

## ORIGINAL ARTICLE

# Functionality and quality of life of children with disability



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## Abstract

**Introduction:** Preschool teachers are able to provide realistic information about functionality and quality of life of children with disabilities in regular classrooms.

**Objective:** To analyze functionality and quality of life of children with disabilities included in public schools with early childhood education programs in Florianópolis, in the State of Santa Catarina, Brazil.

**Methods:** Special education teachers, classroom teachers, physical education teachers, special education teaching assistants and classroom assistants for 2- to 5-year-old children with disabilities, who showed motor disabilities and were included in municipal public schools with early childhood education programs in Florianópolis. The instruments used were: the Pediatric Evaluation of Disability Inventory, the Pediatric Quality of Life Inventory version 4.0 and an identification form.

**Results:** There were similarities between teachers' reports about functionality and quality of life of children with disabilities.

**Conclusion:** There are different academic backgrounds, professional categories and working hours. However, the reports of these teachers showed homogeneity of results, which indicates that they are attentive to the educational tasks and child care, and engaged in inclusive education, child development and well-being.

**Keywords:** motor disorders, quality of life, children with disabilities, child education.

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## ■ INTRODUCTION

In Brazil, 23.9% of the population have some type of disability<sup>1</sup>, and the number of children with disabilities enrolled in Brazilian regular public schools is increasing each year<sup>2,3</sup>. These children may have some functional limitations, which will compromise activities of daily living, such as eating, personal hygiene, dressing and mobility, causing restrictions on their social, school and family life, and affecting their quality of life<sup>4,5</sup>.

Therefore, including children into early childhood educational systems allows parents and educators to learn about the children's abilities and skills in regular school settings, facilitating their development and inclusion<sup>6</sup>.

## ■ METHODS

This is a cross-sectional, descriptive-comparative study carried throughout 2015. Participants in this study were 80 teachers of 2- to 5-year-old children with disabilities, who showed motor disabilities and were included in the municipal public schools with early childhood education programs in Florianópolis. These teachers were classified as following: special education teachers, classroom teachers, physical education teachers, special education teaching assistants and classroom assistants. Inclusion criteria were: to work with 2- to 5-year-old children with disabilities enrolled in early childhood education classrooms; to have been working for at least three months; to have expressed willingness and informed decision to participate in the study in a free and consensual manner. Teachers were excluded if they did not have a Teaching Certification or had an incomplete Degree in Pedagogy, i.e., had attended at least 5 semesters of the course; and if they were not available on days scheduled for the interviews at educational institutions.

The Pediatric Evaluation of Disability Inventory (PEDI) was used to assess functionality and the Pediatric Quality of Life Inventory (Peds-QL), version 4.0 was used to measure quality of life. In addition to these instruments, a participant identification form especially designed for this study was adopted, with sociodemographic and clinical information about the children to be evaluated as well as sociodemographic and socioeconomic information about the teachers.

The PEDI consists of 197 items in the first part (functional skills) and 20 items in the second part (caregiver assistance). Each part is divided into three domains: self-care, mobility and social function<sup>7</sup>. The higher the total gross scores for functional skills are (maximum of 73 for self-care, 59 for mobility, and 65 for social function), the better the child's functional performance will be. And, the higher the total gross scores for caregiver assistance are (maximum of 40 for self-care, 35 for mobility, and 25 for social function), the more independent the child will be.

## ■ RESULTS

The sample consisted of 80 early childhood education teachers, with a mean age of 37.5 years (SD=7.9), of whom 73 (91.3%) were women and 7 (8.8%) were men. The teachers completed a total of 118 interviews proportional to the number of children identified in the study in order to report aspects of children's functionality and quality of life. The teachers' age group, professional category, level of

education, professional background and working hours are summarized in Table 1.

