

# Perception of the adolescent with cerebral palsy about the quality of attachment

Percepção do adolescente com paralisia cerebral acerca da qualidade da vinculação  
La percepción de los adolescentes con parálisis cerebral sobre la calidad del apego

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## Abstract

**Background:** Cerebral palsy is a syndrome affecting the adolescent and the family, which can change relationship patterns and the perception of the attachment to parents and peers.

**Objectives:** To identify the disability-related differences in the perception of adolescents with and without cerebral palsy of the quality of attachment to parents and peers.

**Methodology:** Descriptive/correlational study, with a random sample composed of 66 adolescents from Northern Portugal (33 healthy adolescents studying at a public school and 33 adolescents with cerebral palsy attending a Centre for Cerebral Palsy), who were intellectually capable of understanding the data collection instruments.

Data were collected using the *Inventory of Parent and Peer Attachment*.

**Results:** No statistically significant differences were found between groups in the overall attachment. The only statistically significant difference was found in the alienation dimension, referring to peers. The scores obtained in the trust and communication dimensions were high, while those found in the alienation dimension were low, which allowed concluding that adolescents in both groups perceived their attachment as being of "high security".

**Conclusion:** These results may be relevant to plan nursing interventions among adolescents with cerebral palsy as they provide a better understanding of the characteristics of their psycho-affective development.

**Keywords:** adolescent; cerebral palsy; attachment.

## Resumo

**Enquadramento:** A paralisia cerebral é uma síndrome que afeta o adolescente e família podendo alterar padrões de relacionamento e a percepção sobre a vinculação com pais e amigos.

**Objetivos:** Identificar as diferenças na percepção da qualidade da vinculação de adolescentes, com e sem paralisia cerebral, aos pais e amigos, relacionadas com a deficiência.

**Metodologia:** Estudo descritivo/correlacional, com uma amostra aleatória constituída por 66 adolescentes do norte de Portugal (33 saudáveis a estudar numa escola pública e 33 com paralisia cerebral a frequentar um Centro de Paralisia Cerebral) com capacidades intelectuais compatíveis com a compreensão dos instrumentos de recolha de dados.

Na coleta de dados utilizamos o *Inventory of Parents and Peer Attachment*.

**Resultados:** Mostram que não existem diferenças estatisticamente significativas entre os grupos na vinculação global. A única diferença estatisticamente significativa verificou-se na dimensão alienação, referente aos amigos. Os scores nas dimensões confiança e comunicação são elevados e na alienação, baixos, concluindo-se que os adolescentes dos dois grupos percebem a sua vinculação como de "alta segurança".

**Conclusão:** Estes resultados poderão ser relevantes no planeamento das intervenções de enfermagem, junto dos adolescentes com paralisia cerebral, porquanto permitem um melhor conhecimento das características do seu desenvolvimento psicoafetivo.

**Palavras-chave:** adolescente; paralisia cerebral; vinculação.

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## Resumen

**Marco contextual:** La parálisis cerebral es un síndrome que afecta al adolescente y a la familia, y que puede cambiar los patrones de relación y la percepción sobre el apego hacia los padres y amigos.

**Objetivos:** Identificar las diferencias en la percepción de la calidad del apego de los adolescentes, con y sin parálisis cerebral, hacia los padres y los amigos, en relación con la discapacidad.

**Metodología:** Estudio descriptivo/correlacional con una muestra aleatoria de 66 adolescentes del norte de Portugal (33 sanos que estudian en una escuela pública y 33 con parálisis cerebral que van a un centro de parálisis cerebral) con capacidades intelectuales compatibles con el entendimiento de los instrumentos de recolección de datos.

En la recolección de datos usamos el *Inventory of Parents and Peer Attachment*.

**Resultados:** Los resultados muestran que no existen diferencias estadísticamente significativas entre los grupos en las dimensiones del apego. La única diferencia estadísticamente significativa se encontró en la dimensión de la alienación, referente a los amigos. Las puntuaciones obtenidas en las dimensiones de la confianza y la comunicación son altas y, en la alienación, bajas. La conclusión es que los adolescentes de ambos grupos consideran su apego como de *alta seguridad*.

