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Physical activity and exercise rehabilitation in pediatric cerebral palsy: A cross-sectional study among physiotherapists in Kosovo and Albania

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ABSTRACT

To improve physical functional capacity in people with cerebral palsy (CP), the rehabilitation workforce must be skilled in exercise physiology and load management to ensure evidence-based and participation-focused interventions. However, empirical data on clinical preparedness and practice patterns in Southeast Europe remain limited. To address this issue, this cross-sectional survey examined professional training, clinical experience, and the use of standardized physical activity assessments among 202 licensed physiotherapists in Kosovo and Albania (113 females, 55.9%; 89 males, 44.1%; mean age 29.7±7.0 years). The study utilized a structured questionnaire specifically designed to reflect local cultural and professional contexts. Results showed limited participation in specialized neurodevelopmental training and inconsistent use of validated assessment frameworks in both Kosovo (74.0%) and Albania (76.5%), with no biological sex differences. Recognition of ≥ 3 early clinical signs was significantly higher in Kosovo compared to Albania (80.0% vs. 64.7%, p=0.007). The use of early diagnostic tools was reported more frequently in Albania than in Kosovo (49.0% vs. 33.0%, p=0.021), with a significant sex difference observed only in Albania (p=0.005, φ=0.277; moderate effect), where females reported greater use. To improve health trajectories, future initiatives must focus on competency in loan management and motor learning. Implementing participation-focused exercise through interdisciplinary collaboration represents a vital strategy for evolving CP rehabilitation into proactive, physical activity centered model.

KEYWORDS

Cerebral Palsy; Physical Activity; Physiotherapy; Pediatric Rehabilitation; Workforce Development

1. INTRODUCTION

Cerebral Palsy (CP) is a major healthcare and socioeconomic challenge. Although initially a medical problem, its consequences extend across multiple clinical and social contexts. CP is defined as a heterogeneous group of brain disorders that appear in infancy or even early childhood that can permanently affect motion and muscle coordination (National Institute of Neurological Disorders and Stroke, 2025). Nowadays CP is considered the most prevalent motor disability in childhood, with a global prevalence ranging between 2-2.5 per 1,000 live births (Oskoui et al., 2013).

CP is generally considered a non-progressive condition, with the potential for some symptoms to evolve across the lifespan. Nonetheless, CP-related consequences affect individuals for longer periods or even throughout their life. This makes it a condition requiring life-long, specialised care. However, considering the combination of the low number of people suffering from CP, the diversity of health-related CP consequences and the specificity and complexity of required knowledge and skills for dealing with such cases, the number of healthcare professionals involved in their management seems to be often overlooked.

Children with CP demonstrate reduced habitual physical activity levels compared to typically developing peers, contributing to secondary cardiometabolic, musculoskeletal and psychosocial complications. Therefore, physiotherapy in CP is not only restorative but foundational for lifelong physical activity engagement and health maintenance. Physiotherapy therefore represents a key health profession that can provide extensive care and help to overcome many CP-related difficulties. A physiotherapist can help the patient improve certain traits, improve functional capacity and address musculo-skeletal limitations. Considering the direct implications of CP in musculoskeletal system, physiotherapists are the frontrunners in preserving and enhancing individual capacities and capabilities. However, a disparity exists between theoretical expertise and clinical application. Given the scarcity of existing research on this particular matter, recent investigations within the professional landscape highlight the need to train physiotherapists in modern, activity-based approaches for managing children with cerebral palsy as a necessity to provide evidence-based and qualitative care for the people in need (Sogbossi et al., 2026). What's most concerning is that these studies have in fact reported that most physiotherapists working with children with CP lack certified CP-specific trainings (Maharaj et al., 2021; Sogbossi et al., 2026). These highlight a critical gap in between

theoretical knowledge and professional practice, thus transferring all the weight of a very complex process on the shoulders of a partially trained and mostly not updated physiotherapist. Considering the complexity of these conditions, the need for long-term or lifelong care and the lack of major visible gains also imposes a barrier between young physiotherapists and pediatric neurology rehabilitation and a career path, which may discourage early-career physiotherapists from pursuing this specialization.

