* (9.9%), *Promotion of physical activity* (8.6%) and *Leisure organisation* (3.5%). According to the respondents, the biggest attention should be devoted on children's healthy lifestyle activities and on the encouragement of physical activities.

It is obvious that the improvement of health education is determined by the factors, which are related to teachers' development possibilities, encouragement of

Table 5. Ways of presenting the content of health education

Categories	*N* (%)	Subcategories	*N* (%)	Subcategory components	*N* (%)
Practical methods	93 (58.0)	Games	34 (21.3)	Mobile games in the gym and outdoors	18 (11.3)
				Educational games on health	14 (8.8)
				Interactive games about spoiled and edible food	2 (1.2)
		Sports events	30 (18.7)	Morning daily exercises in groups	20 (12.5)
				Various activities outside	6 (3.7)
				Various sports activities are organised	4 (2.5)
		Projects	22 (13.7)	Health promotion projects are carried out	16 (10.0)
				Organised healthy people/healthiness days	5 (3.1)
				Healthy living weeks	1 (0.6)
		Training	7 (4.3)	Hygiene training	5 (3.1)
				Integrating health education into subjects	2 (1.2)
Verbal methods	42 (26.4)	Conversations	26 (16.5)	Conversations and discussions are organised about health	23 (14.7)
				Communication with parents (trying to reveal the importance of health education)	3 (1.8)
		Class hours	10 (6.2)	Organised healthiness hours	7 (4.4)
				Health specialist hours	3 (1.8)
		Quizzes	6 (3.7)	Organised quizzes, competitions	6 (3.7)
Visual methods	25 (15.6)	Visual aids	23 (14.4)	Visual material used (e.g., posters, videos, presentations)	19 (11.9)
				Interactive video material	4 (2.5)
		Excursions	2 (1.2)	Organised educational trips	2 (1.2)

Note: Totally 160 semantic units were extracted

collaboration with family, organization of children's health promotion activities, creation of appropriate educational environments for children's health promotion activities and attention to children's healthy lifestyle and physical activity promotion possibilities.

After carrying out the methods of presenting health education content, three categories were distinguished: *Practical methods*, *Verbal methods,* and *Visual methods* (Table 5).

One can see that the first category *Practical methods* (58.0%) has the greatest value for health education. It consists of four subcategories: *Games* (21.3%), *Sports events* (18.7%), *Projects* (13.7%) and *Training* (4.3%). The respondents think that health education content will be best understood by children applying mobile, educational, and interactive games and through sports events and ongoing health promotion projects. The importance of playing is undeniable because for pre-schoolers, play is their most important activity and the way of development.

The second, according to the importance, is the category *Verbal methods* (26.4%) which consists of three subcategories: *Conversations* (16.5%), *Class hours* (6.2%), *Quizzes* (3.7%). Conversations, class hours, and health quizzes are more influential for children when they involve not only children but also parents and health, or particular activity professionals. It is also important that the activity has elements of play and racing.

The third category according to the importance *Visual methods* (15.6%) includes the use of visual aids (14.4%) and the organization of excursions (1.2%). Imagination helps children to understand the content of health education more effectively and more easily. It can be presumed that a proper choice of practical, verbal, and visual approaches is important for a better understanding of the content of health education.

After analysing the role/importance of the pre-school teacher in health education, three categories were distinguished: *Very important role*, *Important role*, *Partly important role* (Table 6).

It is obvious that the role of the teacher in health education, according to the opinions of the respondents, is very important (60.5%). This category consists of two subcategories: *Overall impact* (48.5%) and *Personal example* (12.0%). More than half of the respondents surveyed were assured that the role of the teacher and their personal example are very important factors in children's health education and help children form the right attitude towards their health.

