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THE PROBLEM OF FREQUENTLY ILL CHILDREN IN EARLY CHILDHOOD: CAUSES, RISK FACTORS, AND PREVENTIVE MEASURES

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Abstract

This article analyzes the relevance of the problem of frequent morbidity in early childhood, as well as its main etiological causes and the biological, social, and hygienic risk factors influencing its development, based on a review of scientific literature. The predominance of acute respiratory infections among frequently ill children (FIC), immune system immaturity, perinatal pathologies, improper nutrition, psychoemotional stress, and environmental factors are highlighted. In addition, primary, secondary, and socio-hygienic preventive measures aimed at disease prevention and health promotion in this group of children are examined. The obtained data demonstrate the necessity of addressing frequent morbidity through a comprehensive and integrated approach.

Keywords: Frequently ill children, early childhood, respiratory infections, immunity, risk factors, prevention.

Introduction

In recent years, the problem of frequently ill young children has gained particular scientific and practical significance in pediatric practice. According to data from the World Health Organization (WHO), the incidence of acute respiratory

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infections among children aged 1–6 years is several times higher than in other age groups, which negatively affects children's health as well as their physical and psychoemotional development [1].

The term *frequently ill children* (FIC) refers to children who experience acute respiratory and other infectious diseases more than 4–6 times per year, and in some cases up to 8 episodes annually. In such children, diseases often have a prolonged course, are accompanied by complications, and tend to recur repeatedly. As a result, the functional state of the immune system becomes weakened, leading to the formation of a pathological cycle described as "disease – decreased immunity – recurrent disease" [3].

Scientific research indicates that frequent morbidity is not associated with a single cause but develops as a result of a complex interaction of biological, social, and hygienic factors [5,6]. Particularly in early childhood, immune system immaturity, perinatal pathologies, inadequate nutrition, unfavorable social conditions, and failure to comply with sanitary and hygienic requirements play a significant role [7].

For this reason, the study of the problem of frequently ill children, the identification of its main causes and risk factors, and the development of effective preventive and health-promoting measures constitute one of the most pressing tasks of modern pediatrics.

The concept of *frequently ill children* is widely used in pediatrics and is characterized by an excessive incidence of acute respiratory and infectious diseases over the course of a year. Although various authors interpret this condition differently, most researchers regard more than six episodes of illness per year in children under three years of age as a pathological condition [9].

The main etiological factor of frequent morbidity in early childhood is viral infections. Respiratory viruses—such as rhinovirus, respiratory syncytial virus, adenovirus, and parainfluenza viruses—are the most commonly encountered

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pathogens among children. According to studies, more than 80% of respiratory infections in preschool-aged children are of viral etiology [10].

The high mutational capacity of viruses increases the risk of recurrent infections in children. Therefore, even after the development of immunity against a specific virus, infection with other viral strains may still occur [11].

Pathologies observed during the perinatal period play an important role in the formation of frequently ill children. In preterm infants and children with low birth weight, the maturation of the immune system proceeds more slowly. Research indicates that the risk of respiratory infections in prematurely born children is 1.5–2 times higher. Maternal chronic infections, gestosis, anemia, and stress during pregnancy also have a negative impact on the child's subsequent health [14].

The child's immune system is directly related to the quality of nutritional intake. Breastfeeding is considered the most effective method for reducing the number of frequently ill children. Numerous studies demonstrate that the incidence of respiratory and gastrointestinal infections is significantly lower in breastfed children. Breast milk contains secretory immunoglobulin A (IgA), lactoferrin, lysozyme, cytokines, and other biologically active substances that provide passive immunity and stimulate the maturation and functioning of the immune system [11].

In contrast, artificially fed children exhibit markedly higher rates of infectious diseases, particularly respiratory and gastrointestinal infections. For this reason, breastfeeding is strongly recommended as an essential component of primary preventive measures. The absence of breastfeeding is regarded as one of the important causes of frequent morbidity in early childhood. Studies have confirmed that the incidence of respiratory and intestinal infections is significantly higher among artificially fed children [10].