Albania and Kosovo are two developing upper middle-income countries located in the western Balkans, inhabited by the same ethnic population (Albanians in Kosovo form 91.8% of its population (ASK, 2024) and both characterized with no public information regarding CP. In fact, despite a growing physiotherapy workforce in the region, little empirical evidence exists regarding clinical practice patterns and training preparedness in pediatric neurorehabilitation. Given the identified disparities in education, training and the resulting professional hesitation, this study aims to evaluate physiotherapy practice patterns, training preparedness and standardized assessment use in pediatric CP rehabilitation, and to explore their implications for movement-based intervention and physical activity promotion.

Through the identification of these professional benchmarks, this research intends to provide a foundation for standardized educational frameworks that bridge the gap between evidence-based theory and real-world pediatric neurorehabilitation.

2. METHODS

2.1. Study Design and Participants

This was a cross-sectional survey study conducted in licensed physiotherapists in both countries. Inclusion criteria included being a licensed physiotherapist working in one of the two countries. A professional physiotherapy license is ensured once the expert provides the bachelor diploma within the European Qualification Framework of level 6 and above that is received in a higher education institution (HEI) within the respective country or within an accredited program of an international HEI that is officially accepted through the Ministry of Education. The Chamber of Physiotherapists of Kosovo or The Order of Nurses in Albania provides the license.

The study was conducted in between March and December 2025. Recruitment was conducted through flyers distributed at university facilities, "5th Albanian Physiotherapy Congress" organized by the Albanian Federation of Physiotherapy in Tirana, Albania, the "3rd International Physiotherapy Conference" organized by the Chamber of Physiotherapists of Kosovo in Prishtina, Kosovo, and

individual invitations to participate by the publicly available list on the Chambers webpage. According to the publicly available data from the respective professional chambers, approximately 1000 licensed physiotherapists are registered in Kosovo and approximately 1000 in Albania (≈2000 in total). With a total population of approximately 2000 physiotherapists, a sample of 202 represents approximately 10% of all licensed physiotherapists in both of these two countries while providing a 95% confidence level with a margin of error of approximately ±6.5% for proportion estimates. Participants gave an electronic consent to use their data at the beginning of their questionnaire completion.

A permission to conduct the research was granted by the Ethical Committee of the Chamber of Physiotherapists of Kosovo (protocol number 985, date 02.10.2025) and the Ethics Committee of the Catholic University "Our Lady of Good Counsel" (date 13 February 2025; no.050).

2.2. Instrument

The instrument used for this study was developed by the team of experts based on three previously published studies from (Merino-Andrés et al., 2022a; Knox et al., 2019; Miller et al., 2021a). The survey consisted of 21 items and was structured into three parts: 1) demographical data and knowledge on CP, 2) clinical practices and care provision, challenges, 3) sources and professional development.

Content validity was ensured through expert panel review during the translation and adaptation process. Prior to the main data collection, a pilot test (n = 10) was conducted to confirm the clarity and timing of the questionnaire.

2.3. Statistical Analyses

Continuous variables were reported as means and standard deviations, whereas categorical variables were reported as frequencies. To compare the differences between groups, a chi-squared test was used, whereas to compare the differences between continuous variables an independent samples t-test was performed. Effect sizes were calculated as suggested by (Cohen, 2013) Statistical power analysis for the behavioral sciences (2nd ed.). For continuous variables, effect sizes were calculated using Cohen's d, with values of 0.20, 0.50, and 0.80 interpreted as small, medium, and large effects, respectively. For categorical variables, effect sizes were calculated using Phi (φ) for 2 x 2 tables and Cramér's V for larger contingency tables, and interpreted as small (0.10), medium (0.30), and large (0.50). Internal consistency of selected questionnaire domains was explored using Cronbach's alpha coefficients as an indicator of response homogeneity across related items.

Normality of continuous variables was assessed using skewness and kurtosis coefficients. All statistical analyses were performed using IBM SPSS Statistics version 31 (IBM Corp., Armonk, NY, USA).

