

ASSISTIVE TECHNOLOGY AND PERCEIVED SAFETY AND AUTONOMY IN PEDIATRIC NEUROLOGICAL REHABILITATION: A DESCRIPTIVE STUDY

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Background and Aims

Background Assistive technology (AT) plays a vital role in the rehabilitation of children with neurological conditions, aiming to enhance functionality, independence, and quality of life. However, its effect on the perception of safety and autonomy remains underexplored. Aim To investigate the impact of assistive technology on the perceived sense of safety and autonomy in children with neurological disorders.

Methods

Methods An epidemiological study was conducted using data collected in 2024 from the Early Intervention and Rehabilitation Department of the "P. & A. Kyriakou" Children's General Hospital. Descriptive statistics and frequency analysis were applied. Demographic characteristics of participants were recorded, and the "Pythia" scale was used to assess the type and frequency of AT usage.

Results

Results The study included 27 children aged 5-14 years (19 boys, 8 girls) diagnosed with cerebral palsy or posterior fossa tumors. AT devices used included: 11 wheelchairs, 22 ankle-foot orthoses, 1 spinal brace, 5 bicycles, 8 hand orthoses, 7 crutches, 8 walkers, and 4 standing frames. Both the walker and bicycle achieved 100% perceived safety and autonomy according to the children. However, caregiver responses showed some variation: 64% for wheelchairs, 86% for crutches, 75% for walkers, and 78% for ankle-foot orthoses. Among children using upper limb orthoses, only 1 out of 2 reported a sense of autonomy.

Conclusion

Conclusion Assistive technology significantly supports children's perceived sense of safety and autonomy during rehabilitation. Despite variations in self-image, AT is widely adopted and well-accepted in pediatric neurorehabilitation. The supportive role of the family environment enhances comfort and satisfaction with AT. Overall, AT contributes positively to promoting independence in children with neurological impairments.

Keywords: Assistive Technology, children, Neurological Rehabilitation