According to the "Anísio Teixeira" National Institute of Educational Studies and Research (INEP), there was a 9.1% increase in the number of enrollments of children and adolescents with disabilities in general education classrooms. Notably, the number of children with disabilities in early childhood education programs was 40,456 in 2012<sup>2</sup>.

Thus, this study aimed to analyze functionality and quality of life of children with disabilities included in public schools with early childhood education programs in Florianópolis, in the State of Santa Catarina, Brazil

The Peds-QL is composed of parallel self-report forms for the children and questionnaires for the parents<sup>8</sup>. The Peds-QL has 23 items and yields information on four dimensions: physical functioning, emotional functioning, social functioning and school functioning. The children should rate how much of a problem it has been in the last month<sup>8</sup>. The scores are transformed to a 0-100 scale with higher scores, i.e., close to 100, indicating better quality of life.

Following the authorization of the Management of Permanent Formation of the Municipality of Florianópolis (PMF), institutions working with children with disabilities were contacted. The teachers who agreed to participate signed an informed consent document. The parents of the children were informed of the research by the school principals, who emphasized that this research would be exclusively conducted among teachers, and no children would take part in it. The interviews were held in separate rooms and scheduled at times that did not affect the school routine. The instruments were administered by a trained professional allowing about one hour for each participant.

For the quantitative analysis of the data, the Statistical Package Social Science (SPSS) version 20.0 was used. First, the Shapiro Wilk test was used to verify the normality of the data. In order to compare the teachers' responses about functionality and quality of life in children with disabilities according to their professional category, the Kruskal Wallis test was used. For the comparison of functionality and quality of life in the children according to the type of disability, the Kruskal Wallis Test and the U Mann Whitney test were used. In order to compare functionality and quality of life in children with disabilities according to the gait, the U Mann Whitney test was adopted.

This studied was approved by the Ethics and Research Committee involving Human Subjects of the State University of Santa Catarina (UDESC), with the opinion Nr. 1.006.003 - (CAAE: 38770314.1.0000.0118)

education, professional background and working hours are summarized in Table 1.

In the interviews, the teachers provided information about 31 children with disabilities. The mean age of the children was 4.5 years (SD = 1.2), 17 (54.8%) boys and 14 (45.2%) girls. Table 1 summarizes the age group, type of disability, gait, type of school and housing condition.

**Table 1:** Characteristics of teachers of children with disabilities. Florianópolis, SC, Brazil, 2017.

Teachers' Characteristics	Categories	n (%)	
Age group	18-25 years	04 (5.0)	
	26-44 years	60 (75.0)	
	Over 45 years	16 (20.0)	
Professional Category	Special education teacher	09 (11.3)	
	Classroom teacher	26 (32.5)	
	Physical education teacher	18 (22.5)	
	Special education teaching assistant	12 (15.0)	
Level of Education	Classroom assistant	15 (18.8)	
	Teaching Certification	02 (2.5)	
	Incomplete Bachelor's Degree	07 (8.8)	
	Complete Bachelor's Degree	19 (23.8)	
Professional Background	Specialization	48 (60.0)	
	Master's Degree	04 (5.0)	
	Pedagogy	59 (73.8)	
	Physical Education	19 (23.8)	
Working hours	Teaching Certification	02 (2.5)	
	20 hours	13(16.3)	
	30 hours	14(17.5)	
	40 hours	53(66.3)	
	Children's categories	Categories	n(%)
	Age group	2 to 4 years	10 (32.3)
Over 4 years		21 (67.7)	
Type of disability	Cerebral palsy	11 (35.5)	
	Multiple disabilities	09 (29.0)	
	Others	11 (35.5)	
Gait	Ambulation	12 (38.7)	
	Lack of ambulation	19 (61.3)	
Type of School	Day-care center or CEC of CF	25 (80.6)	
	Contracted Day-care center	06 (19.4)	
housing Condition	Lives with parents / relatives	26 (83.9)	
	Live in an institution	05 (16.1)	

Source: Own author's production. Note: n, number of subjects; % percentage corresponding to the number of subjects; CEC, Child's Educational Center; CF, City of Florianópolis

The comparison of functionality among children with disabilities according to the type of disability revealed statistically significant differences for all PEDI domains ( $p < 0.001$ ) in children with cerebral palsy and other disabilities and in children with multiple disabilities and other disabilities ( $p < 0.001$ ) (Table 2).