3. RESULTS

Internal consistency analyses showed low to moderate Cronbach's alpha coefficients across questionnaire domains (range $\alpha = 0.07–0.50$), indicating that the items reflected heterogeneous aspects of professional knowledge, training exposure and clinical practice rather than a single unified construct. Table 1 presents the demographic and professional characteristics of the study participants.

Table 1. Demographic and professional characteristics

	Total [n = 202]	Male [n = 89]	Female [n = 113]	p	Effect size (Cohen's d / φ / Cramér's V)	Kosovo [n = 100]	Albania [n = 102]	p	Effect size (φ / Cramér's V)
Age [years]	29.7 ± 7.0	30.3 ± 7.5	29.3 ± 6.6	0.324	0.141	31.3 ± 7.8	28.2 ± 5.8	**0.002**	0.451
Country where practice profession [Kosovo / Albania, n (%)]	100 / 102 (49.5 / 50.5)	42 / 47 (47.2 / 52.8)	58 / 55 (51.3 / 48.7)	0.559	0.041				
Level of education [Bachelors / Masters / PhD or equivalent, n (%)]	82 / 104 / 16 (40.6 / 51.5 / 7.9)	41 / 42 / 6 (46.1 / 47.2 / 6.2)	41 / 62 / 10 (36.3 / 54.9 / 8.8)	0.364	0.100	41 / 48 / 11 (41.0 / 48.0 / 11.0)	41 / 56 / 5 (40.2 / 54.9 / 4.9)	0.241	0.119
Physiotherapeutic professional practice [<2 / 2-5 / 5-10 / >10, n (%)]	61 / 61 / 26 / 54 (30.2 / 30.2 / 12.9 / 26.7)	23 / 26 / 11 / 29 (25.8 / 29.2 / 12.4 / 32.6)	38 / 35 / 15 / 25 (33.6 / 31.0 / 13.3 / 22.1)	0.373	0.124	22 / 28 / 16 / 34 (22.0 / 28.0 / 16.0 / 34.0)	39 / 33 / 10 / 20 (38.2 / 32.4 / 9.8 / 19.6)	**0.017**	0.224
Participated in a pediatric neurology rehabilitation training? [Yes / no, n (%)]	52 / 150 (25.7 / 74.3)	20 / 69 (22.5 / 77.5)	32 / 81 (28.3 / 71.7)	0.345	0.066	25 / 75 (25.0 / 75.0)	27 / 75 (26.5 / 73.5)	0.811	0.017
Participation in CP professional education, conferences or courses [>2 times/year, 1 time/year, less than 1 time/year, never (%)]	22 / 37 / 94 / 49 (10.9 / 18.3 / 46.5 / 24.3)	10 / 10 / 40 / 29 (11.2 / 11.2 / 44.9 / 32.6)	12 / 27 / 54 / 20 (10.6 / 23.9 / 47.8 / 17.7)	**0.029**	0.211	10 / 18 / 48 / 24 (10.0 / 18.0 / 48.0 / 24.0)	12 / 19 / 46 / 25 (11.8 / 18.6 / 45.1 / 24.5)	0.252	0.035

As described in Table 1 above, the mean age of participants was 29.7 ± 7.0 years, there were no significant age differences observed between males and females ($p = 0.324$, $d = 0.14$; negligible effect), whereas physiotherapists in Kosovo were significantly older than those in Albania ($p = 0.002$, $d = 0.45$; small to moderate effect). A total of 202 physiotherapists participated in the study,

including 113 females (55.9%) and 89 males (44.1%), with an almost even distribution between Kosovo (49.5%) and Albania (50.5%), and no biological sex differences in country of practice (p = 0.559). Most respondents held a master's degree (51.5%), followed by bachelor's degrees (40.6%) and PhD or equivalent qualifications (7.9%), whereas no significant differences between males and females could be observed (p = 0.364). Professional experience was broadly distributed across categories and with no differences between the sex groups (p = 0.373). A significant difference in professional experience distribution was observed between Kosovo and Albania, with the latter reporting a slightly lower professional experience (p = 0.017, V = 0.224; small to moderate effect). Only 25.7% of physiotherapists reported having participated in pediatric neurology rehabilitation training, whereas 70.9% of participants reported participation at CP-related professional education, conferences or courses to an extent of less than once per year or never, an outcome further characterized to be statistically higher in females (p = 0.029, V = 0.211; small to moderate effect). Table 2 presents the knowledge and professional preparedness of the participants.