**Conclusión:** Estos resultados pueden ser relevantes en la planificación de las intervenciones de enfermería en los adolescentes con parálisis cerebral, ya que permiten una mejor comprensión de las características de su desarrollo psicoafectivo.

**Palabras clave:** adolescente; parálisis cerebral; vinculación.

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## Introduction

There is limited research related to the impact of the adolescent with cerebral palsy on the family.

The adolescence of a child with cerebral palsy is a particularly stressful period due to the fears and concerns involved with independence, sexuality and decisions on his/her future. In fact, it is at this stage that peers play a significant role as they can provide support and encourage developmental tasks, as well as achieve the socio-emotional well-being and balance of adolescents with cerebral palsy.

The family uses certain resources described as facilitators of the adaptation processes, such as the ability to develop and maintain a social network and the communicational pattern, cohesion, and flexibility, among other factors. When these relationships are perceived as insecure, they may cause suffering, anguish, anxiety and developmental problems throughout life. Cerebral palsy may change adolescents' relationship patterns and perception of attachment to parents and peers.

The family is the first relationship context known by the individual and the interactions established therein are the backbone for the interactions that he/she shall establish in the future. Paterson, Pryor, and Field (1995) and Buist, Dekovic, Meeus, and Aken (2004) argue that relationships between adolescents and their parents maintain an adaptive function, for they provide a secure base which allows the adolescent to learn and explore new environments. Throughout this process, the quality of the attachment to parental figures is important, since it favours the progressive knowledge of the physical and social world and promotes the adolescent's development (Geadá, 1990). In parallel with the affective detachment from the family, relationships with peers take on a vital importance and begin to be designed and valued by the adolescent as a source of support and comfort in times of stress (Soares, 1996).

Affective relationships are fundamental pillars for a healthy development and the successful transition into adulthood of both normal adolescents and adolescents with disabling conditions (Geadá, 1990; Soares, 1996). Aware that the quality of affective relationships with family and peers during adolescence is essential for the emotional and cognitive development of adolescents and the experience and understanding of all relationships throughout the life

cycle, it is important to understand which factors may somehow compromise this quality. Thus, this study aimed to describe the influence of cerebral palsy in the adolescents' perception of their parents and peers as a secure, psychological and emotional resource and identify the differences in the perception of the attachment to parents and peers in both groups of adolescents analysed.

## Background

The quality of the adolescent's emotional attachment to important figures – mother, father and peers – will interfere with the adolescent's personality characteristics and his/her capacity for learning and adaptation to the physical and social environments (Geadá, 1990; Neves, Soares, & Silva, 1999; Machado & Oliveira, 2007; Mikulincer & Shaver, 2007).

The childhood attachments that are mainly established within the parent-child relationships change as the child grows (Bowlby, 2004, 2006). Still, Geadá (1990) and Soares (1996, 2007) mention that, if the attachment is effective and secure during adolescence, the young will be secure and confident in situations of interaction; however, if it is deficient or insecure, he/she will show feelings of anxiety and fear.

The quality of the attachment also determines the levels of self-confidence, self-esteem (Greenberg, Seigal, & Leich, 1983; Buist et al., 2004), anxiety (Soares, 1996), social competence and coping skills (Paterson et al., 1995).

Fleming (1997) explains that the attachment is not only important but also required and that the success of autonomy processes is associated with the perception of high levels of affection and emotional closeness with parents, satisfaction, intimacy and companionship.