The comparison of overall quality of life of children with disabilities according to the type of disability revealed statistically significant differences ( $p < 0.001$ ) among children with cerebral palsy and multiple disabilities; among children with cerebral palsy and other disabilities and among children with multiple disabilities and other disabilities ( $p < 0.001$ ) (Table 3).

Table 4 shows the values of medians, minimum and

maximum obtained from the teachers' reports on functional skills and caregiver assistance (self-care, mobility and social function) according to the children's gait. A statistically significant difference was found in the functional domains of ambulatory and non-ambulatory children with disabilities ( $p < 0.001$ ).

In regards with total quality of life, there were statistically significant differences between ambulatory and non-ambulatory children with disabilities ( $p < 0.001$ ). In the domains of quality of life among ambulatory and non-ambulatory children, there were statistically significant differences in the following aspects: physical functioning ( $p < 0.001$ ), emotional functioning ( $p = 0.004$ ), social functioning ( $p < 0.001$ ) and school functioning ( $p < 0.001$ ).

**Table 2:** Comparison of functionality according to the type of disability Florianópolis, SC, Brazil, 2017.

Domains		Functional skills					K value	p value
		P1	P2	P3	P4	P5		
Self-care								
Cerebral palsy	$\chi$	21.1	20.6	25.7	13.7	27.0	26.795	<0.001
	DP	16.8	17.6	17.2	5.3	23.8		
Multiple disabilities	$\chi$	21.0	21.8	18.4	12.2	32.5		
	DP	19.2	19.3	17.8	13.7	17.8		
Others	$\chi$	40.8	40.4	48.7	21.0	42.6		
	DP	21.8	21.1	20.9	-	22.1		
Mobility								
Cerebral palsy	$\chi$	13.3	14.7	18.0	6.7	25.4	30.268	<0.001
	DP	18.2	18.9	20.0	6.5	24.3		
Multiple disabilities	$\chi$	18.7	19.5	17.9	10.0	29.5		
	DP	23.3	24.3	20.9	21.8	22.6		
Others	$\chi$	35.7	35.9	45.5	38.0	36.8		
	DP	22.5	21.7	17.4	-	22.1		
Social Function								
Cerebral palsy	$\chi$	22.1	20.5	21.2	23.5	18.2	28.347	<0.001
	DP	15.5	14.1	10.8	13.3	15.1		
Multiple disabilities	$\chi$	18.5	17.0	16.0	9.2	25.5		
	DP	16.9	16.7	13.5	6.9	18.1		
Others	$\chi$	35.3	35.6	38.4	32.0	35.6		
	DP	16.4	16.6	14.3	-	15.6		
Domains								
Self-care								
Cerebral palsy	$\chi$	9.5	9.0	11.2	6.7	11.6	25.540	<0.001
	DP	8.5	7.5	7.7	4.0	10.8		
Multiple disabilities	$\chi$	9.2	8.4	8.7	4.2	15.7		
	DP	10.6	10.0	9.7	8.8	10.9		
Others	$\chi$	20.6	20.1	26.0	11.0	20.3		
	DP	13.1	11.9	11.4	-	13.1		
Mobility								
Cerebral Palsy	$\chi$	7.2	7.4	9.0	2.5	12.2	24.173	<0.001
	DP	9.7	11.4	11.1	3.5	11.9		
Multiple disabilities	$\chi$	11.4	11.1	10.1	6.2	18.0		
	DP	13.3	13.2	11.9	13.8	11.6		
Others	$\chi$	20.5	20.5	26.0	19.0	21.3		
	DP	13.4	13.2	10.2	-	12.9		
Social Function								
Cerebral palsy	$\chi$	7.2	7.5	7.9	10.5	5.2	21.232	<0.001
	DP	6.3	6.5	5.6	7.6	5.8		
Multiple disabilities	$\chi$	7.8	5.9	5.9	2.8	10.7		
	DP	8.7	8.7	8.3	4.2	10.1		
Others	$\chi$	14.4	13.9	17.1	10.0	15.5		
	DP	8.5	9.2	6.8	-	7.9		

