Trans-disciplinary Cooperation in Children with Autism Spectrum Disorder Intervention with Emphasis on the Speech and Language Therapist’s Important Role

Kateřina Vitásková*, Alena Říhová

*Palacký University in Olomouc, Faculty of Education, Institute of Special Education Studies, Žižkovo nám. 5, 77140 Olomouc, Czech Republic

Abstract

The contribution analyses the knowledge of aberrations affecting non-verbal communication in children with Autistic Spectrum Disorder (ASD) from the perspective of speech and language therapists (SLTs) working in schools as well as in medical settings in the Czech Republic via a questionnaire (n= 69 responding SLTs of 369 originally addressed). 50.72% of SLTs perceive the specifics regarding disruption of nonverbal communication. The most frequent deficits detected are those relating to pragmatics (44.93%), the lexical-semantic linguistic level (21.74%) and the morphological-syntactic linguistic level (20.29%). The research highlighted visible deficits associated mainly with the knowledge domain of SLTs within ASD.

Keywords: autism spectrum disorders; speech and language therapy; speech and language therapist; language impairment; non-verbal communication; pragmatics

1. Introduction

Autism spectrum disorders constitute a broad group of disorders characterized, among other things, by disordered communication at individual language levels with significant predominance of communication pragmatics disorders. Individual symptoms strongly affect the non-verbal component of communication, in some
cases even much more strongly than verbal abilities (oral or graphical) (Chiang, Soong, Li, & Rogers, 2008). Since they concern specific characteristic manifestations of communication activity, they are included, according to Lechta’s classification (see for e.g. Lechta, 2002), in the so-called symptomatic speech disorders. Since communication is the basis of social interaction and its evaluation is, in many respects, the basis for evaluating an individual’s development level, the possible diagnosis or intervention in the impairment is the center of interest and the main subject of many professions relating to education and development consultancy.

Autism spectrum disorders, being forms of impaired communication, are dealt with by professional workers specializing in impaired communication ability – speech and language therapists. In the Czech Republic, as well as in many other countries (see for e.g. CPLOL/NetQues, 2013), speech and language therapy intervention is implemented, in particular, in the departments of education and health; speech and language therapists work in schools or school consulting facilities or in private or public healthcare facilities or speech and language therapy outpatient’s departments (consulting rooms). The speech and language therapists’ preparatory professional study takes place at pedagogical colleges within the study programme ‘Special Education’. Subsequently, speech and language therapists working independently in a clinical/medical environment must fulfill the specialization study requirements imposed by the field of clinical speech and language therapy.

In our opinion, in speech and language therapy intervention, it is necessary to respect the principle of transdisciplinarity represented by the equal standing of, and the respect for, individual professions of the experts involved in impaired communication ability diagnosis or intervention. In particular, in the sphere of education of individuals with impaired communication ability, it is necessary to involve all members of a complex team (a speech and language therapist, a consultant, a pre-school or school educator, parents, and others) so that their activities and the information provided by them can lead to efficient diagnosis or intervention and, therefore, to eliminating impaired communication ability or inhibiting its impact.