The attachment is an important element of the adolescents' relationships not only with their parents, but also with other significant figures. According to Paterson et al. (1995) and Soares (1996, 2007), parents become reserve attachment figures. Adolescents seek their help whenever they are faced with difficult and stressful situations (Fleming, 1997). In the presence of chronic illnesses or disabilities, the adolescents' affective life may be disarranged, especially when the family reinforces the existing limitations as a result of their anguish, excessive

solicitude, overprotection or repeated prohibitions. As a set of persistent, complex and multiply debilitating syndromes (Andrada, 1996 and Liptak et al., 2001), cerebral palsy may interfere with the adolescent's normal development and psychological and emotional well-being, as well as his/her balance and motivation for interacting with family and peers. The adolescent looks at himself/herself as being different and having limited physical development, which prevents him/her from taking part in some activities with family and peers. For parents, it means losing the dream of the ideal child, which may lead them to denial, guilt, sadness or overprotection. Brothers and sisters may feel unsupported, be jealous and compete with or overprotect the disabled sibling. Based on the previously mentioned aspects, we set out to study possible connections between cerebral palsy and the adolescent's affective relationships, since we assume that cerebral palsy influences the adolescent's perception of his/her attachment to parents and peers. The consulted literature (Geadá, 1990; Buist et al., 2004; Arslan, 2008, 2009) highlights the importance of such figures in the adolescent's normal psycho-affective and social development.

Methodology

The methodology used in this study was a quantitative descriptive-correlational approach. The following hypotheses were formulated:

- H1 - Adolescents with cerebral palsy perceive their affective relationship with their mother as more secure than adolescents in the control group.
- H2 - Adolescents with cerebral palsy perceive their affective relationship with their father as more secure than adolescents in the control group.
- H3 - Adolescents with cerebral palsy perceive their affective relationship with their peers as less secure than adolescents in the control group.

Sample

Two independent samples were used in this study: the study group composed of 33 adolescents with cerebral palsy and the control group composed of 33 healthy adolescents. In order to achieve an identical level of understanding of the tests in both groups, the participants chosen for the group of adolescents with cerebral palsy had only a motor impairment, i.e. they had no cognitive or psychological impairment. Groups were mostly composed of female adolescents: 18 (54.6%) in the study group and 19 (57.6%) in the control group. Ages ranged between 12 and 15 years, with a mean age of 13.3 years in both groups and a standard deviation of 1.23 and 1.29 in the study and control groups, respectively. The most representative age group was 12 years, with 13 adolescents (39.4%) both in the study and control groups. As for education, Table 1 shows that both groups were very different.

Table 1  
Distribution of the sample according to school year, age and belonging group

School Year	Age	Study Group		Control Group	
		N	%	N	%
4th Year	12	2	6.1	-	-
5th Year	12	1	3.0	2	6.1
6th Year	12	5	15.2	6	18.2
	13	-	-	1	3.0
7th Year	12	5	15.2	5	15.2
	13	2	6.1	-	-
	14	1	3.0	-	-
	15	2	6.1	-	-
8th Year	13	4	12.0	5	15.2
9th Year	14	5	15.2	4	12.0
	15	2	6.1	2	6.1
10th Year	15	4	12.0	8	24.2
Total		33	100.0	33	100.0

Still regarding education, most adolescents in the study group attended 7th grade [10 (30.4%)], while most adolescents in the control group attended 10th grade [8 (24.2%)]. With regard to their families, most adolescents, both from the study group [30 (90.9%)] and the control group [32 (98.0%)], belonged to nuclear families. Of these, 27 (81.8%) in the study group and 17 (51.5%) in the control group were composed of parents and children.

The number of households with peripheral figures was high [15 (45.5%)] in the control group. However, only in three households were such figures (grandparents) constantly present. In the other households, their presence corresponded to the school year.

Most adolescents, both from the study group [19 (57.6%)] and the control group [19 (57.6%)], belonged to social class III and came from urban environments, 23 adolescents (69.7%) in any of the groups.

In summary, the groups' comparative analysis confirmed their similarity in terms of the variables of gender, age and place of residence. The statistically significant differences concerned the size ( $p=0.033$ ) and composition ( $p=0.009$ ) of the households, the existence of health incidents during the pre- and natal periods ( $p=0.012$ ) and the existence of changes in growth and development ( $p < 0.001$ ).

The participants of the study group attended a cerebral palsy centre and those of the control group were randomly chosen (their school was randomly selected from among the public schools and students were selected using the simple random sampling technique. Each group was assigned a serial number. The total numbers were put into a recipient and withdrawn until the desired total number of students for the control group was reached.)