Source: Own author’s production. Note:  $\chi$ , mean; DP, standard deviation; k, value for Kruskal Wallis test; p, level of significance; P1, special education teacher; P2, classroom teacher; P3, physical education teacher; P4, special education teaching assistant; P5, teaching assistant.

**Table 3:** Mann Whitney U-Test values and significance levels for the differences between the disabilities, Florianópolis, SC, Brazil, 2017.

Functional skills		
Quality of life	U Value	p Value
Cerebral Palsy and Multiple Disabilities	35.923	<0.001
Cerebral Palsy and Other Disabilities	271.500	<0.001
Multiple disabilities and Other Disabilities	241.500	<0.001

Source: Own author’s production. Note: U, value for Mann Whitney U-Test; p, significance level

**Table 4:** Median, minimum and maximum values obtained in the PEDI domains according to the gait, Florianópolis, SC, Brazil, 2017.

Gait	Functional skills		P1	P2	P3	P4	P5	
Ambulation (n=12) X age= 4.3 years	Self-care	Median	53.0	52.5	56.0	36.0	54.0	
		Minimum-Maximum	24-70	32-63	26-66	36-36	31-62	
	Mobility	Median	52.5	52.5	51.5	49.0	53.0	
		Minimum-Maximum	15-58	20-58	36-59	49-49	20-57	
Lack of ambulation (n= 19) X age=4.6 years	Social Function	Median	41.5	43.0	39.5	21.0	46.0	
		Minimum-Maximum	11-56	7-56	8-54	21-21	9-53	
	Self-care	Median	15.0	10.0	17.0	11.0	12.5	
		Minimum-Maximum	1-37	1-45	1-42	2-21	2-43	
Gait	Mobility	Median	4.0	4.0	4.0	2.0	7.5	
		Minimum-Maximum	0-31	0-37	0-34	0-38	0-29	
	Social Function	Median	18.0	15.0	17.0	14.0	18.5	
		Minimum-Maximum	1-45	2-44	2-37	3-40	3-32	
Gait	Functional skills		P1	P2	P3	P4	P5	
		Median	26.0	25.5	28.5	20.0	28.0	
	Self-care	Minimum-Maximum	11-36	8-35	13-35	20-20	10-34	
		Median	27.0	30.5	31.5	31.0	28.0	
	Mobility	Minimum-Maximum	12-35	17-35	21-32	31-31	17-35	
		Median	19.0	19.0	18.0	10.0	19.0	
	Social Function	Minimum-Maximum	7-25	0-25	1-25	10-10	1-25	
		Median	7.0	6.0	7.0	3.0	5.5	
	Self-care	Minimum-Maximum	0-17	0-18	0-19	0-12	0-16	
		Median	0.0	0.0	0.0	0.0	0.0	
	Lack of fundation (n= 19) X age=4.6 years	Mobility	Minimum-Maximum	0-18	0-18	0-16	0-19	0-14
			Median	6.0	3.0	6.0	6.0	6.0
Social Function	Minimum-Maximum	0-20	0-20	0-20	0-23	0-13		

Source: Own author’s production. Note: n, number of subjects; X, mean; P1, special education teacher; P2, classroom teacher; P3, physical education teacher; P4, special education teaching assistant; P5, teaching assistant.