Table 2. Knowledge and professional preparedness

	Total Ks (n = 100)	**Male Ks (n = 42)**	**Female Ks (n = 58)**	**p**	**Effect size (φ / Cramér's V)**	**Total Al (n = 102)**	**Male Al (n = 47)**	**Female Al (n = 55)**	**p**	**Effect size (φ / Cramér's V)**	**p value Ks vs. Al**	**Effect size (φ / Cramér's V)**
Correctly identified ≥ CP causes [yes / no, n (%)]	74 / 26 (74.0 / 26.0)	31 / 11 (73.8 / 26.2)	43 / 15 (74.1 / 25.9)	0.971	0.004	78 / 24 (76.5 / 23.5)	33 / 14 (70.2 / 29.8)	45 / 10 (81.8 / 18.2)	0.168	0.136	0.684	0.029
Recognized ≥3 early signs [yes / no, n (%)]	80 / 20 (80.0 / 20.0)	35 / 7 (83.3 / 16.7)	45 / 13 (77.6 / 22.4)	0.478	0.091	66 / 36 (64.7 / 35.3)	32 / 15 (68.1 / 31.9)	34 / 21 (61.8 / 38.2)	0.509	0.001	**0.007**	0.189
Uses early diagnostic tools [Yes / no, n (%)]	33 / 67 (33.0 / 67.0)	12 / 30 (28.6 / 71.4)	21 / 37 (36.2 / 63.8)	0.423	0.080	50 / 52 (49.0 / 51.0)	16 / 31 (34.0 / 66.0)	34 / 21 (61.8 / 38.1)	**0.005**	0.277	**0.021**	0.163
Frequency of treating people with CP [rarely (<2 cases/year) / time after time (2-10 cases/year) / often (>10 cases/year)]	65 / 19 / 16 (65.0 / 19.0 / 16.0)	32 / 5 / 5 (76.2 / 11.9 / 11.9)	33 / 14 / 11 (56.9 / 24.1 / 19.0)	0.130	0.202	81 / 13 / 8 (79.4 / 12.7 / 7.8)	43 / 3 / 1 (91.5 / 6.4 / 2.1)	38 / 10 / 7 (69.1 / 18.2 / 12.7)	**0.018**	0.280	0.063	0.165

As shown in Table 2 above, the majority of physiotherapists correctly identified ≥ 3 CP causes in both Kosovo (74.0%) and Albania (76.5%), with no biological sex differences in either country. Recognition of ≥ 3 early clinical signs was significantly higher in Kosovo compared to Albania (80.0% vs. 64.7%, respectively; p = 0.007, φ = 0.189; small effect). The use of early diagnostic tools was reported more frequently in Albania than in Kosovo (49.0% vs. 33.0%, respectively; p = 0.021, φ = 0.163; small effect), with a significant sex difference observed only in Albania (p = 0.005, φ = 0.277; moderate effect), where females reported greater use. Most respondents reported rarely treating children with CP in both countries, particularly in Albania (79.4%), with a significant biological sex difference again observed only in Albania (p = 0.018, V = 0.280; moderate effect). Table 3 describes the self-reported clinical practice patterns and interdisciplinary collaboration of physiotherapists in both countries.