1.1. Specifics of Individuals with Autism Spectrum Disorder in the Context of Complex Intervention

Education of individuals with autism spectrum disorders (ASD), which is currently trying to reflect preference for the inclusive trend in the Czech Republic, constitutes increased requirements on the educators or, possibly, the assistants of educators, working in the so-called education mainstream. These requirements accentuate both the sphere of knowledge and interdisciplinary cooperation. Certain requirements are also oriented on the personality prerequisites of the professional educating a child with ASD, and, of course, the classmates who considerably predict the school atmosphere must not be forgotten either. Koegel & Koegel (2001) point out that social deficits and problems associated with communication in individuals with ASD are such striking symptoms of the clinical picture of this disorder that according to the stated author, trouble-free social interaction with these individuals’ peers is practically impossible. This statement is supported by Harrower & Dunlap (2001) who accentuate that a student with ASD needs several facilitation means and intervention focused on the practicing of social situations in order to interact with other people functionally. However, in this respect, we consider as important to state the research study implemented by Boutot & Bryant (2005) and focused on the analysis of social integration of ten students with ASD at a common-type school providing elementary education. The research group was composed of 177 students, of whom 26 were diagnosed with ASD (Asperger syndrome). The primary goal of the given examination was to detect the social preferences within the selected research group through a sociometric scale consisting of 6 questions. The result was that upon comparing intact classmates and classmates with ASD, the results were statistically indifferent and were not subject to the projection of symptoms associated with this impairment. Thus, according to Boutot & Bryant (2005), ASD diagnosis is not interferential when it comes to making contact with peers. However, it is important to add in relation to the given research that the students attended intensive training on the issue of ASD within the given school, which can be considered as a factor by which the presented results were significantly influenced. Hence, it is obvious that despite the strenuousness associated with social inclusion of an individual with ASD, systematic education and awareness may result in positive integration into the school environment.
1.2. Autism Spectrum Disorders and Individual Consideration of the Communication Level

Another prerequisite of quality education of a disabled individual is the structure of the individual education plan respecting his/her personality specifics, interests and abilities. Šedibová & Vladová (2010) state the deficits typical of students with ASD, which, at the same time, become the main starting points for creating an individualized form of education. In the given spheres, the stated authors include, in particular, problems in verbal communication comprising both the sphere of reception and expression and inadequate reactions (primarily within the sense of hypersensitivity) to auditory, visual and tactile stimuli. Problems in non-verbal communication are also described both in the sphere of understanding and in the sphere of the production and presence of unusual interest activities and interferential behavioral exhibitions. Owen-DeSchryver & Carr (2008) along with Šedibová & Vladová (2010) also point out that the practicing of communication and social skills should be an integral part of the education, even in case of education in a common-type school. We perceive as essential the cooperation with a speech and language therapist who should propose, upon thoroughly diagnosing the communication ability of an individual with ASD, strategies, procedures and recommendations relating not only to teaching but also to communication with his/her peers. According to the results of our previous research (Speech and Language Therapy Intervention with respect to Individuals with an Autism Spectrum Disorder; student grant competition of Palacký University in Olomouc; PdF_2011_010 March 2011 – February 2012; solvers: Říhová, Vitásková), a speech and language therapist cooperates, within the intervention with respect to individuals with ASD, primarily with a psychologist (39.58 %) and, subsequently, in an insignificantly different percentage frequency, with a special educator (34.72 %). A considerably lower representation is attributed to the cooperation with a psychiatrist (20.14 %) and a neurologist (18.06 %). Sixteen respondents (11.11 %) cooperate with a teacher, which we consider as low saturation when it comes to the frequency, and the lowest frequency (3.47 %) is ascribed to the cooperation with a paediatrician.

The foregoing clearly shows that impaired communication ability is a strongly deficient sphere determining the quality of an education process in individuals with ASD. Since professionals’ and parents’ interest is primarily aimed at developing speech within the sense of verbal communication and, subsequently, at the deficits affecting, in particular, this form of communication, we consider as important to draw attention to non-verbal communication. Non-verbal communication constitutes a significant predictor of efficient transmission of information within interpersonal interaction and incorporates a variable range of manifestations (for example, the visual contact, mimics, gesticulation, posture, etc.) (see for e.g. Doherty-Sneddon, 2003; DeVito, 2008; Paparella, 2011; Říhová, & Vitásková, 2012). The main objective is to detect, analyze and compare non-verbal communication in individuals with ASD from the perspective of speech and language therapists working in schools and healthcare facilities in the Czech Republic. We are interested to know to what extent they perceive as significant the impaired non-verbal component of communication in terms of their intervention and what is the basic knowledge of their specifics in individuals with ASD.

