Social and conceptual adaptive skills of individuals with Intellectual Disability

Habilidades adaptativas sociais e conceituais de indivíduos com deficiência intelectual

ABSTRACT

Objective: To analyze the social and conceptual skills of people with Intellectual Disability. Method: A descriptive study conducted with 100 caregivers, 9 teachers and 100 people with Intellectual Disability from a Philanthropic Institution in Campina Grande, Paraíba, Brazil. The participants ages in the study ranged from 9 to 83 years. Three-hundred (300) questionnaires were administered. The data were processed by Factorial Matching Analysis in the Tri-Deux-Mots program. Results: Considering the factorial correspondence plan, it should be noted that the social skills of students in the age group between 21 and 40 years were related to playing educational games, playing ball with friends and dating. Regarding conceptual skills, students revealed autonomy in relation to school activities, however the caregivers emphasized that they lack autonomy in relation to these skills. In perceiving the realities of students from different classes, teachers presented opposing opinions on dependency and independence issues. Conclusion: Education and health professionals and caregivers can collaborate more effectively in developing the autonomy of people with Intellectual Disability by promoting a more interactive environment which provides skills development and interpersonal relationships without discrimination, disrespect or prejudice.

DESCRIPTORS

Intellectual Disability; Social Skills; Adaptation Psychological; Personal Autonomy; Nursing Care.
INTRODUCTION

In educational and clinical contexts, the diagnostic evaluation of people with intellectual disability (ID) remains a problematic issue for teachers, psychologists and other health professionals, being an important theme for those who try to understand the problem and investigate complex interventions required for these individuals(1). According to the American Association on Mental Retardation (AAMR), currently named the American Association on Intellectual and Developmental Disabilities (AAIDD), ID refers to a disability which limits intellectual functioning and adaptive behavior involving fundamental conceptual, social, and practical skills in everyday experiences(2).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) does not disagree on the ID definition set by the AAIDD. However, DSM-V establishes four levels of ID: mild (F70), moderate (F71), severe (F72), and profound (F73). These categories are understood from the adaptive functioning which determines the level of support needed to perform daily activities. The main differences are related to the issue of autonomy, and in the ability to achieve social, conceptual and practical skills(3).

It is understood that people with ID generally have difficulties regarding social adaptive skills, demonstrating problems of social behaviors. Such skills require the development of verbal and non-verbal language in order to transfer critical information and tools that facilitate the understanding and analysis of messages in cultural and social environments(4).

The environment is the main factor in the intellectual development of the individual, since children are influenced through social interactions, and receive stimuli which impact their development process. ID is not due to a minor degree of development, and it is characterized by a qualitative singularity identified at the psychological level. This reveals that the difference between people with and without ID is not only restricted to measurable aspects related to intelligence. It composes a more complex picture, and this distinction reaches the way the personality is structured, the internal dynamics of the body and its psychological manifestations(5).

This configuration ratifies the limitation of instruments which seek to measure intellectual traits and neglect the qualitative clarification of the dynamics revealed by the result. Although they are able to quantify the psychological functions, the tests do not approach issues concerning the competency, ability or talent, levels which relate to their own personality, understood in relation to specific intellectual particularities(5-6).

When it comes to fully developing the potential of people with ID, researchers have valued more dedication and commitment, because the more one invests in the person, the more they advance in elaborating and executing skills. Thus, an enriched environment is needed in which these children can have contact with other children with or without disabilities in order to intensify their social interaction(7).

In everyday life, it is common belief that people with ID are not capable of this interaction, which results in depriving them of important dynamics and a lack of investment in developing adaptive skills, which compromises their autonomy. The term “autonomy” may be related to politics, education, philosophy and society. Generally, its definition is associated with the idea of the capacity to accomplish something, with freedom, independence and self-management(8).

Autonomy is associated with the development of adaptive skills, and its non-development may result in a lack of independence, affecting both the daily lives of people with ID and their ability to respond to changes in life and environmental demands(2). In this context, this study aimed to analyze the social and conceptual skills of people with ID.