### Data collection instruments

The sample was characterised using a Record Sheet and data were collected using the *Inventory of Parent and Peer Attachment* (IPPA) by Armsden and Greenberg (1987). The IPPA is a 75-item self-report questionnaire which assesses the adolescents' perceived attachment to their parents and peers. It has already been used in the Portuguese population (Geada, 1990, 1997) and it showed good psychometric properties (Paterson et al., 1995; Neves, Soares, & Silva, 1999; Machado & Oliveira, 2007; Mikulincer & Shaver, 2007). The inventory introduces

affective/cognitive and behavioural aspects of attachment relationships (Buist, Dekovic, Meeus, & Aken, 2004) and is conceptually based on Bowlby's theory of attachment. It consists of three scales which assess the adolescents' perceptions of the affective/cognitive dimensions in their relationships with parents and peers. It assesses the overall attachment and the three dimensions of trust, communication, and alienation or isolation (Buist et al., 2004). The *Trust* scale measures the degree of mutual understanding and respect in the attachment relationship, the *Communication* scale assesses the extent and quality of spoken communication, and the *Alienation* scale assesses feelings of anger and interpersonal alienation.

Scores range from 0 to 100 and assess whether the level of attachment is high, medium or low and divides the individuals into groups that perceive their relationship as a *high security*, *low security* or *ambivalent* relationship.

### Statistical procedures

Data were analysed using descriptive statistics (relative and absolute frequencies; measures of central tendency and dispersion) and inferential statistics (mean difference testing using the Mann-Whitney test, given that the study sample did not follow a normal distribution). The following significance levels were used:  $p < 0.05$  (significant difference),  $p < 0.01$  (very significant difference) and  $p < 0.001$  (highly significant difference). Data were analysed using the *Statistical Package for the Social Sciences* (SPSS) software, version 20.0.

### Formal and ethical procedures

The directing boards of both institutions authorised data collection. After information on the study objectives was provided and confidentiality of the children's identity was assured, the adolescents' parents were asked to sign an informed consent. Parents accompanied their children, though adolescents were given some privacy during the data collection process.

## Results

To analyse the relationship between the overall attachment of adolescents to their mothers, fathers

and peers in both control and study groups, the respective means of the IPPA subscales were compared (Mann-Whitney test for independent samples). Table 2 shows the values (minimum and maximum, means, standard deviations and differences) of the IPPA subscales in both groups.

The analysis of Table 2 shows that adolescents in both groups felt more attached to their mothers, followed

by their peers and, finally, their fathers. The average behaviour of both groups was as described, but the standard deviation, and the minimum and maximum values show that there were significant deviations to the mean. The scores were considered high and there were no statistically significant differences between both groups.

Table 2  
*Statistics regarding the overall attachment of adolescents to their mothers, fathers and peers by group*

Group	Attachment	N	Minimum	Maximum	Mean	SD	Mann-Whitney U
Study	Mother	33	49.00	96.00	74.58	9.83	Mother
	Father	33	36.00	96.00	69.39	14.40	$U = 493.0$ $p = 0.509$
	Peers	33	36.00	95.00	70.24	14.35	Father
Control	Mother	33	26.00	95.00	73.24	16.88	$U = 521.0$ $p = 0.763$
	Father	33	10.00	97.00	68.18	20.48	Peers
	Peers	33	41.00	91.00	73.15	14.73	$U = 462.5$ $p = 0.293$

Then, we studied the relationship between the subscale of the adolescents' trust in their mothers, fathers and peers in both control and study groups, by comparing the respective means of the IPPA subscales (Mann-Whitney test for independent samples). Table 3 shows the values (minimum and maximum, means, standard deviations and differences) of the IPPA trust subscale in both groups.

As for trust (Table 3), adolescents trusted the most in their mothers, followed by their peers and fathers.

In the control group, the first place was occupied by the adolescents' peers, followed by their fathers and, finally, their mothers. The scores obtained were considered high. Adolescents in the study group had the highest mean scores of trust in their mothers and fathers and the lowest mean scores in their peers. There was a large dispersion of mean values, as can be seen in the standard deviation values. No statistically significant differences were found between both groups.