## ■ DISCUSSION

Children with disabilities who participated in this study had a diagnosis of cerebral palsy, multiple disabilities (association of two or more deficiencies: physical, intellectual, visual and/or auditory) or other disabilities (congenital clubfoot, poor upper and/or lower limb formation, congenital hypotonia or neuropsychomotor developmental delay). All children had motor impairments, some of them were able to walk independently, while most of them were unable to achieve autonomous gait.

Medians for non-ambulatory children were lower than those to ambulatory children in all Peds-QL domains, i.e., in functional skills and caregiver assistance as reported by all teachers. The results show that non-ambulatory children have the lowest medians for quality of life when compared to ambulatory children, indicating that children who did not walk independently have lower quality of life when compared to children who walk independently.

In the analysis of the Peds-QL domains, overall values for ambulatory children, according to the teachers' reports, were higher for physical functioning, social functioning and school functioning, when compared to non-ambulatory children. Regarding the emotional aspect, the values were similar for both groups. The mean value obtained from special education teaching assistants' reports (P4) was lower in all evaluated domains. Classroom teaching assistants (P5) gave the highest mean value in all domains evaluated for functional and caregiver assistance, when were compared to the other professional categories

The mean values for the children indicate that children with other types of disabilities obtained the highest values in all domains for both functional skills and caregiver assistance, when compared to children with cerebral palsy or multiple disabilities. This means that children with other types of disabilities show higher functional performance than the other children in the study.

Children's ability to move is essential for the interaction with people and with the environment<sup>9</sup>. Children with a typical pattern of development are able to acquire a wide range of motor skills, which allows them to control different postures, types of locomotion (walking, running, jumping, among others.) and manipulation of several objects and instruments<sup>9</sup>.

Children with disabilities, who have motor impairments caused by various types of disorders, may be affected during the acquisition and performance of basic motor skills (sitting, rolling over, walking and running) as well as during the performance of activities of daily living, such as eating, bathing, personal hygiene and mobility<sup>10-12</sup>. Motor limitations can also cause changes in communication and interpersonal relationships<sup>13</sup>.

Today, Brazilian children with disabilities are placed in regular public schools, and the number of enrollments has increased each year<sup>2,3</sup>. Early childhood education is the first stage of basic education and must follow the principles of inclusion, assuring access to general education for all children<sup>14</sup>. Early childhood education is the gateway to school inclusion<sup>15</sup> and the role of educational institutions in the lives of young children is undeniable. A school is a place where children meet their peers, socialize and

create their own identity<sup>16</sup>. It belongs to a phase in which the children's development is marked by major linguistic, attitudinal, affective, social and psychomotor acquisitions<sup>15</sup>.

Educating children under the age of 6 implies the integration of various tasks, such as health, safety, personal hygiene, eating, rest and recreation, as well as stimulation tasks that involve cognitive, social-emotional, psychomotor and language skills<sup>14</sup>. Teachers of early childhood education need to know the children and their disability very well, observe their behavior carefully at the day-care center or school, and obtain comprehensive information with their parents and other professionals who follow up on the children<sup>14</sup>. Knowing and understanding the children as well as their disabilities are of utmost importance. Teachers should carefully observe how the children communicate, how they perform their activities of personal hygiene and eating, how they relate to other children and professionals, how they learn as well as their forms of transfer and mobility<sup>6,14</sup>.

Children may attend early childhood education institutions in Florianópolis in part-time (maximum of 6 hours per day) or full time (maximum of 12 hours per day) basis. Therefore, early education teachers are professionals with an intimate knowledge of the daily life of the child. In this study, we chose to interview five different teachers who accompanied children with disabilities, some of them worked with children on a daily basis, such as classroom teachers, special education teaching assistants and classroom assistants; other teachers had a more specific type of work, such as special education teachers and physical education teachers. Of the 80 teachers participating in the study, the majority worked 40 hours a week with the children, i.e., they accompanied them 8 hours a day, except during teacher's planning activities or pedagogic meetings.