In addition, the presence of chronic diseases creates a background for frequent morbidity. Conditions such as anemia, rickets, allergic diseases, and disturbances

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of the intestinal microflora interfere with the effective functioning of the immune system. Infectious foci, including adenoid vegetations and chronic tonsillitis, serve as persistent sources of pathogenic microorganisms [11].

Early involvement of children in collective environments is also considered one of the causes of frequent illness. In kindergartens and preschool educational institutions, children come into close contact with numerous sources of infection, which facilitates the rapid spread of infectious diseases [5]. During the adaptation period, increased secretion of stress hormones suppresses immune responses, leading to a higher incidence of illness.

Deficiencies of vitamins and micronutrients also have a significant impact on immune system function. Vitamin D deficiency is associated with an increased frequency of respiratory infections, while iron-deficiency anemia contributes to a prolonged course of diseases and their frequent recurrence [13].

In addition, the presence of chronic foci of infection—such as adenoid vegetations, chronic tonsillitis, and dental caries—serves as a constant source of inflammation in children. This condition leads to continuous immune system overload and increases the risk of frequent morbidity [14].

In recent years, the inappropriate and excessive use of antibiotics in children has contributed to an increase in the number of frequently ill children [1]. Despite the ineffectiveness of antibiotics in viral infections, many parents administer these drugs without medical prescription.

The intestinal microbiota plays a crucial role in the formation and regulation of the immune system. A normal microbiota modulates immune responses and limits the proliferation of pathogenic microorganisms [12]. In cases of dysbiosis, immune cell activity is reduced, which decreases the body's ability to combat infections.

Risk factors play a significant role in the development of frequently ill children and can be conditionally classified into biological, social, and hygienic groups.

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These factors are closely interrelated, and their combined effects contribute to the recurrent development of diseases in children.

Biological risk factors occupy a leading position in the pathogenesis of frequently ill children. First and foremost, hereditary predisposition should be emphasized. Studies indicate that if parents have allergic diseases, bronchial asthma, or chronic respiratory pathologies, the likelihood of frequent morbidity in their children is significantly higher [11].

This condition plays an important role in the continuous overload of the immune system and in the development of frequently ill children.

Social risk factors exert both direct and indirect effects on children's health. A low socioeconomic status of the family is associated with inadequate nutrition, limited access to medical services, and unsatisfactory hygienic conditions for children [15].

Low levels of parental medical literacy constitute one of the factors increasing the risk of frequent morbidity. Improper childcare practices, failure to recognize disease symptoms, and the unsupervised use of medications contribute to a prolonged course of illnesses in children [1]. In particular, the use of antibiotics without a physician's prescription represents a significant social risk factor [12].

An unhealthy psychological environment within the family also negatively affects the child's immune system. Parental conflicts and insufficient attention to the child lead to increased secretion of stress hormones, which in turn suppress immune responses [1].

Early enrollment of children in preschool educational institutions is also regarded as a social risk factor. During the adaptation period, the child encounters a new social environment, changes in daily routine, and exposure to numerous pathogens [5]. Studies indicate that the frequency of respiratory infections among children attending kindergartens is higher compared to children who are raised at home.

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Insufficient hygienic conditions play an important role in the development of frequently ill children. Poor ventilation of living spaces, high humidity, and excessive dust create favorable conditions for the development of respiratory diseases. Particularly during the cold season, inadequate ventilation of indoor environments promotes the rapid spread of infections in enclosed spaces [7].Failure to adhere to personal hygiene rules is one of the main routes of transmission of infectious diseases. Insufficiently developed handwashing habits contribute to the rapid spread of viruses and bacteria among children [6]. Studies have shown that regular handwashing can reduce the incidence of respiratory and gastrointestinal infections by 30–40% [5].

Climatic and seasonal factors also have a direct impact on the frequency of illnesses. During cold and humid seasons, the activity of respiratory viruses increases, and children spend more time indoors, which raises the likelihood of infection. According to research, the incidence of illness among children in the frequently ill children (FIC) group during the autumn–winter season is 1.5–2 times higher than in the spring–summer period.