METHOD

STUDY DESIGN

This is a descriptive study.

SAMPLE POPULATION

Nine teachers out of a total of 14 aged between 34 and 46 years participated in the study, along with 100 caregivers (whether or not parents) in the age group of 20 to 83 years of age, and 100 students with ID between 9 and 56 years old from a philanthropic institution in Campina Grande, Paraíba state, Brazil.

DATA COLLECTION

First, 24 items related to adaptive social and conceptual skills were identified in the literature. These are considered important in assessing people in general and particularly those with ID. Social adaptive skills relate to traveling, playing, dating, walking, playing sports with friends, playing instruments, playing educational games, gathering with family, going to the mall, going to the park, relating to peers, taking responsibility, being manipulated or deceived, demonstrating naïve behavior, following rules, obeying laws, and seeing oneself as a victim. Conceptual adaptive skills include researching in books, studying alone or with help, knowing how to read and write, having fluent language and understanding the concept of money(2).

This set of items was then submitted to content analysis by a committee of 13 judges. An acceptable minimum agreement rate of 87.2% was obtained(9).

Three questionnaires with dichotomous questions about conceptual and social adaptive skills were then elaborated to identify the daily activities performed by people with ID. The first questionnaire was elaborated from the reading and writing development model proposed by Seabra and Capovilla, which focuses on the logographic stage. In it, visual recognition of some general characteristics of the written word is explored based on the situation, i.e. it relates the attitudes under different types of psycholinguistic items such as words and associations with figures(10).

This questionnaire was composed of 15 questions with illustrations which represent the social and conceptual adaptive skills.
The second questionnaire is applied to the caregivers and contemplated the same questions that had been asked to individuals with ID (students), but had no illustrations. The third questionnaire was adapted and directed to the experience of the teachers’ adaptive skills with their students in the classroom and contained 15 questions, also without illustrations.

Student and teacher data were collected in the classroom. The researcher and two volunteer researchers from the Psychology course of the Universidade Federal de Campina Grande (UFCCG) entered each classroom, presented the questionnaire and asked the students to collaborate. The teachers were also asked to answer the questionnaire about each student. Data collection from the caregivers was done by sending the questionnaire home inside the students’ agendas. Telephone calls were also made to encourage the questionnaire to be completed and returned.

DATA ANALYSIS AND PROCESSING

A total of 300 instruments were completed: 100 by caregivers, 100 by students with ID, and 100 by teachers. The Tri-Deux-Mots program version 2.2 was used for data analysis. This program is recommended for processing content analysis of responses to open, closed and/or word association questions[11]. Factorial Correspondence Analysis (FCA) was carried out for which a dictionary was initially organized in alphabetical order, referring to the opinion variables or inductive stimuli. Next, a database was structured which contained independent and dependent variables.

The independent variables included the groups of participants (caregivers, teachers and students), gender (male and female), age group, education and diagnosis (cerebral palsy, Down Syndrome, ID and Other diagnoses). It should be noted that the category “other diagnoses” is related to people with autism, hydrocephalus, hypothyroidism, microcephaly and Cri du Chat Syndrome, but all these diagnoses are related to ID.

The age groups of the participants were organized in the database considering the groups of students between the ages of 9 and 20, then following the interval of nine numbers between the ages up to the age of 51 years, as identified among the majority of caregivers. In relation to education, due to the cognitive peculiarities of the individuals with ID, the classes were related as: youth and adult education (YAE) 1st year, YAE 2nd year, YAE 3rd year and others (project “to live” and workshops). The education of the caregivers and teachers was considered as: Elementary, High school, Higher education and others (caregiver’s education not declared or they did not attend school).

Dependent variables included responses about social and conceptual skills, organized as: (1) social skills developed; (2) conceptual skills developed; (3) undeveloped social skills; and (4) undeveloped conceptual skills.