Table 3. Clinical practice patterns and interdisciplinary collaboration

	Total Ks (n = 100)	**Male Ks (n = 42)**	**Female Ks (n = 58)**	**p**	**Effect size (φ / Cramér's V)**	**Total Al (n = 102)**	**Male Al (n = 47)**	**Female Al (n = 55)**	**p**	**Effect size (φ / Cramér's V)**	**P value Ks vs Al**	**Effect size (φ / Cramér's V)**
Use of standardized assessment instruments [always, time after time, rarely, never, n(%)]	24 / 28 / 17 / 31 (24 / 28 / 17 / 31)	8 / 12 / 3 / 19 (19.0 / 28.6 / 7.1 / 45.2)	16 / 16 /14 / 12 (27.6 / 27.6 / 24.1 / 20.7)	**0.022**	0.310	19 / 38 / 26 / 19 (18.6 / 37.3 / 25.5 / 18.6)	9 / 14 / 13/ 11 (19.1 / 29.8 / 27.7 / 23.4)	10 / 24 / 13 / 8 (18.2 / 43.6 / 23.6 / 14.5)	0.467	0.158	0.077	0.184
Development of home exercise programs [yes always, just when needed, no, n(%)]	74 / 23 / 3 (74 / 23 / 3)	32 / 8 / 2 (76.2 / 19.0 / 4.8)	42 / 15 / 1 (72.4 / 25.9 / 1.7)	0.525	0.113	72 / 28 / 2 (70.6 / 27.5 / 2.0)	27 / 19 / 1 (57.4 / 40.4 / 2.1)	45 / 9 / 1 (81.8 / 16.4 / 1.8)	**0.024**	0.271	0.705	0.059
Self-assessed effectivity of own interventions in people with CP [very effective, effective, average, little effective, no effective, n(%)]	26 / 35 / 31 / 7 (26 / 35 / 31 / 7)	12 / 14 / 11 / 5 (28.6 / 33.3 / 26.2 / 11.9)	14 / 21 / 20 / 2 (24.1 / 36.2 / 35.5 / 3.4)	0.354	0.181	26 / 46 / 25 / 4 / 1 (25.5 / 45.1 / 24.5 / 3.9 / 1.0)	12 / 17 / 14 / 4 (25.5 / 36.2 / 29.8 / 8.5)	14 / 29 / 11 / 1 (25.5 / 52.7 / 20.0 / 1.8)	0.089	0.281	0.418	0.139
Interprofessional collaboration [regularly, time after time, rarely, never, n(%)]	50 / 37 / 10 / 3 (50 / 37 / 10 / 3)	25 / 11 / 5 / 1 (59.5 / 26.2 / 11.9 / 2.4)	25 / 26 / 5 / 2 (43.1 / 44.8 / 8.6 / 3.4)	0.266	0.199	47 / 36 / 17 / 2 (46.1 / 35.3 / 16.7 / 2.0)	26 / 12 / 9 (55.3 / 25.5 / 19.1)	21 / 24 / 8 / 2 (38.2 / 43.6 / 14.5 / 3.6)	0.112	0.243	0.552	0.102
Consider a lack of protocols / national guidelines [yes, no, don't know, n (%)]	83 / 6 / 11 (83 / 6 /11)	34 / 3 / 5 (81.0 / 7.1 / 11.9)	49 / 3 / 6 (84.5 / 5.2 / 10.3)	0.883	0.050	80 / 5 / 17 (78.4 / 4.9 / 16.7)	35 / 5 / 17 (74.5 / 10.6 / 14.9)	45 / 0 / 2 (81.8 / 0 / 18.2)	0.045	0.246	0.494	0.084

Interested to become part of a national or regional CP physio network [yes, no, n (%)]	81 / 19 (81 / 19)	30 / 12 (71.4 / 28.6)	51 / 7 (87.9 / 12.1)	**0.038**	0.208	88 / 14 (86.3 / 13.7)	37 / 10 (78.7 / 21.3)	51 / 4 (92.7 / 7.3)	0.040	0.203	0.311	0.071

Females in Kosovo reported a significantly higher use of standardized assessment instruments ($p = 0.022$, $V = 0.310$; moderate effects), in comparison to no differences observed in Albania ($p = 0.467$). The majority of respondents reported consistently developing home exercise programs for their clients and/or family/care givers with a significant sex difference identified only in Albania ($p = 0.024$, $V = 0.271$; moderate effects). Self-assessed effectiveness of physiotherapy interventions did not differ significantly between sexes in either country ($p = 0.354$ and $p = 0.089$ in Kosovo and Albania respectively). Professional collaboration with colleagues was commonly reported in both countries, with a large proportion of physiotherapists perceiving a lack of national protocols or clinical guidelines for CP management (83.0% and 78.4%, respectively), with a significant difference between sexes in Albania ($p = 0.045$, $V = 0.246$; small to moderate effects). Finally, interest to establish and become part of a national or regional physiotherapy network on CP was high in both countries (>80%), particularly in females ($p = 0.038$, $\varphi = 0.208$ and $p = 0.040$, $\varphi = 0.203$ (small to moderate effects) in Kosovo and Albania, respectively).