The second, according to the importance, is the category *Important role* (34.9%). It consists of the following subcategories: *High impact* (32.2%) and *Activity organisation* (2.7%). In addition to the important role of the teacher, who has a positive impact on children's health, various health assessment promotion activities and educational environment creator roles are ascribed to this assessment. The third category according to the importance *Partly important role* (4.6%), emphasizes the role of the family rather than the role of the teacher in children's health education processes. There is no doubt that the role of the teacher in health education is important and has/makes a positive effect on children's health education.

After the analysis of the proposals on the issues of improving health education, three categories were distinguished: Improving the process of health education, Strengthening parent involvement, Improving the qualification of teachers (Table 7).

The highlighted categories show that the respondents delegate health education effectiveness recommendations to teachers, professionals, managers, and parents in their proposals. The already discussed

Table 6. Pre-school teacher's role in health education

Categories	*N* (%)	Subcategories	*N* (%)	Subcategory components	*N* (%)
Very important role	65 (60.5)	Overall impact	52 (48.5)	The role of the teacher is most important	26 (24.5)
				The role of the teacher is very important	11 (10.2)
				The role of the teacher in developing health skills is particularly important	10 (9.3)
				The role of the teacher is central	3 (2.7)
				The quality of health education content conveyance depends on the teacher	1 (0.9)
				Teacher is an integral part in education	1 (0.9)
		Personal example	13 (12.0)	An educator in his/her healthy lifestyle is an example for students	12 (11.1)
				Example shapes children's attitude towards health perception	1 (0.9)
Important role	38 (34.9)	High impact	35 (32.2)	The role is positive	12 (11.1)
				The role is large	8 (7.4)
				The teacher makes an important contribution to the development of the child's health education and the formation of the concept of a healthy lifestyle	3 (2.7)
				The quality of health education depends on the pedagogue's attitude	6 (5.6)
				Individual teacher's approach to the health of each child is important	3 (2.7)
				An expert in child's psychology and physiology	2 (1.8)
				Teacher is responsible for the child's health education	1 (0.9)
		Activity organisation	3 (2.7)	Teacher is an inventor, initiator of various activities	2 (1.8)
				Teacher aims to create a favourable health promoting environment for children	1 (0.9)
Partly important	5 (4.6)	Minor importance	5 (4.6)	The role of the teacher is not primary, family is most important	5 (4.6)

Note: Totally 108 semantic units were extracted

Table 7. Recommendations for improving the efficiency of health education

Categories	*N* (%)	Subcategories	*N* (%)	Subcategory components	*N* (%)
Improving the process of health education	53 (45.9)	Increasing educational health promotion activity	40 (34.6)	Initiate project activities related to health education	9 (7.8)
				Provide children with as many active, lively activities as possible	8 (6.9)
				Increase children's physical activity, mobility	7 (6.0)
				Organise more health promotion events for children	4 (3.4)
				Encourage children to engage in physical activities	3 (2.6)
				Pay more attention to the development of children's health education content	3 (2.6)
				Integrate more physical activity into educational process	2 (1.7)
				Teach children to live healthy	1 (0.9)
				Organise more diverse and as motivating health promotion activities as possible	1 (0.9)
				Pay more attention to the importance of health	1 (0.9)
				Offer children a variety of sports clubs in the institution	1 (0.9)
		Improving material provision	6 (5.2)	Sufficient provision of sports equipment to institutions	5 (4.3)
				Use modern tools (ICT) to create a wider range of activities	1 (0.9)
		Increasing the specialist involvement	5 (4.3)	Establish positions of physical education teachers in pre-school institutions	3 (2.6)
				More health professionals in kindergartens: coaches, psychologists, medical specialists	2 (1.7)
		Improving educational environment	2 (1.8)	Creating better educational environment	1 (0.9)
				Create healthy and safe educational environment	1 (0.9)
Strengthening parent involvement	32 (27.6)	Development of education	19 (16.4)	Improve parental education	10 (8.6)
				Involve parents in ongoing programmes and projects	8 (6.9)
				Educate the public	1 (0.9)
		Development of cooperation	13 (11.2)	Strengthen cooperation between health professionals, teachers, and parents	7 (6.0)
				Closer cooperation with children's parents	6 (5.2)
Improving the qualification of teachers	31 (26.5)	Development of health education competencies	21 (17.9)	Pay more attention to teacher training	12 (10.2)
				Improve teacher education	4 (3.4)
				Encourage teachers and professionals to organise seminars, read reports	3 (2.6)
				Continuously improve knowledge in the field of health education	1 (0.9)
				Strengthen teachers' motivation, develop and implement children's healthy lifestyle skills	1 (0.9)
		Provision of methodological assistance	10 (8.6)	Regular methodological recommendations of specialists	4 (3.4)
				Create more visual interactive, freely available online material on health education topics in Lithuanian (videos, interactive educational games, exercises, posters, etc.)	3 (2.6)
				Develop cooperation with other pre-school educational institutions	2 (1.7)
				Change the attitude of the heads of educational institutions towards the development of a healthy lifestyle	1 (0.9)