Table 3  
*Statistics regarding the trust of adolescents in their mothers, fathers and peers by group*

Group	Attachment	N	Minimum	Maximum	Mean	SD	Mann-Whitney U
Study	Mother	33	57.50	100.00	82.80	10.49	Mother
	Father	33	27.50	100.00	78.48	16.39	$U = 434.5$ $p = 0.157$
	Peers	33	42.50	107.50	80.15	17.21	Father
Control	Mother	33	30.00	97.50	74.70	17.24	$U = 489.0$ $p = 0.475$
	Father	33	22.50	97.50	75.08	18.08	Peers
	Peers	33	35.00	105.00	81.29	19.15	$U = 500.0$ $p = 0.568$

To assess the relationship between the subscale of the adolescents' communication with their mothers, fathers and peers in both control and study groups, the respective means of the IPPA

subscales were compared (Mann-Whitney test for independent samples). Table 4 shows the values (minimum and maximum, means, standard deviations and differences) of the IPPA communication subscale

in both groups. Thus, in terms of communication (Table 4), both the adolescents in the study and control groups indicated their peers in the first place, followed by their mothers and, finally, their fathers.

The scores were considered high. There was a large dispersion of mean values. No statistically significant differences were found between both groups.

Table 4

*Statistics regarding the communication of adolescents with their mothers, fathers and peers by group*

Group	Communication with:	N	Minimum	Maximum	Mean	SD	Mann-Whitney U
Study	Mother	33	36.11	88.89	69.11	12.32	Mother
	Father	33	25.00	88.89	62.63	18.06	$U = 445.0$ $p = 0.201$
	Peers	33	37.50	109.38	82.10	18.48	Father
Control	Mother	33	8.33	97.22	71.13	20.14	$U = 522.5$ $p = 0.777$
	Father	33	0.00	94.44	59.26	23.29	Peers
	Peers	33	43.75	103.13	83.05	13.89	$U = 534.0$ $p = 0.893$

To analyse the relationship between the subscale of the adolescents' alienation or isolation from their mothers, fathers and peers in both control and study groups, the respective means of the IPPA subscales were compared (Mann-Whitney test for independent samples). Table 4 shows the values (minimum and maximum, means, standard deviations and differences) of the IPPA alienation or isolation subscale in both groups.

As for the alienation or isolation (Table 5), the highest

mean score in the study group referred to peers, followed by fathers and, finally, mothers, while in the control group the highest mean score referred to fathers, followed by mothers and, finally, peers. All scores were considered low, with the exception of peer scores in the study group, which were medium. There was a large dispersion of mean values. The only statistically significant differences observed between both groups were found in the dimension related to alienation from peers ( $U = 389.5$ ;  $p = 0.046$ ).

Table 5

*Statistics regarding the alienation or isolation from the mother, father and peers by group*

Group	Alienation	N	Minimum	Maximum	Mean	SD	Mann-Whitney U
Study	Mother	33	4.17	87.50	43.31	17.71	Mother
	Father	33	4.17	87.50	49.12	17.67	$U = 517.0$ $p = 0.723$
	Peers	33	21.43	78.57	50.00	16.82	Father
Control	Mother	33	12.50	87.50	42.30	17.93	$U = 410.5$ $p = 0.084$
	Father	33	16.67	100.00	44.95	20.62	Peers
	Peers	33	10.71	78.57	41.13	17.99	$U = 389.5$ $p = 0.046$

Thus, none of the hypotheses was confirmed since no statistically significant differences were found between groups in the overall attachment. However, it should be noted that there were significant differences between groups in the dimension related to alienation or isolation from peers. Still, it was not enough to confirm hypothesis H3 as the results referring to the overall alienation in both groups are not statistically different.

In summary, as the scores obtained in the trust and communication dimensions were high and those obtained in the alienation or isolation dimension were low, we believe that adolescents in both groups considered their relationship to be a *high security* relationship.