4. DISCUSSION

This study provides novel empirical insights into physiotherapy practice patterns in pediatric CP in two Western Balkan countries, Kosovo and Albania. The major findings reveal limited participation in CP-specific professional training among licensed physiotherapists, particularly among male participants. Albanian physiotherapists (particularly females) reported greater use of early diagnostic tools and a higher frequency of developing home exercise programs, whereas physiotherapists in Kosovo reported more frequent clinical exposure to CP cases. Additionally, Kosovo physiotherapists reported a higher frequency of treating people with CP with female physiotherapists in Kosovo reported greater use of standardized assessment instruments in comparison to their male counterparts, a difference not observed between countries nor in Albania.

The survey instrument was derived from previously published studies (Merino-Andrés et al., 2022; Knox et al., 2019; Miller et al., 2021) which was originally designed to investigate neuro-developmental pediatric physiotherapists. Due to the specificity of this field and the lack of such experts in both countries, the questions were further adopted to be directed to other physiotherapists

that (among others) do offer care for children with CP. The limited participation in CP-specific professional training and the inconsistent use of standardized assessment tools observed among licensed physiotherapists in this study should be interpreted in a context where early, intensive and task-specific physiotherapy is a central determinant of functional outcomes in children with cerebral palsy. A comprehensive systematic review by Novak and colleagues (2013) demonstrated that interventions such as goal-directed training, constraint-induced movement therapy and home-based activity programs have stronger evidence for improving motor function and participation, particularly when delivered by adequately trained physiotherapists and guided by standardized outcome measures (Novak et al., 2013a). Notably, this review also highlighted substantial heterogeneity within the evidence base, reporting a range of outcomes like only 25% out of 64 discrete CP interventions were proven to be effective, a number as high as 70% of cases having uncertain effects, or even the fact that only 6% were proved to be ineffective (Novak et al., 2013b). In line with this, international recommendations also emphasize the importance of structured assessment frameworks for tailoring individualized rehabilitation pathways and monitoring longitudinal progress among CP populations (Knox et al., 2019). Therefore, the limited access to specialized training opportunities and inconsistent use of validated assessment tools that was observed in Kosovo and Albania may represent a significant barrier to achieving optimal neurodevelopmental rehabilitation outcomes. Such gaps could prevent capacities of physiotherapists to implement evidence-based, activity-focused interventions, which are known to improve motor learning, independence, and long-term engagement in physical activity among children with CP.

Extending the clinical context, the present findings should be also considered within the broader global agenda of strengthening rehabilitation systems and workforce capacity. The World Health Organization's Rehabilitation 2030 initiative has in fact identified insufficient availability of trained rehabilitation professionals, fragmented service organization and limited implementation of standardized care pathways as major barriers to improving outcomes in neurological conditions, including cerebral palsy (WHO, 2024). The outcome reports from the 3rd meeting emphasize how the of the workforce in many countries lag behind other health-related occupational groups mainly due to the limited awareness of their contribution and inadequate data, while facing challenges like shortages, migration, public–private sector imbalance, inadequate salaries, and poor regulation of education.

Evidence further indicates that reduced physical activity participation and limited access to structured exercise opportunities have been associated with increased cardiometabolic risk and poorer

long-term health trajectories in individuals with CP, underscoring the importance of sustainable movement-focused rehabilitation strategies embedded within healthcare systems (Verschuren et al., 2016). Within this context, the limited clinical exposure, restricted access to specialised training and perceived lack of national protocols identified in the present study may reflect systemic constraints with potential for future consequences, rather than individual professional shortcomings. Nonetheless, the strong interest expressed by physiotherapists in establishing national or regional professional networks suggests a readiness for collaborative capacity-building initiatives, which should be strategically contextualized. Strategic investment in competency-based education pathways, implementation of standardized assessment frameworks and strengthening interdisciplinary rehabilitation infrastructures may therefore represent key opportunities to enhance quality of care and long-term health outcomes for children living with cerebral palsy in Southeast Europe and Western Balkans.