Each child and each disability is unique; therefore, teachers should look beyond the current pedagogic scope<sup>17</sup>. In this age group (0 to 6 years), children are highly dependent and rely on assistance to perform various activities of daily living, on frequent teacher attention as well as on constant vigilance for their safety<sup>18</sup>.

Amid the difficulties of children with disabilities to integrate into the school group, assessment tools are essential to provide information and insight for the school and families and, consequently, to promote inclusion<sup>19</sup>. They offer quantitative measures to assess the impact the disability could have on the child's development, encouraging the establishment of goals and strategies for nursing care and intervention<sup>20</sup>, educational strategies, as well as protective and preventive measures for these children.

According to Butler<sup>21</sup>, functional measures carried out in educational settings, which focus on daily living skills, are necessary to plan programs that are suitable for the children. In addition to evaluations that determine the advances and difficulties during children's care and development<sup>6</sup> as well as functional performance<sup>20</sup>, assessments of the emotional aspects and quality of life of children are also of great importance<sup>6,21</sup>. Evaluating the quality of life of children with all types of impairments is fundamental as well as considering all strategies,

interventions and available knowledge that may contribute to a greater development of children<sup>22</sup>.

Regarding functionality of children with disabilities in this study, the teachers reported that children showed commitment when performing activities in all domains of functional skills and caregiver assistance of PEDI. Only in the domain self-care (caregiver assistance), the mean values obtained were half of the total maximum value to be achieved by a child with typical development.

In general, the mean values were similar in all domains of functional skills. Mobility was the domain with the lowest average in general, and with the highest number of children considered to be delayed or to have poor performance. As in the present study, Mancini *et al.*<sup>11</sup> who assessed 36 children with cerebral palsy and divided them into three groups (mild, moderate and severe), observed that functional mobility skills was the most impaired domain in all three groups.

Malta *et al.*<sup>23</sup> assessed functionality of 10 visually impaired children and 17 children with normal visual acuity (control group) between 4 and 8 years old. Their results showed that children with visual impairment had significantly lower performance in mobility and also in self-care (functional skills) compared with the children in the control group. This shows that visual impairment interferes with the knowledge of one's own body and its interaction with the objects and people in the environment<sup>24</sup>. Telles *et al.*<sup>25</sup> who evaluated 181 children aged 7 to 10 years with physical or mental disabilities in the process of school inclusion, observed that children with physical disabilities had the lowest means for mobility and for self-care (caregiver's assistance), showing that children needed more help from the caregiver in these two domains.

In the PEDI normative classification of functioning, according to the reports of the teachers of this study, most children were characterized as showing delay or poor performance in all domains (scores <30) of functional skills and caregiver assistance, revealing, therefore, that these children have significantly lower functional performance than Brazilian children with normal development and of the same age group. The same happened in the study conducted by Mourão and Araújo<sup>26</sup>, in which caregivers of 10 children with cerebral palsy between the ages of 2 and 18 years were interviewed about self-care aspects (functional skills and caregiver assistance). Most children showed normative scores lower than 30, both in functional skills and caregiver assistance, demonstrating delay or poor self-care performance. The other PEDI domains were not evaluated in this study.

When considering the types of children's disability in the present study, children with other types of disabilities, according to the teachers' reports, obtained the highest averages in all PEDI domains (functional skills and caregiver assistance) when compared to children with cerebral palsy and multiple disabilities. Notably, most children with other types of disabilities walk independently, while only a minority of children with cerebral palsy or multiple disabilities are able to walk. The values obtained for children with cerebral palsy and multiple disabilities were similar in all domains, indicating a certain similarity in the overall health of these children.