2. Research Design and Methodology

2.1. Research Goals

Within the specific grant research [IGA] (Communication Deficits in Selected Forms of Communication Skills with Focus on the Assessment of Individual Determinants of Verbal and Non-verbal Communication Elements in Special Education Practice; student grant competition of Palacký University in Olomouc; 2012/2013. PdF_2012_012. Head investigator: Vitásková), a study focused on non-verbal communication in individuals with ASD was carried out at the Institute of Special Education Studies of the Faculty of Education University in Olomouc. The research was differentiated into two parts targeted at reflecting impaired non-verbal communication in individuals with ASD from the aspect of speech and language therapists working in the department of health and education, and at the analysis of impaired non-verbal communication in a selected group of pre-school children with ASD.
2.2. Questionnaire Methods and Distribution

The first research method was a questionnaire distributed to speech and language therapists working in the department of health and the department of education, youth and sports. While structuring it, a combination of structured (n=9) and unstructured (n=2) items was preferred, and a scale of the Likert type was applied to detect the intensity or express the degree of consent. The questionnaire was distributed in March 2013 in electronic form; individual respondents’ contact details were obtained through the information freely available on the website. The total number of distributed questionnaires was 390, of which 338 questionnaires were intended for clinical speech and language therapists and 52 for special education speech and language centres or schools focused on children with impaired communication ability. Sixty nine questionnaires, that is, 17.69 %, were returned.

The second research method was longitudinal monitoring, held between March 2013 and June 2013. The research group consisted of children with ASD, aged 3-6 (n=12.7 boys and 5 girls), attending a kindergarten for children with special education needs. For the purpose of evaluating non-verbal communication, the diagnosis of impaired communication ability – its part ‘Non-verbal Communication Diagnosis’ created by Říhová and Vitásková (2012) – was applied.

3. Research Results Analysis and Discussion

The first sphere to mention is the detection of the deficient language level of individuals with ASD by speech and language therapists. The reason for including this item is the presumption that enhanced motivation to implementing non-verbal communication within speech and language therapy intervention is recorded in case of sufficient knowledge of the specifics of impaired communication ability of individuals with ASD.

<table>
<thead>
<tr>
<th>Language Level</th>
<th>Frequency (n)</th>
<th>Percentage frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonetic-phonological</td>
<td>9</td>
<td>13.04</td>
</tr>
<tr>
<td>Morphological-syntactic</td>
<td>14</td>
<td>20.29</td>
</tr>
<tr>
<td>Lexical-semantic</td>
<td>15</td>
<td>21.74</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>31</td>
<td>44.93</td>
</tr>
<tr>
<td>Σ</td>
<td>69</td>
<td>100</td>
</tr>
</tbody>
</table>

As Table No. 1 shows, the most frequent problems (n=31; 44.93 %) perceived by the addressed respondents were those affecting the pragmatic language level. The next position is held by the lexical-semantic language level (n=15; 21.74 %) and the morphological-syntactic language level (n=14; 20.29 %). The phonetic-phonological language level is recorded by 9 speech and language therapists (13.04 %). We can say that the addressed professionals adequately marked the aberrant language level as dominant since individuals with ASD are characterized by impaired pragmatic component of communication. However, at the same time, we must accentuate that the presented frequency, being less than a half (44.93 %), is not sufficient. We perceive the given result as insufficient, even with regard to the data obtained in the previous research (see Říhová & Vitásková, 2012) a part of which was also to map the knowledge of impaired communication ability of individuals with ASD. Part of the stated research was a congruent questionnaire item, and the respondents (clinical speech and language therapists, n=126) recorded as deficient the pragmatic language level in 70.83 % of the answers. Since the pragmatic language level is in reciprocal relation to non-verbal communication, we perceive this correlation as important.

The reasons for justifying the focus on developing non-verbal communication of individuals with ASD are reflected by the analysis of communication of a monitored group of children (n=12) with this diagnosis. Below you
can see a table stemming from the diagnostic range of non-verbal communication (Řihová & Vitásková, 2012) focusing on visual contact, mimics, gesticulation, and pointing at, and asking for, things.