Note: Totally 116 semantic units were extracted

issues on *Health education process improvement* (45.9%), *Strengthening parent involvement* (27.6%) and *Teacher qualification improvement* (26.5%) possibilities are emphasized once again.

DISCUSSION

The aim of the research was to analyse the factors that promote, limit, determine the effectiveness of health education integration into pre-school education programmes, and to summarise the essential proposals in the sphere of health education improvement. The carried -out analysis confirms the relevance and importance of health education in pre-school education institutions, especially considering the trend of deteriorating children's health. The solution to the problems discussed requires an active, meaningful approach to your health and its strengthening from childhood. It is namely in pre-school age that health, a habit to live a healthy lifestyle, general endurance, work capacity and other qualities necessary for the full development of the personality are strengthened/maintained due to the purposeful and expedient educational effect.

There is no doubt that the successful education of pre-school children (education for healthy living, formation of the basics of a healthy lifestyle, etc.) largely depends on purposeful and systematic educational work in the pre-school institution and the family, creating conditions for the educational process. Particularly significant is the harmonious interaction in the triad of child - teachers – parents. It is clear that pre-school teachers should be the initiators and coordinators of such interaction.

The results of the study show that the key factors in promoting health education are related to children's health problems. The results of the study rightly suggest that deteriorating health and lack of physical activity are the two most significant factors. Physical activity is essential in maintaining children's health. Studies show that increased passive behaviour in children is a factor contributing to the increase in childhood obesity in the general population (Dwyer et al., 2009), besides, health problems are quite diverse (Tomokawa et al., 2018). Studies show that health promotion interventions in pre-school educational institutions can be effective. The involvement and collaboration of parents and health professionals, and well-designed programmes are being implemented accordingly (Noble et al., 2020).

The analysis of limiting factors shows that the latter are mostly related to the problems of organising health education and not to the competence of teachers, despite the fact that 28.8% of the respondents associate the limiting factors namely with the insufficient competence of teachers. For example, one recent study in China showed insufficient knowledge of teachers both in the sphere of children's health and in the health education issues. The researchers assert that both education and work experience are not guarantees of adequate preparation in health education (Hu et al., 2020). Similar results were found by Spanish researchers stating that even though Health Education is included in the Early Childhood Education curriculum, teachers do not manage to develop it effectively (Llorent-Bedmar & Cobano-Delgado, 2019). In addition, the child is often seen as a passive recipient of information rather than as an active factor in promoting their family's health (Michaelson et al., 2021). This is singled out by researchers as an important gap in health education.

The results of the study basically confirm the previously expressed principle of the "triad". The factors determining the effectiveness of health education in pre-school education are basically divided into three almost equal categories according to weight categories, i.e., teacher preparation – purposeful activity of the institution – community involvement. It is obvious that health education is very significant in the pre-school age. Many patterns of behaviour that affect health are difficult to change when children reach school age. (Ventura & Worobey, 2013). So, it is important to guarantee proper health education with young children until they reach school age. The results of the study reaffirm that health education is particularly meaningful in childhood. According to researchers, human worldview and behavioural stereotypes are formed during this period of ontogenesis (Žvironaitė, 2008).

