

## CARE OF CHILDREN WITH POLIOMYELITIS: A LITERATURE REVIEW

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**Abstract.** In some areas, poliomyelitis is still a major public health issue despite the efforts taken worldwide to eliminate it, and the treatment of these children still needs a wide range of multidisciplinary approaches. Research findings suggested that early intervention, family-centered care, and integrated rehabilitation programs play a key role in improving the functional outcomes and quality of life of affected children to a large extent.

**Keywords:** poliomyelitis, pediatric care, rehabilitation, nursing management, physical therapy, child health, paralytic disease, multidisciplinary approach

**Аннотация.** Полиомиелит остаётся серьёзной проблемой общественного здравоохранения в отдельных регионах, несмотря на глобальные усилия по его искоренению, а уход за больными детьми требует комплексных мультидисциплинарных подходов. Результаты исследования показывают, что раннее вмешательство, семейно-ориентированный уход и интегрированные реабилитационные программы значительно улучшают функциональные исходы и качество жизни больных детей.

**Ключевые слова:** полиомиелит, педиатрический уход, реабилитация, сестринский уход, физиотерапия, здоровье детей, паралитическое заболевание, мультидисциплинарный подход

**Annotatsiya.** Poliomieliit global bartaraf etish sa'y-harakatlariga qaramay, ayrim mintaqalarda muhim sog'liqni saqlash muammosi bo'lib qolmoqda va kasallangan bolalarni parvarish qilish keng qamrovli ko'p tarmoqli yondashuvlarni talab etadi. Natijalar shuni ko'rsatadiki, erta aralashuv, oilaga yo'naltirilgan parvarish va integratsiyalashgan rehabilitatsiya dasturlari kasallangan bolalarning funksional natijalari va hayot sifatini sezilarli darajada yaxshilaydi.

**Kalit so'zlar:** poliomieliit, bolalar parvarishi, rehabilitatsiya, hamshiralik parvarishi, fizioterapiya, bolalar salomatligi, falajli kasallik, ko'p tarmoqli yondashuv

**Introduction.** Poliomyelitis is the scientific name of polio, which is an acute viral disease infectious caused by poliovirus that mostly hits the youngest folks, like those below 5 and that may end up in irreversible paralysis, respiratory failure, and eventually death in extreme cases [1]. The Global Polio Eradication Initiative, which has been running since 1988, triumphantly reduced polio cases by more than 99 percent and still the disease keeps on challenging endemic places and unvaccinated people, so care and management of the infected kids cannot be neglected [2]. The disease process of poliomyelitis is characterized by a gradual killing of motor neurons in the spinal cord and brainstem area, which hence results in varying degrees of muscle weakness, flaccid paralysis, and possible respiratory distress, these conditions may basically change the child's development and thus require maintenance medical care and supportive nursing [3]. The care given by nurses to children suffering from poliomyelitis

includes a varia range of activities from initial management during the first infection to long-term rehabilitation plans with the aim of getting the patient as functional as possible and at the same time preventing the secondary complications like contractures, body sores, and respiratory infections. The healthcare professionals need to comprehend the complicated care requirements of these patients especially in those areas where polio cases are still reported or where survivors of the previous epidemics of post-polio syndrome are living.

**Methodology and Literature Analysis.** The study's methodological strategy consisted of an exhaustive review of peer-reviewed literature, clinical guidelines, and authoritative sources, incorporating texts in English, Russian, and Uzbek to guarantee the inclusion of different opinions from all over the world and the region regarding the treatment of pediatric poliomyelitis. The literature analysis indicates that the treatment of children with poliomyelitis can be divided into three different phases: 1) the acute phase with fever, pain, and possibly paralysis in the process of progression; 2) the recovery phase in which the regaining of the nervous system is partial; and 3) the chronic stage needing long-term rehabilitation and adaptive measures [4]. Modern nursing practices underline the necessity of proper positioning and careful handling of patients during the acute stage to reduce pain, avert complications, and maintain muscle function. Special emphasis is placed on respiratory monitoring considering the fact that restructuring and spinal respiratory involvement are the most fatal symptoms of the illness [1].

The Russian medical literature, especially the articles of Uchaikin and his co-workers, draws attention to the importance of the immediate application of passive mobilization and different range-of-motion exercises, as the immobilization of the patient prolongs the process of muscle atrophy, joint stiffness, and osteoporosis that together with the neurological damage create worse situation [5]. In this case, physical therapy is the main aspect of treatment for poliomyelitis, as there is a lot of evidence in favor of progressive strength-building exercises, hydrotherapy, and functional training which are all adapted to individual child's specific pattern of muscle involvement and residual strength. However, careful attention needs to be given not to overwork weakness that can turn out to be counterproductive and worsen the results in denervated muscles [6].