<table>
<thead>
<tr>
<th>Child with ASD</th>
<th>Visual Contact</th>
<th>Mimics Perception</th>
<th>Mimics Expression</th>
<th>Gesticulation Perception</th>
<th>Gesticulation Expression</th>
<th>Pointing at things</th>
<th>Asking for things</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>X</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>D2</td>
<td>1</td>
<td>X</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D3</td>
<td>0</td>
<td>X</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>D4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>D9</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>D10</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>D11</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>D12</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

D1-D12: respondent (child with ASD) No. 1 – respondent (child with ASD) No. 12
X: item cannot be evaluated
0: disability to receive or express the given communication
1: limited ability to receive or express the given communication
2: ability to receive or express the given communication

Looking at the representation rate of the ‘0’ value (see Table No. 2) implying, according to the evaluation scale determined by us, the absence of desirable spheres, that is, visual contact, mimics, gesticulation, and pointing at, and asking for, things, we record its frequency as n=38. It is an inclination by 45.24 % to the given value present in all monitored spheres of non-verbal communication and recorded with the highest intensity in case of the expression of gesticulation (n=7). Its average frequency is recorded five times in the individual forms of non-verbal communication. The following category – value 1 relating to the limited ability in non-verbal communication associated, for example, with insufficiently frequent visual contact, the assisted perception of the mimics or gesticulation, and the expression of the mimics or gesticulation only in case of transparent manifestations or the facilitation in pointing at, and asking for, things – is present in 32 evaluations (38.10 %). The given category is also recorded in all monitored forms of non-verbal communication with relatively even frequency-based distribution. The ‘1’ value is typical, to the largest extent, in the reception of gesticulation (n=6) and, to the least extent, in the ability to ask for things through non-verbal communication (n=3). The highest value of identifying intact ability in the monitored spheres of non-verbal communication was recorded eleven times (13.10 %) and was absent in case of the perception of gesticulation and the perception of mimics. This value was present most frequently in 3 records/items relating to the pointing at, and the asking for, things. During the observation, we also applied the ‘X’ value referring to an obstacle in the ability to evaluate the monitored sphere. This value was detected in two spheres of non-verbal communication – perception of the mimics and expression of the gesticulation (n=2).

The results presented above clearly indicate that the monitored spheres (visual contact, mimics, gesticulation, and pointing at, and asking for, things) showed, in relation to the selected group of respondents, significant, even though individually manifested, problems penetrating into non-verbal communication. For these reasons, it is indispensable for speech and language therapists and, subsequently, educators (supervised by speech and language therapists) to implement the targeted development of this form of communication.

The following part is devoted to the issue of whether respondents (clinical speech and language therapists and speech and language therapists working in the school industry) intentionally orientate on non-verbal communication within the implemented speech and language therapy intervention.
Table 3: Focus of Speech and Language Therapists in the Czech Republic on the Development of Non-verbal Communication in Individuals with ASD

<table>
<thead>
<tr>
<th>Focus on Non-verbal Communication</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>43.48</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
<td>56.52</td>
</tr>
<tr>
<td>Σ</td>
<td>69</td>
<td>100</td>
</tr>
</tbody>
</table>

Analyzing the acquired data, we arrived at the conclusion that a slightly predominant section of the respondents (n=39; 56.52%) did not apply the development of non-verbal communication within speech and language therapy intervention. The positive reference was reflected by 43.48% (see Table No. 3). Hence, we can say that 39 speech and language therapists do not perceive the development of non-verbal communication within the implemented speech and language therapy intervention as primary and do not systematically focus on it. We must perceive the given circumstance as a negative predictive value and consider the obtained results as highly unfavorable with regard to the dominance of impaired non-verbal communication in individuals with ASD.