Assessing the results of the study, it becomes clear that the opportunities for improving health education are not yet exploited. They are mainly related to teacher qualifications, especially in health education. The development of health education competencies remains the most significant factor in improving health education. Teachers can promote children's social and emotional health in a variety of ways, for example, organising and creating a rich educational environment that encourages children's social interaction. The research showed that the creation of educational environments is a significant component of health promotion activities in pre-school institution. An important factor is the development of educational activities strengthening health outdoors. Studies show that the transition to sedentary lifestyle contributes significantly to the deterioration of children's health. Children spend more time indoors using a variety of electronic means and spend less time playing unstructured outdoor play (McCurdy et al., 2010).

It can be reasonably argued that the role/importance of the pre-school teacher in health education remains central. The conducted research confirms that the absolute majority of the respondents state that the role of the teacher is very important or important (95.4%). This also correlates with the results of studies conducted by other researchers (Cheung, 2020; Musgrave & Payler, 2021; Phajane, 2014). On the other hand, the obtained results correlate with a previous study in Lithuania

stating that kindergarten teachers basically appropriately understand their personal role strengthening the learners' health and forming their health competence (Lamanauskas & Augienė, 2019). Curricula with an integrated health component can also be linked to this. Researchers emphasize that the quality of programmes is a significant factor, therefore, obvious investment is needed in this respect. Investments in pre-school education programmes could also be investments to health (Muennig, 2015).

The study has some limitations. Despite the fact that the study is qualitative, the sample size could be larger. It would make sense to conduct a quantitative study to obtain more reliable data. Children's health determines the future well-being of society therefore, the state of children's health is undoubtedly one of the most important indicators of public health. Children's health is strongly influenced not only by the physical but also by the social environment, socio-economic conditions, their own and those around them behaviour. Thus, research in children's health education is undoubtedly important.

The researchers agree that in order to get a deeper picture of the problem, it is necessary to analyze not only the opinions of educators (kindergarten teachers), but also the opinions of children and parents. Children, as participants in the study, are a specific group of subjects, therefore the selection of research methods is not an easy process, depending on the age, mental, social and cultural characteristics of the children and their experience. Such studies require special conditions when working with children, and the current situation with Covid-19 has been unfavorable. It restricted direct contact with children and prevented researchers from gaining access to children before interviewing them and only then interviewing them individually, choosing the most appropriate interview methods for them – individual and/or group interview. The survey of children is foreseen in the further perspective of the study.

CONCLUSIONS AND IMPLICATIONS

Three main factors have been identified promoting health education integration into pre-school and pre-primary education programmes. The most important factor is related to *children's health problems*: deteriorating health, lack of physical activity, unbalanced diet, the negative effects of IT. The second most important factor is *the understanding of the importance of children's health* education, which is determined by the attitude of teachers, the desire to improve health education, develop children's health competencies, children's needs. The desire to integrate health education into pre-school and pre-primary education programmes is also determined by the changing (more positive) *public attitude to health*.

Three factors limiting the integration of health education into pre-school and pre-primary education programmes have been identified. The most significant factor limiting integration is related to *the problems of organising health education*, which are caused by the lack of material resources, indifference to health promotion, teacher occupation, shortcomings of the curriculum. The integration of health education is limited by *the lack of collaboration between the participants* in the educational process. Teachers lack collaboration with parents and professionals (especially in health). Integration is also hampered by *insufficient teacher competencies*. Teachers often lack motivation and appropriate preparation.

The factors that determine the effectiveness of health education in pre-school education are, in principle, quite equally important. It is *the proper preparation of teachers*, which is determined by competencies and motivation of teachers. An important factor determining the efficiency of health education is *the purposeful activity of the institution* (content of health education, material resources, support for the teacher), as well as *the involvement of the community in health education*, and its activity.