Emphasis was given in the FCA processing (by the Tri-Deux-Mots program) to the axes which clarify the response modalities, pointing to the composition of the elements in an organized way in a representational or graphic field. The FCA seeks to demonstrate the correlations between the inducing stimuli and the specific independent variables of the individuals. The graph is analyzed by reading the modalities distributed in an opposite way on the axes or factors (F₁ and F₂). The factorial space is determined by the responses presented by the groups in relation to the inducing stimuli[12].

ETHICAL ASPECTS

The study was approved by the Research Ethics Committee of the Universidade Federal de Campina Grande under Opinion no. 945.526/2015. It completely met the precepts of Resolution no. 466/12 of the National Health Council, which provides for ethics in research involving human beings. A Free and Informed Consent Form (ICF) was signed by the caregivers and a Free and Informed Assent Form (IAF) was signed in the situations in which the student had written mastery and was independent.

RESULTS

Among the 100 individuals with ID, 58% were males and 42% females, aged 9 to 56 years: 34% aged 9 to 20 years; 30% between 21 and 30 years; 29% between 31 and 40 years; 6% between 41 and 50 years; and 1% over 51 years old. With regard to education, 59% were in the first year of the YAE; 8% in second year YAE; 12% in third year YAE; 6% participated in the “to live” project (group with older adults) and 15% in garden, cooking or handicraft workshop groups. Regarding their diagnoses, it was verified that 33% had Down’s Syndrome; 22% ID; 14% severe mental retardation; 9% moderate mental retardation; 7% cerebral palsy; 3% unspecified mental retardation; 3% microcephaly; 3% hypothyroidism; 3% mild mental retardation; 1% Cri du Chat Syndrome; 1% hydrocephalus; and 1% autism.

Regarding the 100 caregivers, 10% were men and 90% were women, in the age group between 20 and 83 years old, with age over 51 years old predominating, 38% of whom had primary education; 33% high school; 21% higher education; and 8% did not report their education or did not attend school. Regarding the teachers, all were female, had higher education and ages between 34 and 46 years, with the age group from 41 to 50 predominating.

The FCA resulting from the caregivers’, teachers’ and ID students’ responses was made from two inductive stimuli with the highest factorial loads associated with independent variables (participants, gender, age, education and diagnosis). The factors together explained a total of 94.8% of the total variance of responses, distributed among factors 1 with 89.4%, and 2 with 5.4% explained variance. In total, 4,163 words were associated with the inducing stimuli, of which 51 were different words. These were reduced according to the connection between the terms and similarity of the translations undergone by the words’ meaning established by the program itself. This reduction in the semantic similarity of the different words through the computational program revealed that 50 words were part of the factorial plan, according to the contribution of each word to the determined factorial space (Figure 1).
The referred associations had a factorial average load of 20 based on the sum of loads (1,000), divided by the total number of words in the plane (50). The evocations with larger factor loads were considered for analyzing the contributions of each inducer. Therefore, the selection criterion of words was twice the mean of factorial loads (40). These words are presented (Tables 1, 2, 3 and 4) according to the inducing stimuli. It can be noticed that words which presented higher factor loads for each inducer stimulus appeared, and these are related to each of the factors processed by the Tri-Deux-Mots program.

Table 1 – Factorial contributions for the “developed social skills” stimulus – Campina Grande, PB, Brazil, 2017.

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>Word</th>
<th>CPF&lt;sup&gt;a&lt;/sup&gt; – Factor 1</th>
<th>CPF&lt;sup&gt;b&lt;/sup&gt; – Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed social skills</td>
<td>Naive1</td>
<td>42a</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Peers1</td>
<td>73a</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Rules1</td>
<td>61a</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Respon1</td>
<td>45a</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Manipu1</td>
<td>50a</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Date1</td>
<td>10</td>
<td>104&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Oblaws1</td>
<td>61a</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sports1</td>
<td>12</td>
<td>54&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>The values highlighted in bold show greater contribution to the indicated factor.  
<sup>b</sup>CPF = Contribution per Factor.