One of the important causes of frequent morbidity in early childhood is the presence of chronic foci of infection in the body. Conditions such as adenoid vegetations, chronic tonsillitis, rhinosinusitis, and dental caries serve as persistent sources of inflammation. Microorganisms and their toxins are continuously released into the bloodstream from these foci, placing an excessive burden on the immune system.

Inappropriate selection of a child's clothing according to climatic and weather conditions is also considered a hygienic risk factor. Dressing too lightly in cold weather or excessive overwrapping disrupts thermoregulation and may lead to hypothermia or overheating [6].Failure to comply with food preparation and storage regulations leads to the development of gastrointestinal infections. Food products that do not meet sanitary standards pose a serious risk to children's health [5].

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Preventive and health-promoting measures play a leading role in effectively addressing the problem of frequently ill children. In modern pediatrics, these measures are implemented in accordance with the principles of primary, secondary, and tertiary prevention [14].

The main objective of primary prevention is the elimination of risk factors that contribute to the development of diseases. In this process, breastfeeding plays a crucial role. Numerous scientific studies have demonstrated that the incidence of respiratory and gastrointestinal infections is significantly lower among breastfed children.

Proper and balanced nutrition constitutes an essential component of primary prevention. Ensuring age-appropriate intake of proteins, fats, carbohydrates, vitamins, and micronutrients supports the full development and optimal functioning of the immune system. In particular, vitamin D supplementation has been scientifically proven to be effective in reducing the incidence of respiratory infections [9].

Vaccination plays a crucial role in the prevention of frequent morbidity. Immunization carried out in accordance with the national vaccination schedule not only prevents infectious diseases but also reduces the severity of their course.

Hardening (conditioning) measures also represent an important component of primary prevention. Air, water, and sun exposure procedures enhance the body's adaptive capacity and contribute to the activation of the immune system.

Secondary prevention is aimed at the early detection of diseases and their timely treatment. Placing frequently ill children under dispensary supervision and conducting regular monitoring of their health status are considered essential measures [15].

Sanitation of chronic foci of infection constitutes a key direction of health-promoting interventions. Treatment of conditions such as adenoid vegetations, chronic tonsillitis, and dental caries allows for the elimination of persistent sources of inflammation in the body [14].

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The use of vitamin and mineral complexes is widely applied in secondary prevention. Particularly during periods of seasonal hypovitaminosis, these preparations support immune system function. The administration of probiotics helps restore intestinal microbiota and increases resistance to infections [12].

From a clinical perspective, the identification of children at risk of frequent morbidity requires an individualized and multidisciplinary approach. Pediatricians should consider not only the frequency of infectious episodes but also the child's perinatal history, nutritional status, immune function, and living conditions. Early risk stratification allows for timely implementation of preventive strategies and reduces the likelihood of chronic disease development.

Preventive programs for frequently ill children should be integrated into primary healthcare services and focus on long-term monitoring rather than episodic treatment. Parental education plays a crucial role in improving outcomes, as informed caregivers are more likely to adhere to vaccination schedules, rational medication use, and proper hygienic practices. In this context, collaboration between healthcare providers, educators, and families is essential to reduce disease burden and improve quality of life in early childhood [14].

Therapeutic physical exercise, massage, and physiotherapeutic procedures are also included among health-promoting measures. These methods improve respiratory system function and enhance overall resistance of the body [15].

Socio-hygienic prevention is aimed at improving the child's surrounding environment. Improving living conditions, regular ventilation, and systematic cleaning of indoor spaces reduce the risk of respiratory infections [4].

The development of personal hygiene skills—especially the establishment of regular handwashing habits from an early age—is of particular importance. Enhancing parental medical literacy expands opportunities for disease prevention and ensures proper childcare practices [1].

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Conclusion:

The problem of frequent morbidity in early childhood is a multifactorial process in which biological, social, and hygienic factors play a significant role. Analysis of the scientific literature indicates that these factors should not be assessed or addressed in isolation but rather through a comprehensive and integrated approach. When preventive and health-promoting measures are applied systematically, it becomes possible to reduce the frequency of illnesses, improve children's overall health status, and ensure their full physical and psychoemotional development.

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