The directions of health education possibilities in pre-school education are clear. The most important of them is *Improving qualification of teachers*. It is the continuous development of teachers' health education competencies, teacher support, teacher motivation. Another significant opportunity to improve health education is children's *health promotion activity* in educational institution in cooperation with the family and creating appropriate educational environments (especially carrying out educational activities outdoors), improving material provision and children's nutrition. *Changes in the organisation of children's educational activities* are also important. It is necessary to promote children's physical activity, develop a healthy lifestyle, and organise children's leisure time properly.

Most often, teachers use *practical methods*, that are obviously most useful for pre-school children: educational games, sports events, projects, etc. *Verbal methods* (conversations, class hours, quizzes, etc.), and *visual methods* are used less often.

According to teachers, their role in pre-school and pre-primary children's health education is *very important* or *important* because the teacher has a comprehensive impact on children, sets an example for them, organises children's activities and so on. Only a very small proportion of teachers consider that their role in children's health education is secondary, of little importance.

In order to make children's health education more efficient and to improve the quality of the process, it is necessary, first of all, - *to improve/change health education process*. Consequently, it is important to increase the scope of educational health promotion activities, to

improve material provision, to involve various specialists into active work, to improve the educational environment. Second, – *to strengthen parent involvement/inclusion in children's health education*. Educating parents and developing cooperation would help. Third, – *to improve teachers' qualification* in health and healthy lifestyle. Here, it is important to develop teachers' health education competencies and to provide them with methodological assistance.

Author contributions: All authors have sufficiently contributed to the study, and agreed with the results and conclusions.

Funding: No funding source is reported for this study.

Declaration of interest: No conflict of interest is declared by authors.

REFERENCES

Adaškevičienė, E., & Strazdienė, N. (2013). *Vaikų sveikatą stiprinančio fizinio aktyvumo ugdymas* [Development of physical activity that promotes children's health]. Monografija. KU leidykla.

Aydin, G. (2016). Protective health education. *Eurasian Journal of Educational Research*, *65*, 277-294 https://doi.org/10.14689/ejer.2016.65.16

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, *2*, 8-14. https://doi.org/10.1016/j.npls.2016.01.001

Center on the Developing Child at Harvard University (2010). *The foundations of lifelong health are built in early childhood*. https://developingchild.harvard.edu/wp-content/uploads/2010/05/Foundations-of-Lifelong-Health.pdf

Cheung, P. (2020). Teachers as role models for physical activity: Are preschool children more active when their teachers are active? *European Physical Education Review*, *26*(1), 101-110. https://doi.org/10.1177/1356336X19835240

Devi Prasad, B. (2019). Qualitative content analysis: Why is it still a path less taken? *Forum Qualitative Sozialforschung*, *20*(3), 36. https://doi.org/10.17169/fqs-20.3.3392

Dwyer, G., Baur, L., Higgs, J., & Hardy, L. (2009). Promoting children's health and well-being: Broadening the therapy perspective. *Physical & Occupational Therapy In Pediatrics*, *29*(1), 27-43. https://doi.org/10.1080/01942630802574825

Emamgholipour Sefiddashti, S, Arab, M., Meshkini, M., & Mokhtari, S. (2020). Determining the optimal method of allocating credits and granting facilities in the student welfare fund of Ministry of Health and Medical Education using Fuzzy AHP. *European Journal of Basic Medical Sciences*, *10*(1), 33-42. https://doi.org/10.21601/ejbms/9315

EU Action Plan on Childhood Obesity 2014-2020 (2014). European Commission. https://ec.europa.eu/health/sites/default/files/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf

Galvao, D. M. P. G. (2018). The nurse in nurseries/kindergartens: The perspective of teachers from a nursing school. *Entermeria Global*, *51*, 394-405. https://doi.org/10.6018/eglobal.17.3.291371