According to the greater factorial contributions (Table 1), the social skills developed by the people with ID are related to naïve behavior (naive1), relationship with peers (peers1), following rules (rules1), assuming responsibilities (respon1), manipulation or deception (manipu1), and obedience to laws (oblaws1). According to people with ID, the social skills developed are dating (date1) and playing sports with friends (sports1).

Table 2 – Factorial contributions for the “developed conceptual skills” stimulus – Campina Grande, PB, Brazil, 2017.

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>Word</th>
<th>CPF&lt;sup&gt;a&lt;/sup&gt; – Factor 1</th>
<th>CPF&lt;sup&gt;b&lt;/sup&gt; – Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed conceptual skills</td>
<td>Alone2</td>
<td>9</td>
<td>96&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Read2</td>
<td>0</td>
<td>79&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Fluent2</td>
<td>45a</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Books2</td>
<td>8</td>
<td>44&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>The values highlighted in bold show a greater contribution to the indicated factor.  
<sup>b</sup>CPF = Contribution per Factor.
Based on the conceptual skills developed, it can be seen (Table 2) that the ability with the greatest factorial load revealed by teachers is fluent language (fluent2). On the other hand, people with IDs stand out in studying alone (alone2), reading (read2) and researching in books (books2).

| Table 3 – Factorial contributions for the “undeveloped social skills” stimulus – Campina Grande, PB, Brazil, 2017. |
|-----------------|-----------------|-----------------|-----------------|
| **Stimulus**    | **Word**        | **CPF* – Factor 1** | **CPF* – Factor 2** |
| Undeveloped social skills | Victim3 | 56* | 0 |
|                  | Sports3        | 10  | 40* |
|                  | Date3          | 12  | 51* |

*The values highlighted in bold show a greater contribution to the indicated factor.

CPF = Contribution per Factor.

With regard to undeveloped social skills, it can be seen (Table 3) that teachers revealed that their students with ID are seen as victims (victim3). Regarding the caregivers, they pointed out that people with ID do not play sports with friends (sports3), nor do they date (date3).

| Table 4 – Factorial contributions for the “undeveloped conceptual skills” stimulus – Campina Grande, PB, Brazil, 2017. |
|-----------------|-----------------|-----------------|-----------------|
| **Stimulus**    | **Word**        | **CPF* – Factor 1** | **CPF* – Factor 2** |
| Undeveloped conceptual skills | Money4 | 58* | 1 |
|                  | Help4           | 4   | 40* |
|                  | Alone4          | 13  | 53* |
|                  | Nda4            | 0   | 68* |
|                  | Books4          | 14  | 42* |

*The values highlighted in bold show a greater contribution to the indicated factor.

CPF = Contribution per Factor.

Table 4 shows that the expression with the greatest factorial contribution to the undeveloped conceptual abilities according to the teachers was the difficulty with the concept of money (money4). Caregivers emphasized that people with ID do not know how to study alone (alone4), nor research in books (books4). On the other hand, students with ID revealed that they do not study with help (help4) because they study alone, presenting all the developed conceptual skills, i.e. they can read, write, research in books and study alone (nda4).

The discussions about the dependent variables mentioned in this study according to the conceptions of the caregivers, teachers and students with ID are presented in Figure 1, which represents the set of analysis and comments on the factorial plan established from reading the modalities, the selected words or semantic fields, distributed over the axes or factors (Factor 1 and Factor 2).

Figure 1 shows the first axis (F1), which represents 89.4% of the total diversity of responses. The associations of the participants with ages from 41 to over 50 years are observed on the horizontal line to the left, with a higher level of education and teachers. For this group, the (1) related social skills included assuming responsibility (respons1), obedience to laws (oblaws1) and rules (rules1), relationship with peers (peers1), and not demonstrating weaknesses to deception or to manipulation (manipu1), lack of naivety (naive1) and victimization (victim1). Regarding the (2) developed conceptual skills, although teachers emphasized fluency in language (fluent2), no other response was associated with this stimulus (nda2).