Regarding the quality of life of children with disabilities in the present study, which was evaluated by the Peds-QL, physical capacity was the most compromised domain according to the teachers' report. This domain encompasses activities, such as walking, running, playing games or doing physical exercises, lifting something heavy, bathing, feeling pain, picking up toys from the floor and having low energy or disposition. This confirms that motor impairments have a direct influence on the performance of basic activities of daily living.

When analyzing the total score obtained in Peds-QL, it could be observed that almost 40.0% of the children in the present study had total scores above 70, clearly indicating good quality of life in the last month. However, approximately 20.0% of the children obtained scores lower than 50, showing that quality of life is impaired and requires attention. The quality of life of the child is influenced by several factors, such as, domestic, schooling, social, cultural, political and socioeconomic aspects as well as physical health<sup>27</sup>. Therefore, complementary services and schools should contribute beyond the scope of teaching and learning, aiming to improve the quality of life of children<sup>28</sup>.

In the comparison of functionality and quality of life of children with disabilities according to the teacher's professional category, no significant statistical differences were found, demonstrating homogeneity of the responses given in the teachers' reports. The results show that teachers have similar knowledge about the children, even spending less or more time with them on a daily basis, and carry out different care routines or pedagogical activities according to their respective professional category. Research results suggest that the agreement between examiners tends to be greater when the examiners/respondents have the same type of relationship with the child than when the examiners/respondents have different roles, for example, the agreement is greater between parents or between professionals, than between parents and professionals<sup>29</sup>.

The study conducted by Oliveira<sup>30</sup> aimed to assess the association between functional profiles of 50 children with cerebral palsy reported by their caregivers (n=50) and rehabilitation professionals (n=25) in the areas of mobility and self-care, (PEDI). The results showed that there was an association between the caregivers' and professionals' evaluations about the functional skills of the children and about the caregiver's assistance required by the children to perform their functional activities.

The analysis of PEDI domains (functionality) according to the professional category yielded no statistically significant differences. In the analysis of Peds-QL domains (quality of life) according to the professional category, a significant difference was found in emotional functioning, and this difference was between the classroom teachers (P2) and physical education teachers (P3); between special education teachers (P1) and special education teaching assistants (P4) and between physical education teachers (P3) and special education teaching assistants (P4).

These differences can be explained by the time each of these professionals spends with the child. Classroom teachers (P2) and special education teaching assistants (P4) accompany the child on a full-time basis every day. Special education teachers (P1) and physical education teachers

(P3) spend less time with the children: the former may have contact with them once a week and the latter, a maximum of three times a week. Another point to be considered is that the items included in the emotional aspect of Peds-QL (feeling afraid or getting scared, feeling sad, feeling angry, sleeping poorly, or feeling worried) are feelings and emotions that do not manifest at all times, and the professionals who spend less time with the child may not have witnessed such manifestations. For example, sleep time is rarely observed by special education teachers (P1) and physical education teachers (P3).

The comparison according to the type of disability showed statistically significant differences for functionality in all PEDI domains. For quality of life (Peds-QL), the difference was significant in the domains of physical functioning, social functioning, and school functioning and total quality of life. The heterogeneous types of disability in this study (cerebral palsy, multiple deficiency and other impairments) may somehow explain the differences found. Several motor limitations may affect motor skills, functionality, health and quality of life of these children<sup>31,32</sup>. Therefore, this variety of disabilities affects the performance of self-care, mobility and social function more directly or not. It also has an impact on physical capacity, sociability, school performance, and on how the children react to the demands of environment in which they are inserted. The functional manifestations of the various environments must be individually evaluated, as functional performance is influenced by factors inherent to each child and by specific demands related to the everyday life tasks and the environment in which the child interacts<sup>33</sup>. According to Mancini *et al.*<sup>10</sup>, there is a strong and direct relationship between severity of disease and the expectation of functional performance, i.e., children with higher functional performance tend to have fewer impairments.

Regarding the differences found in the children's quality of life according to the type of disability, it could be observed that, like in functionality, impairments as consequences of disabilities affect the various dimensions of quality of life, impacting the life of each child in a different manner.