The given circumstance reflects the persistence of the so-called “practical” speech and language therapy concept (see more Lechta, 2011), which is focused on the preference of pronunciation (phonetic-phonological level of communication), as well as generally verbal, especially oral, communication and vice versa marginalizes, or even neglects, holistically more complex social communication skills represented by non-verbal components of speech and language. The application of this verbal approach ignores the problems based on the PAS diagnose (primary deficit in pragmatic language level) and thus the results of such oriented intervention cannot be positive. This assumption corresponds also with our previous research findings related to parents’ experiences and expectations of speech and language therapy in their ASD children (Říhová & Vitásková, 2012). Despite the fact that 89.5% of the parents had registered some of the significant symptoms of impaired communication ability during early childhood of their children, they did not a priori prefer contacting a speech and language therapist. In our opinion it may be partially the result of absent functional communication system in speech and language therapy approach to children with ASD even in their later age. Also it can be the consequence of persisting, incorrect primary orientation of speech and language therapists on assessing and intervening phonetic-phonological language level, as well as the assumption that the care of children with impaired communication ability should generally start in later age (for comparison see also Chawarska, Klin, & Volkmar, 2010; Lindsay, 2011; Prelock, Paul, & Allen, 2011).

Therefore we must repeatedly draw our attention to the fact that the content of speech intervention is not essentially equivalent to the principal problem of children with PAS, which is the aberration of pragmatic language level. We consider as important also the testimony of speech and language therapists, who emphasize the absence of relevant diagnostic material related to impaired communication abilities in people with ASD and also criticize the insufficient quantity of scientific literature dealing with specific approaches in the context of speech and language therapy intervention in ASD in our national context (Říhová & Vitásková, 2012).

4. Conclusion

ASD represent a group of individuals with heterogeneous symptomatic and individual education predispositions and needs. Despite the given fact, we can find a common and significantly deficient sphere detected in all individuals with the given diagnosis – a disorder affecting the communication ability, including the deficits reflected in its non-verbal component. With regard to the fact that at present, the education of individuals with ASD is supported in schools of the common type, communication competence is becoming the basic prerequisite of trouble-free integration/inclusion in the group of classmates and, at the same time, the determinant of a successful and trouble-free education process. On the other hand, the foregoing presumes that professionals involved in the care of an individual with ASD (in the given respect, primarily, speech and language therapists, educators, educators’ assistants, etc.) are actively engaged in developing the communication ability. Specifically, it concerns, in particular, the knowledge of the given disorder (impairment), speech and language therapy
intervention within which the relevantly deficient spheres (communication pragmatics) are stimulated, and the preference of interdisciplinary cooperation between a speech and language therapist and an educator. At the same time, we must not forget the peers and classmates of a child with ASD since they also considerably influence his/her acceptance and the school climate.

Unfortunately, the presented research results show that the quantitative indicator relating to the knowledge of the deficient language level is insufficiently saturated – only 44.93 % of the respondents (speech and language therapists in the Czech Republic) identify themselves with the primary deficit at the pragmatic language level. Moreover, it is necessary to refer to the fact that despite obvious problems associated with non-verbal communication in individuals with ASD (see the Table No. 2 presented above), only 43.48 % of the respondents (speech and language therapists in the Czech Republic) intentionally focus on the development, and cooperation with an educator is practically applied only by 11.11 % of speech and language therapists.

Finally, it can be said that the issue of impaired communication ability of individuals with ASD is a sphere showing visible insufficiencies and, at the same time, constituting a sphere that needs to be dealt with not only at the level of speech and language therapy as a scientific field, but also at the level of other, closely related disciplines.

Acknowledgements

We introduce the partial results of researches conducted at the Department of Communication and Sensory Disorders of the Institute of Education at Palacký University in Olomouc, Czech Republic in 2013-2014 (Communication deficits in selected forms of communication skills with focus on assessing the individual determinants of verbal and nonverbal communication elements in special education practice; IGA 2012/2013. PdF_2012_012. Main investigator: Vitásková).

References


Lindsay G. (2011). The collection and analysis of data on children with speech, language and communication needs: The challenge to education and health services. Child Language Teaching and Therapy, 27(2), 135-150.