With regard to undeveloped social skills, teachers listed naive behavior (naive3). Due to this, the absence of responsibilities (respon3) was probably pointed out as one of the characteristics, as well as the perception of victim status (victim3) and vulnerability to manipulation (manipu3). As for the four undeveloped conceptual abilities, the teachers emphasized a lack of knowledge about the concept of money (money4) and a lack of language fluency (fluency4); an association which was incongruent when compared to the result of the developed conceptual abilities. In contrast, no semantic field associated with any of the variables was observed to the right of axis 1. This fact demonstrates that there was no significant association to the composition in the plan.

The second axis (F2) in blue on the vertical dashed line of the plane represents 5.4% of the total variance. At the top, the participants’ responses with ages above 50 years, levels of primary and secondary schooling, and the social role of...
caregivers is shown, while no response was associated with this group for the (1) developed social and (2) conceptual skills. On the other hand, when asked about (3) undeveloped social skills, the caregivers listed an absence of playing (they do not play sports with friends – sports3; or play educational games – playg3) or have relationships (not dating – date3). Regarding the (4) undeveloped conceptual skills, the participants cited a lack of writing (they cannot write – write4) or reading ability (they cannot read – read4), and consequently a lack of independence in their studies (they do not study alone – alone4, do not research in books – books4).

On the same axis, the responses from the group of students with ID between 21 and 40 years of age, male, YAE students (3rd year) were arranged in the lower part. For these participants, the (1) social skills they developed were playful and affective-relational. In this scenario, they referred to educational games (playg1) and sports with friends (sports1), in addition to dating (date1); a panorama that diverges from the caregivers’ perspective. In addition, (2) developed conceptual skills, students with ID responded that they study alone (alone2), can write (write2), read (read2) and research in books (books2). The only (3) undeveloped social ability was travel (travel3), and no other response related to this specific stimulus (nda3) is found in the plane. Likewise, regarding the (4) undeveloped conceptual abilities, no response was related to this stimulus (nda4), suggesting some autonomy in this group.

**DISCUSSION**

The objective of this study was to analyze the social and conceptual skills of people with ID. According to AAIDD, conceptual skills are related to academic area, language (receptive and expressive), reading, writing, self-directed and mathematical knowledge. Social skills are social competence, independence, responsibility, self-esteem, credibility, obedience to rules and laws, and feeling victimized. The results presented point out considerable differences between the words highlighted by the research participants in relation to adaptive social and conceptual skills, although it is not possible to generalize the data.

Teachers realize that the social skills developed by their students are related to issues of responsibility, obedience to laws and rules, and relationship with peers. In addition, students do not allow themselves to be cheated or manipulated, nor are they usually naive and do not see themselves as victims. On the other hand, teachers emphasize that some students with undeveloped social skills do not assume responsibility, attitudes and commitments, are vulnerable to manipulation and see themselves as victims. Given this, there are singular issues in these two groups which involve recognizing different levels of difficulties in relation to the development of social skills.

Social skills are learned, and their performance is related to the individual’s development and to environmental factors. Research demonstrates that the social skills set can be associated with several psychosocial problems such as “depression, anxiety, stress, social isolation, aggression, oppositional and antisocial behavior, hyperactivity and low self-esteem.” In the early years, school is an important environment for developing social skills, since childhood corresponds to a period when children need to acquire skills related to emotion and interaction with peers. Children with ID usually have difficulty acquiring these skills because their cognitive ability is associated with competence to interpret social situations and develop strategies to respond to such situations.