## Discussion

Results allowed us to conclude that adolescents in both groups felt more attached to their mothers, followed by their peers and, finally, their fathers. Thus, a good attachment to the maternal figure seems to facilitate the establishment of affective bonds with significant others, who are qualified as sources of support or a safe haven. A secure attachment to fathers may be associated with the exploration of a group and the development of situations of interaction with strangers which provide stimulation and pleasure (Calado, 2008).

These scores were high and, if the type of the adolescents' perceived relationships with their attachment figures is considered, we may conclude that this connection is marked by positive experiences of trust in accessing these attachment figures.

Attachment to their mothers was perceived by adolescents as more secure and affective and a relationship of emotional support, as mothers were the people to whom they were more attached (Larose & Boivin, 1998). However, if the dimensions of trust, communication and alienation or isolation are analysed, we conclude that peers scored highest in the communication dimension in both groups, as in the trust dimension in the control group. These results may be due to the fact that, during adolescence, parents and children spend progressively less time together, considering that it is precisely with their friends that adolescents develop more activities (Geadá, 1997; Paterson et al., 1995).

As for peer relationships, they are important, compatible and complementary to the ones established with parents. If the adolescent has good relationships with his/her friends, it means that he/she also has a good relationship with his/her parents as conflicts only arise when one party is dominant over the other.

The lack of statistically significant differences between groups in relation to the perceived attachment to parents and peers may be due to the fact that adolescents in the study group only showed changes at the sensorial and motor development levels and were included in the group of adolescents with *mild cerebral palsy*. It may be observed that adolescents in both the study and control groups perceived the attachment to their parents and peers as a secure, psychological and

emotional resource. Given the type of perceived relationship, we may conclude that peers were a source of support for them and that they played an important role in the transfer of affections from the family system to a different system more focused on the group. This will make it possible for our adolescents to have a healthy development and high quality in the transition to adulthood. We believe that this attachment is marked by positive experiences of trust in accessing attachment figures.

Soares (1996) refers to the importance of engaging with the attachment figures, by saying that this contributes for the attachment to be more often positive, for the coherent integration of experiences at the emotional level, and for the creation of opportunities to engage in intimate and rewarding relationships.

## Conclusion

When cerebral palsy affects a family member, it affects the whole family. Therefore, many problems and changes may occur in day-to-day family life. The adolescence of a child with cerebral palsy is a particularly stressful period given the fears and concerns involved with independence, sexuality and decisions on his/her future. At this stage, peers play an important role because they can provide support and encourage developmental tasks, as normally as possible, as well as achieve the socio-emotional well-being and balance of adolescents with cerebral palsy. The results of our study showed high scores in how adolescents from both the study and control groups perceived the affective/cognitive dimensions in their relationships with parents and peers, i.e. in their attachment.

When assessing the degree of mutual understanding and respect in the attachment relationship and the extent and quality of spoken communication, both adolescents with cerebral palsy and adolescents in the control group perceived their affective relationship with parents and peers as a *high security* relationship, i.e., as a secure psychological and emotional resource. This observation was reinforced given the low scores in terms of feelings of anger and interpersonal alienation, which emphasised the adolescents' understanding of a secure attachment.

To sum up, this study made it possible to identify

differences in the perception of the attachment to parents and peers in both groups of adolescents under analysis, thus contributing to a better knowledge of the adolescents' psycho-affective relationships, particularly the adolescents with cerebral palsy, and their relevance to the establishment of intervention programmes with multidisciplinary teams. Both adolescents and their parents should participate in the planning and implementation of these programmes aiming at a better family balance and well-being of adolescents.

Based on the results obtained, we find it relevant to suggest that further studies should be carried out to ensure a more accurately assess of the impact of cerebral palsy on affective relationships. For these studies, we recommend the following: (i) age as an independent variable; (ii) the inclusion of samples with individuals of early adolescence (puberty) and mid-adolescence, as some studies indicate greater attachment to peers during mid-adolescence; and (iii) the use of qualitative methodologies to clarify differences between relationships which cannot be clarified using quantitative methods.

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