One important implication from the present findings relates to the promotion of physical activity participation and play-based engagement as central components of contemporary CP management. It was recently evidenced that children with CP consistently demonstrate lower levels of habitual physical activity and higher sedentary behavior compared to their typically developing peers, which may contribute to adverse cardio metabolic health profiles and reduced functional participation across the lifespan (Alamoudi et al., 2024). Further systematic syntheses suggest that structured physical activity and sport participation can positively influence motor performance, coordination, and quality of life outcomes in pediatric CP, thus supporting their integration as routine components of rehabilitation pathways rather than adjunctive interventions (Romeo et al., 2024). Considering the extensive economical burden that the comprehensive CP care brings, it is important to find appropriate channels and means to provide and integrate physical activity and sports-specific care for people with CP. This would undoubtedly facilitate the heavy health and socio-economical burden that this condition imposes in both patients and their care providers. Additionally, training physiotherapists towards CP-specific exercise prescriptions would further help on the road to individual development, all-round independence, enhance the quality of life and even help increase longevity among this rather marginalized group. Furthermore, recent reviews focusing particularly on physical activity–based interventions in children and adolescents with CP do also highlight certain cognitive, psychosocial and participation-related benefits, while also emphasizing the presence of environmental and organizational barriers that limit sustained engagement in active lifestyles (Andrés-Pérez et al., 2025). This has to be considered as an important target not only for future physiotherapy but also for the current care provision. After all, a trained or specialized

physiotherapist in exercise prescription and physical activity care for neurodevelopmental conditions would play a pivotal role in designing enjoyable, developmentally appropriate and participation-focused rehabilitation strategies that incorporate play, sport and community-based movement experiences. Strengthening professional competencies in this area may therefore represent a key pathway for enhancing long-term physical activity adherence, social inclusion and overall health trajectories among children living with cerebral palsy.

Notwithstanding the carefulness and cautiousness that the authors performed while conducting this study, certain limitations emerged. Given the voluntary nature of participation and an estimated 10% of workforce coverage, selection bias cannot be excluded. Considering the specificity of the particular study field, respondents may represent physiotherapists with greater professional engagement or interest in pediatric rehabilitation. Furthermore, all data were self-reported and therefore provides a potential for recall bias. Finally, the reported use of standardized assessments, home exercise program designs and interprofessional collaboration may not fully reflect real-life scenarios of clinical practice. Finally, questionnaire domains demonstrated low internal consistency, suggesting that the instrument captured diverse dimensions of professional practice rather than a single latent construct. Therefore, findings should be interpreted as descriptive indicators of workforce characteristics rather than psychometrically derived scale scores.

5. CONCLUSIONS

In conclusion, this study provides important evidence on gaps in professional training and clinical exposure among physiotherapists working with children with CP in Kosovo and Albania. To improve health trajectories, future initiatives must focus on competency in loan management and motor learning. Implementing participation-focused exercise through interdisciplinary collaboration represents a vital strategy for evolving CP rehabilitation into proactive, physical activity centered model.

Strengthening specialized education, improving access to standardized assessment tools and fostering professional collaboration may support the implementation of evidence-based physiotherapy interventions that promote functional movement and physical activity participation in children with CP. Strengthening physiotherapy education and clinical preparedness may therefore play a crucial role in developing movement-based rehabilitation strategies that facilitate lifelong physical activity participation and improve health outcomes in children with CP.

The very high number of interested participants to become part of a national of regional CP physiotherapy network (81.0% and 86.3% in Kosovo and Albania, respectively) should be seen as an important and time-sensitive indicator to use the momentum and establish a collaboration that would further explore and enhance the opportunities for care related to people diagnosed with CP.

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All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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