Considering the gait of children with disabilities, there were statistically significant differences in functionality and quality of life among ambulatory and non-ambulatory children. The values obtained for non-ambulatory children were lower for functionality and quality of life, indicating worse overall health status of these children. Typical development demonstrates that functional skills depend on sensory, motor and cognitive integration<sup>34</sup> and, when

impaired, as in the case of some deficiencies, there may be impacts on children's functional skills, such as independent gait acquisition<sup>34-36</sup>.

Information about the children, such as type and characteristics of disability, socioeconomic status and family life, interpersonal relations, therapies and previous school trajectory, will help teachers and educational institutions to establish a realistic and coherent planning targeted to the children's needs, limitations and physical conditions in order to value their potential<sup>14</sup>. Throughout the children's educational process, it is essential that all school staff, especially the teachers of children with disabilities, receive support from health professionals, in order to provide quality pedagogical work and guarantee effective participation of the children in all school activities<sup>37</sup>.

This comparative study showed that there were more similarities than differences between the teachers' reports on functionality and quality of life of children with disabilities. Despite the different levels of education, professional categories and working hours, the reports of these teachers show a certain level of homogeneity, indicating that they are attentive to the tasks related to educational and care of these children. In addition to confronting the challenge of inclusion, early childhood education teachers have the mission to educate and care for these children: they should follow-up on the children in the pedagogical tasks, participate in all the routine activities, create a way to enter their world, know their concerns and share their successes.

The motor impairments of the children in this study, according to the teachers' reports, directly affect children's performance in activities of daily living and somehow compromise their quality of life. Consequently, the children require more assistance from a caregiver. The results show that there are significant differences in functional performance and quality of life according to the type of disability and gait. Children with milder motor impairment and who are able to walk show better functional performance and improved quality of life.

Children's parents were not included as cross-informants, which could have provided additional insight into the research. Nevertheless, this is the first study to analyze the reports of teachers with different professional background, many of them are not frequently found in the early childhood education in the municipalities of Santa Catarina. Also, this study provided information on functionality and quality of life of children with disabilities from the teachers' perspective and assessed children with different types of disabilities with motor impairment and who were exclusively enrolled in regular public schools.

## CONCLUSION

Hence, identifying and quantifying difficulties, limitations and successes of children with disabilities promote a more adequate and targeted planning, where environmental changes, educational proposals, preventive and protective measures may improve inclusion, child development and the general well-being.

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## Resumo

**Introdução:** Professores da educação infantil são capazes de fornecer informações realistas acerca da funcionalidade e da qualidade de vida de crianças com deficiências incluídas nas classes regulares.

**Objetivo:** Analisar a funcionalidade e a qualidade de vida de crianças com deficiência inseridas na educação infantil da rede pública de ensino de Capital do Sul do Brasil.

**Método:** Foram selecionados professores de educação especial, professores de sala, professores de educação física, professores auxiliares de educação especial e auxiliares de sala de crianças com deficiência, entre dois e cinco anos de idade, que apresentam comprometimentos motores e estão inseridas na educação infantil da rede municipal de Florianópolis. Os instrumentos utilizados foram: Inventário de Avaliação Pediátrica de Incapacidade e o Questionário Pediátrico sobre Qualidade de Vida versão 4.0, além de uma ficha de identificação.

**Resultados:** Houve semelhanças entre os relatos dos professores sobre funcionalidade e qualidade de vida das crianças.

**Conclusão:** Há diferentes formações acadêmicas, categorias profissionais e carga horária de trabalho, porém os relatos destes professores apresentaram certa homogeneidade, indicando que estão atentos às tarefas educativas e de cuidados destas crianças, promovendo o processo de inclusão, o desenvolvimento infantil e o bem estar geral da criança.

**Palavras-chave:** transtornos motores, qualidade de vida, crianças com deficiência, educação infantil.

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