Macedonian Pharmaceutical Bulletin, 72 (Suppl 1) 559 - 560 (2026)
Online ISSN: 1857-8969
DOI: 10.33320/maced.pharm.bull.2026.72.03.269
Short communication

Dietary and nutritional challenges in individuals with cerebral palsy in North Macedonia

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Introduction

Cerebral palsy is one of the most common chronic neurodevelopmental disorders in childhood and is associated with long-term impairments in motor function, growth, nutritional status, and quality of life (Rosenbaum et al., 2007). In addition to movement and postural disorders, individuals with cerebral palsy frequently experience feeding difficulties, oral-motor dysfunction, chewing and swallowing problems, prolonged mealtimes, and dependence on caregivers, all of which increase the risk of malnutrition and nutritional deficiencies (Arslan et al., 2022; Romano et al., 2015). Nutritional assessment and dietary management are further complicated by limited mobility and variable energy requirements. Despite these challenges, nutritional care remains insufficiently integrated into routine management, and data on the nutritional status and dietetic needs of this population in North Macedonia are limited. Therefore, this study aimed to assess nutritional status, diet-related problems, and nutrition-related awareness among individuals with cerebral palsy.

Materials and methods

A cross-sectional observational study was conducted using a structured questionnaire consisting of 97 questions, distributed electronically via Google Forms using the following link:

https://docs.google.com/forms/d/e/1FAIpQLSekPUeY_v5p3HkeWIeC8BpcLjEZllTEo4AheqhLOgRymhaL5A/viewform?usp=header

A total of 51 participants, specifically parents and caregivers of individuals with cerebral palsy, were included in the study. The questionnaire covered sociodemographic and anthropometric indicators, clinical characteristics of cerebral palsy, type of motor impairment, degree of functional dependence, feeding difficulties, GI symptoms, nutrition-related problems, appetite changes, dietary habits, as well as questions related to nutrition knowledge and access to professional dietetic support. Descriptive statistical methods were applied to analyze the obtained responses.

Results and discussion

Among the studied population a substantial nutritional and functional burden was found. Spastic cerebral palsy was the most common type (56.9%), followed by mixed cerebral palsy (25.5%), indicating a predominance of complex cases with increased nutritional vulnerability. A high level of feeding dependence was observed, with 41.2% fully dependent and 27.5% partially dependent on caregiver assistance. The inability to eat independently was reported by 45.1% of participants, highlighting functional dependence as a key factor affecting dietary intake. Difficulties with chewing or swallowing were reported in 49.0% of

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participants, representing a serious risk for inadequate energy and nutrient intake, as well as a potential risk for aspiration, respiratory complications, and deterioration of overall health status (Romano et al., 2015). Reduced appetite was reported in 39.2% of participants, representing another significant factor that may directly contribute to insufficient intake of energy and essential nutrients (Arslan et al., 2022). A considerable proportion of participants also experienced GI symptoms, particularly constipation and gastroesophageal reflux, which may lead to pain, discomfort, early satiety, and avoidance of meals, thereby negatively affecting nutritional status (Romano et al., 2015). Signs suggestive of nutrient deficiencies were reported occasionally in 33.3% and frequently in 9.8% of participants, indicating possible subclinical nutritional deficiencies. Prolonged mealtime duration and dependence on caregiver assistance may directly contribute to inadequate intake of energy, macronutrients, and micronutrients, which may negatively affect nutritional status over time (Romano et al., 2015). Muscle weakness was present in 72.5% of participants, consistent with evidence linking it to compromised nutritional status and altered body composition (Arslan et al., 2022). Fatigue or weakness was reported occasionally in 60.8% and frequently in 13.7% of participants, suggesting a potential association with compromised nutritional status. Weight loss within the previous six months was reported in 15.7% of participants, representing an additional indicator of nutritional risk. Some participants used dietary supplements to improve their nutritional status, indicating a perceived need for nutritional support, although not always under professional supervision. Overall, 43.1% of participants showed symptoms suggestive of nutritional deficiencies, highlighting the need for systematic assessment and individualized nutritional management. Nutritional status in cerebral palsy appears closely linked to feeding difficulties, GI symptoms, and functional limitations rather than anthropometric measures alone. Particularly concerning is the finding that only 9.8% of participants had received dietary counseling from a dietitian. This reflects limited access to professional dietetic support and insufficient integration of dietitians into multidisciplinary care, as previously reported (Romano et al., 2020). In addition, cerebral palsy is recognized as a condition associated with high nutritional risk requiring continuous nutritional assessment, individualized interventions, and regular follow-up (Romano et al., 2015; Romano et al., 2020).

Conclusion

Individuals with cerebral palsy are at increased nutritional risk due to motor impairment, feeding difficulties, feeding dependence, and potential nutritional deficiencies. Our findings highlight that nutritional assessment should be an integral part of routine clinical care, not limited to severe cases only. The inclusion of a qualified dietitian is essential for the early identification of nutritional risks and the development of individualized nutritional interventions that may improve nutritional status, functional capacity, and quality of life.

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