Hu, H., Wu, T., Fan, L., Zuo, K., Chen, L., Zhang, J., & Zhao, X. (2020). Knowledge of child health and affecting factors among preschool teachers: A cross-sectional study in Chongqing, China. *Risk Management and Healthcare Policy*, *13*, 2515-2524. https://doi.org/10.2147/RMHP.S280214

Huxley, K. (2020). Content analysis, quantitative. In P. Atkinson, S. Delamont, A. Cernat, J. W. Sakshaug, & R. A. Williams (Eds.), *SAGE Research Methods Foundations*. Sage. https://www.doi.org/10.4135/9781526421036880564

Kann, L., Brener, N., & Allensworth, D. (2001). Health education: Results from the School Health Policies and Programs Study 2000. *Journal of School Health*, *71*(7), 266-278. https://doi.org/10.1111/j.1746-1561.2001.tb03504.x

Kurowicka, E. (2019). Health education and health promotion among preschool children. *Journal of Education, Health and Sport*, *9*(7), 497-506. https://doi.org/10.5281/zenodo.3407784

Lamanauskas, V. (2018). Teacher health literacy: Why does it matter? *Problems of Education in the 21st Century*, *76*(1), 4-6. https://doi.org/10.33225/pec/18.76.04

Lamanauskas, V., & Augienė, D. (2019). Kindergarten teachers' health literacy: Understanding, significance and improvement aspects. *Review of Science, Mathematics & ICT Education*, *13*(2), 39-60. https://doi.org/10.26220/rev.3207

Lietuvos sveikatos 2014–2025 metų programa [Lithuanian Health Programme for 2014–2025]. https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/35834810004f11e4b0ef967b19d90c08?jfwid

Llorent-Bedmar, V., & Cobano-Delgado, V. (2019). Health education training of university students of the early childhood education degree in Spain. *Ciência & Saúde Coletiva*, *24*(8), 3067-3078. https://doi.org/10.1590/1413-81232018248.28642017

Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social science* (9th Ed.). Pearson.

Matthews, B. (2021). Digital literacy in UK health education: What can be learnt from international research? *Contemporary Educational Technology*, *13*(4), ep317. https://doi.org/10.30935/cedtech/11072

McCurdy, L. E., Winterbottom, K. E., Mehta, S. S., & Roberts, J. R. (2010). Using nature and outdoor

activity to improve children's health. *Current Problems in Pediatric and Adolescent Health Care*, *40*(5), 102-117. https://doi.org/10.1016/j.cppeds.2010.02.003

Michaelson, V., Pilato, K. A., & Davison, C. M. (2021). Family as a health promotion setting: A scoping review of conceptual models of the health-promoting family. *PLoS ONE*, *16*(4), e0249707. https://doi.org/10.1371/journal.pone.0249707

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook.* USA.

Morkevičius, V. (2005). *Terra incognita*: kiekybinė viešosios politikos diskurso turinio analizė [*Terra incognita*: Content analysis of public policy discourse]. *Viešoji politika ir administravimas / Public Policy and Administration*, *11*, 74-85. https://vpa.ktu.lt/index.php/PPA/article/view/27140

Morse, J. M. (1994). Designing funded qualitative research. In Denizin, N. K., & Lincoln, Y. S., *Handbook of qualitative research* (2nd Ed). Sage.

Muennig, P. (2015). Can universal pre-kindergarten programs improve population health and longevity? Mechanisms, evidence, and policy implications. *Social Science & Medicine*, *127*, 116-123. https://doi.org/10.1016/j.socscimed.2014.08.033

Musgrave, J., & Payler, J. (2021). Proposing a model for promoting children's health in early childhood education and care settings. *Children & Society*, *35*(5), 766-783. https://doi.org/10.1111/chso.12449

Našlėnė, Ž., Petrauskaitė, I., & Želvienė, A. (Eds.) (2020). *Lietuvos vaikų sveikatos būklės pokyčiai ir netolygumai* [Changes and inequalities in the health status of Lithuanian children]. Higienos instituto sveikatos informacijos centras. https://www.hi.lt/uploads/pdf/leidiniai/Informaciniai/Vaiku-sveikatos-leidinys_2020.pdf

Natsiopoulou, T., Vidali-Laloumi, E., Zachopoulou, E., & Trevlas, E. (2010). An innovative preschool health education program. *Health Science Journal*, *4*(2), 110-117. https://www.hsj.gr/medicine/913n-innovative-preschool-health-education-program.pdf

Neuendorf, K. A. (2002). *The content analysis guidebook.* Sage.

