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

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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.
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 Sefiddash 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 & Burkë, 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%).
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 1. Factors promoting the integration of health education

| Category                        | N (%) | Subcategory                        | N (%) | Subcategory components                                                                 |
|---------------------------------|-------|------------------------------------|-------|----------------------------------------------------------------------------------------|
| Children’s health problems      | 97    | Health deterioration               | 46    | Current health of children; deteriorating/becoming worse children’s physical, mental, social health |
|                                 |       |                                    |       | Deteriorating children’s state of health                                                 |
|                                 |       |                                    |       | Deteriorating children’s health indicators                                               |
|                                 |       |                                    |       | Insufficient parental attention to children’s health                                     |
|                                 |       |                                    |       | Various children’s health problems                                                       |
| Lack of physical activity       | 22    | Physical activity                  | 6     | Lack of physical activity, deteriorating physical activity                               |
|                                 |       |                                    |       | Limited opportunities for movement and physical activity                                 |
|                                 |       |                                    |       | Inappropriate children’s daily routine                                                   |
| Unbalanced nutrition            | 17    | Nutritional problems               | 3     | Unbalanced/inappropriate nutrition at home                                              |
|                                 |       |                                    |       | Inappropriate nutrition habits                                                           |
|                                 |       |                                    |       | Deteriorating food quality                                                                |
|                                 |       |                                    |       | Promoting unhealthy foods in families                                                    |
|                                 |       |                                    |       | Children are poorly acquainted with the principles of healthy eating                      |
| Negative effects of IT          | 12    | IT activities                      | 3     | Careless parents’ attitude towards the use of smart technologies                         |
|                                 |       |                                    |       | IT negative impact on children’s health                                                   |
|                                 |       |                                    |       | Long time spent using technologies                                                       |
| The importance of children’s health education | 61  | Teachers’ attitude                 | 20    | Teacher’s activity and attitude towards health education                                 |
|                                 |       |                                    |       | Understanding of health education importance within teachers and in school community      |
|                                 |       |                                    |       | The attitude of leaders and teachers, a unified attitude towards children’s health promotion |
|                                 |       |                                    |       | Commitment to raising a happy and healthy child                                          |
|                                 |       |                                    |       | The aim to expand the competencies of educators                                         |
|                                 |       |                                    |       | The need to purposefully initiate child’s physical activity                              |
| Health education improvement    | 19    | Health promotion                   | 4     | Healthy and secure environment creation                                                  |
|                                 |       |                                    |       | Comprehensive/ holistic child education                                                   |
|                                 |       |                                    |       | Attitude towards early health education                                                   |
|                                 |       |                                    |       | Continuous improvement, the aim to improve education                                     |
|                                 |       |                                    |       | The aim to provide students with knowledge about a healthy lifestyle                      |
|                                 |       |                                    |       | Opportunities to integrate health education into all subjects                           |
| Health competence development   | 19    | Health promotion                   | 4     | The basics of a healthy lifestyle are formed in early childhood                          |
|                                 |       |                                    |       | Strengthening children’s responsibility for their own and other’s health                 |
|                                 |       |                                    |       | The aim to help children develop health-friendly skills and habits                       |
|                                 |       |                                    |       | Necessity and desire to develop health competence                                        |
|                                 |       |                                    |       | Formation of the right approach to the development of a healthy lifestyle                |
| Children’s needs                | 3     | Children’s need to move and to be in the fresh air | 1 | Children’s interest in health issues, their personal interest                         |

Note: Totally 192 semantic units were extracted.
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.

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).

| 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 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,
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 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) |
| 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
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 preschoolers, 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%), and 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

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**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) | Organised healthy people/healthiness days | 5 (3.1) |
| | | | | Healthy living weeks | 1 (0.6) |
| | | | | Hygiene training | 5 (3.1) |
| | | | | Boating and scouting | 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.
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) |
| 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) |
| | | Minor importance | 5 (4.6) | The role of the teacher is not primary, family is most important | 5 (4.6) |

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) |

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) |
| | | | | Close 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 preschool 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.

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