High attendance of children with cerebral palsy in the Danish school system

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This letter is in response to the commentary by Lebeer. To view this paper visit https://onlinelibrary.wiley.com/doi/10.1111/dmcn.15635

EDITOR–We thank Jozef Lebeer for taking interest[1] in our newly published nationwide cohort study investigating how children with cerebral palsy (CP) perform in the Danish

school system,[2] and for sharing his family's story and the struggle when aiming for full inclusion of children with disabilities in all aspects of life.

It was interesting to read in Lebeer's commentary that he felt our title may be too pessimistic ('Children in Denmark with cerebral palsy rarely complete elementary school'). We aimed to access school performance of Danish children with CP, evaluated by completion of elementary school and overall grade point averages, and thereby the children's potential for further educational achievements. We also agree that inclusion and participation are important areas of focus;[3] although it could be argued that participation and inclusion are more meaningful outcomes of interest and also more complex measures.

We reexamined our data for measures of participation and inclusion of children with CP. When analyzing all children with a validated CP diagnosis born from 1997 to 2003 (excluding children who emigrated or died before the age of 19 years), a total of 818 children had a CP diagnosis and 562 (69%) of these were registered in the Danish Education Register in either the 8th or 9th grade. Thus these results indicate that almost three out of four children with CP were to some extent included in a mainstream school system up until age 16 years.

The differences between the children who were in mainstream school and those who were not are presented in Table 1. It appears that motor deficits, IQ deficits, as well as comorbidities contributed to the risk of exclusion from mainstream education.

Although not all of the children who were included did attend the final exams, the high rate is fortunately more optimistic than the result focusing on academic achievements. However, the high attendance is not surprising since the Danish school system has a high focus on the inclusion of all children, including those with disabilities.

Inclusion and participation are important for children with CP who are often unable to participate in everyday life situations, including school, not just because of their motor

disabilities.[4] An exclusive environment may lead to dissatisfaction and consequently a feeling of being categorized as differing from one's peers.

Besides highlighting inclusion, we also looked at the proportion of special educational needs (SEN) at or above 9 hours weekly, as a proxy for participation, since the Danish school system offers extra support for children with special needs, not only to improve academic achievements but also to enable individual participation. It is noteworthy that 253 (45%) of children with CP who were included in school had SEN, indicating resources used by the schools to promote participation.

There has also been a national focus on teachers' abilities to establish social interactions by incorporating more school activities based on working in groups. Additionally, in 2019, a national guideline recommend several constructive ways to enhance the inclusion and participation of children with CP, including cognitive testing.[5]

We are grateful for this input and hope that the supplementary analyses presented here are useful. Nevertheless, we do agree that more research is highly needed, not solely to highlight possible gaps in the systems but also to identify methods to increase school participation, inclusion, as well as performance, very likely including ICF profiles.

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Table 1: Descriptive characteristics of children with cerebral palsy who are either registered or not registered in the Danish Education Register.

Variables (n)	Registered *n* (%)	Not registered *n* (%)
Total (818)	562 (68.7)	256 (31.3)
CP subtype		
Spastic unilateral	273 (48.6)	72 (28.1)
Spastic bilateral	225 (40.0)	147 (57.4)
Ataxic or mixed*	27 (4.8)	16 (6.3)
Dyskinetic	37 (6.6)	21 (8.2)
Motor performance		
GMFCS level I	338 (60.5)	92 (36.4)
GMFCS level II	51 (9.1)	24 (9.5)
GMFCS level III	20 (3.6)	12 (4.7)
GMFCS level IV	89 (15.9)	59 (23.3)
GMFCS level V	61 (10.9)	66 (26.1)
Estimated intelligence		
IQ > 85	335 (62.4)	53 (21.2)
IQ 50–85	129 (24.0)	106 (42.4)
IQ < 50	73 (13.6)	91 (36.4)
Comorbidity		
Vision impairments	49 (8.9)	54 (22.0)
Epilepsy	70 (12.6)	78 (30.6)
Special educational needs	253 (45.1)	234 (93.6)
Variables are reported as n (%) unless otherwise specified. Missing values of the following, *n* (%):		

Registered in the Education Register: GMFCS: ≤ 5 (≤ 0.9)*, IQ: 25 (4.4), vision impairment: 10 (1.8), epilepsy: 5 (0.9), special educational needs: ≤ 5 (≤ 0.9)*. Not registered in the Education Register: GMFCS: ≤ 5 (≤ 1.9)*, IQ: 6 (2.3), vision impairment: 10 (3.9), epilepsy: ≤ 5 (≤ 1.9)*, special educational needs: 6 (2.3). *To avoid small and potentially recognizable data, ataxic and mixed CP subtypes are one category rather than two separate categories, otherwise, the results are specified as less than.

Abbreviations: n, number; CP, cerebral palsy; GMFCS, gross motor function classification system; IQ, intelligence quotient.