Noble, K., Fetherston, H., Jackson, J., & Craike, M. (2020). *Effective integration of health promotion in early childhood education and care settings. Policy paper 2020-02*. Australian Health Policy Collaboration, Mitchell Institute, Victoria University. https://www.vu.edu.au/sites/default/files/effective-integration-of-health-promotion-in-ecec-settings.pdf

Parcel, G. S., Bruhn, J. G., & Murray, J. L. (1983). Preschool Health Education Program (PHEP): Analysis of educational and behavioral outcome. *Health Education Quarterly*, *10*(3-4), 149-172. https://doi.org/10.1177/109019818301000303

Patton, M. (1990). *Qualitative evaluation and research methods* (pp. 169-186). Sage.

Phajane, M. H. (2014). Exploring the roles and responsibilities of early childhood teachers. *Mediterranean Journal of Social Sciences*, *5*(10), 420-424. https://doi.org/10.5901/mjss.2014.v5n10p420

Smith, B. J., Potts-Datema, W., & Nolte, A. E. (2005). Challenges in teacher for school health education and promotion. *Promotion & Education*, *12*(3-4), 162-164. https://doi.org/10.1177/10253823050120030116

Strazdienė, N., & Burkė, A. (2019). Ikimokyklinio ugdymo įstaigos dinaminės ugdymo(si) aplinkos ir vaikų fizinio aktyvumo sinergija [The synergy between a dynamic educational environment of a pre-school educational institution and the physical activity of children]. *Acta Paedagogica Vilnensia*, *43*, 156-171. https://doi.org/10.15388/ActPaed.43.11

Sveikatos ir lytiškumo ugdymo bei rengimo šeimai bendroji programa [General program of health and sexuality education and family preparation] (2016). Švietimo ir mokslo ministerija. https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/285853b09aee11e68adcda1bb2f432d1

Sveikatos ugdymo bendroji programa [General program of health education] (2012). Švietimo ir mokslo ministerija. https://www.smm.lt/uploads/documents/vidurinis_ugdymas/SVEIKATOS%20UGDYMO%20BENDROJI%20PROGRAMA.pdf

Tomokawa, S., Kaewviset, S., Saito, J., Akiyama, T., Waikugul, J., Okada, K., Kobayashi, J., & Jimba, M. (2018). Key factors for school health policy implementation in Thailand. *Health Education Research*, *33*(2), 186-195. https://doi.org/10.1093/her/cyy008

Ventura, A. K., & Worobey, J. (2013). Early influences on the development of food preferences. *Current Biology*, *23*(9), 401-408. https://doi.org/10.1016/j.cub.2013.02.037

Watanabe, K., & Dickinson, A. (2017). Comparative study of preschool children`s current health issues and health education in New Zeland and Japan. *Contemporary Issues in Education Research*, *10*(4), 219-224. https://doi.org/10.19030/cier.v10i4.10035

Woynarowska, B. (red.). (2017). *Edukacja zdrowotna* [Health education]. PWN, Warszawa.

Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M., Espinosa, L., Gormley, W. T., Ludwig, J., Magnuson, K., Phillips, D., & Zaslow, M. (October, 2013). *Investing in our future: The evidence base on preschool*. Society for Research in Child Development.

Žvironaitė, A. (2008). *Sveikos gyvensenos įpročių ugdymas ir reklama* [Education of healthy lifestyle habits and the rote of advertising]. [Rankraštis]: (socialiniai mokslai, edukologija): magistro darbas. Vilniaus pedagoginis universitetas.