While the group of teachers perceived that a certain group of people with ID have developed social skills, caregivers observed negative issues regarding these skills, since they did not present considerable information for composing the plan, which can mean a lack of resourcefulness of people with ID in relation to these abilities, from their perception. However, in social skills that are not developed, caregivers point out that people with ID do not usually play sports with friends and do not play educational games, nor do they have romantic relationships, meaning they do not date.

Caregivers seem to consider people with ID as eternal children who do not have sexual desire, for example, an acceptable but inefficient overprotection. Therefore, it is fundamental to inform the caregivers that, in accepting the sexuality of the child, they need to understand the implications of sexuality, among them the issue discussed in this study, which are dating relationships.

Regarding difficulties related to social skills, little is known about how children with ID respond in situations of conflict which need social problem solving and how the family can contribute to develop such skills. However, parents of children with ID can collaborate to develop these skills, either by providing support and assistance to learning in pursuit of goals, or by discussing emotional experiences with their children.

As opposed to caregivers, the group of students with ID report that they like to play sports with friends and educational games, just as they say they like to date. The only social undeveloped skill is related to travel.

Social interaction raises the contributions of this dynamic beyond cognitive development or social skills. The human being depends on this relation with the other to constitute themselves as a subject. Thus, the importance of believing, interacting and investing in the development of people with ID is evident, either through daily care, at home, with the family, or in institutions that provide care for people with ID.

Regarding conceptual skills, teachers also present different opinions between two groups of people with ID, revealing that one has fluent language and the other does not have, neither know how to use money. This fact demonstrates the importance of stimulating social relations and having positive attitudes in the face of presented difficulties. Caregivers reported that people with ID do not know how to read or write, cannot study alone, or research in books. On the other hand, students with ID reveal that they study alone, research in books and can read and write. This group of participants has the highest level of education, which suggests some autonomy.

Studies on the process of people with ID learning to read and write are rare and do not seek to clarify how these...
people produce writing. People with ID have metacognitive fragility, which impairs their ability to control knowledge, compromising ways to monitor and plan actions. These limitations seem to affect the quality of textual production of these individuals(16). People with ID with different levels of difficulty are able to learn more under conditions which provide experience and appropriate educational support than in isolated interaction situations(17).

One study conducted through participant observation presents a case of a person with ID. In the beginning, the individual showed difficulties in organizing thought and in developing language. With interventions performed through mediated activities, the changes with respect to these issues were perceptible, since it enabled the development of higher psychological functions. The teacher needs to be aware of these singularities in order to wisely lead the way necessary for learning(18).

Although the results point to limitations in the social and conceptual skills of people with ID, they also reveal limitations in relation to the stimuli and care given to these people. For this, it is necessary to rethink the kind of care that is being provided to these people in order to promote social and conceptual skills. These skills should be taught and encouraged, regardless of whether the school or residential environment provides interaction(19).

**CONCLUSION**

The results point out divergent opinions among caregivers and teachers about the conceptual and social skills of students with ID. In turn, the responses of people with ID are also different from those of their teachers and caregivers. It is known that many people with ID have several difficulties in social interaction, as well as cognitive. Although in the course of the study it was found that some classes of students with ID were more resourceful than others, it would be necessary to develop other studies which would deepen the investigation of these differences to know the historical context of each of these students and the influence of this context in the learning of social and conceptual skills.

It is important to emphasize that society, education and health professionals and caregivers can collaborate in various ways to develop people with ID by supporting the learning process, helping them achieve goals and discussing key emotional issues to strengthen interpersonal relationships. In order for this to occur effectively, it is necessary to believe in people with this condition and to repudiate discrimination, disrespect and prejudice.

With regard to sexuality development, in the data analysis it was also noticed that some caregivers show fear and insecurity and reveal that they do not accept social interactions related to dating. This attitude interferes and often leads to conflicts which may negatively influence people with ID to develop adaptive skills. The findings of the present study may contribute to forming a new way of thinking about the limitations imposed on people with ID and to stimulate developing studies which explore the adaptive abilities and the singular competences in this group of individuals.
REFERENCES


Financial support