Correct and adequate nutritional support is another important factor in treating the disease, because young patients with poliomyelitis frequently have difficulties in eating, have higher metabolic rates, and are the ones who suffer from malnutrition that in turn slows down the healing and rehabilitation processes, thus requiring proper dietary assessment and supplementation if necessary [3]. The social and psychological factors in the care of children with poliomyelitis have raised more and more interest in the recent scientific literature by acknowledging the fact that children suffering from paralysis due to polio encounter major emotional problems such as anxiety, depression, social isolation, and educational disruption so they are in need of not only mental health support but also family counseling services [7]. Uzbek medical literature emphasizes the importance of family-centered care models that engage parents and caregivers as active participants in the rehabilitation process, providing education on home exercises, positioning techniques, and signs of complications while addressing the substantial caregiver burden associated with managing a child with chronic disability [8].

**Results and Discussion.** The overlap of published literature reveals a number of key points about the best care for children with polio that should be considered in the modern healthcare context. The research has shown that the treatment of paralytic polio patients in a coordinated way using multidisciplinary teams of physicians, nurses, physiotherapists, occupational therapists, and respiratory therapists along with nutritionists and psychologists working together to achieve each patient's goals is a major factor in the significant improvement of the outcomes [2]. This approach based on teamwork guarantees an all-around assessment of each child's needs and it also makes it easier for the doctors to talk to each other and not get into the situation where one of the doctors is not aware of an important aspect of the patient's condition because of the fragmented care. Moreover, the literature reveals the rehabilitation interventions' timing as a critical factor influencing long-term functional outcomes; thus, early physical therapy during the recovery is the rehabilitation that takes advantage of the potential neurological recovery and at the same time prevents musculoskeletal complications that can lead to permanent mobility limitation even when some motor function has returned [4].

Nonetheless, the application of the aforementioned evidence-based principles still has to go through considerable challenges in developing countries that are not equipped with or do not have access to specialized rehabilitation services; thus, various adaptations using community health workers, family caregivers, and simpler intervention protocols are necessitated in order to conquer the difficulties and surpass the expert care limitations through these [6]. Furthermore, the literature under review mentions that orthotic devices and assistive equipment can not only play a major role but also be considered essential for children with residual paralysis to show their maximum functional independence. The situation, however, is not easy and appropriate devices require skilled assessment, proper fitting, and ongoing adjustment as children grow-up - these activities represent a logistical and financial challenge that healthcare systems have to meet [5]. Care for the respiratory system comes out as a very crucial concern for children having bulbospinal involvement, hence the monitoring, secretion management, positioning strategies, and mechanical ventilation support that is sometimes required either temporarily during acute illness or permanently for severe cases are all activities that have evidence backing them as necessary and, consequently, should be done [7]. Polio's impact on the mental health of children and that of their families constitutes an area that needs more clinical focus, and one of the reasons for this is that studies report the existence of high rates of depression, anxiety, and adjustment disorder that can all act against rehabilitation participation and quality of life if not addressed timely and properly [8]. Also, the literature points to the fact that there are significant issues related to the provision of care for children with poliomyelitis sequelae when they grow into teenagers and adults, including sexual health, vocational counseling, and the possibility that post-polio syndrome will appear decades after the initial infection.

**Conclusion.** According to this literature review, a non-complicated, multidisciplinary approach is necessary in the care of children with poliomyelitis that not only focuses on the acute medical management, rehabilitation, and psychosocial support needs but also takes the interrelation of all these factors into consideration. The evidence continually backs up early interventions, family-centered care models, and personalized rehabilitation programs as the basic concepts that should be considered for the best results in children who are affected. Although there have been considerable advancements in understanding the best practices for non-affected children, the challenge of converting this knowledge into practice particularly in low-resource settings where the disease is widespread still remains. Health care systems are to direct their efforts

towards making rehabilitation services accessible, training health care professionals in evidence-based care techniques, and including mental health support in the standard treatment protocols. As the global eradication efforts carry on, the clinical expertise in the management of disease caused by poliomyelitis should still be maintained to guarantee that children affected receive the best care which will in turn lead to their functional potential and quality of life being maximized. The future research should be directed on finding and confirming the simplified care protocols suitable for the implementation in the diverse healthcare contexts while at the same time continuing to advance the understanding of the optimal rehabilitation strategies for this difficult condition.

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