

The analysis of the speech and language therapy students' awareness to assessment and intervention of persons with symptomatic speech disorders – emphasis on autism spectrum disorders

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Abstract: *The article deals with an analysis focused on the expectations and attitudes to the diagnostics and intervention for people with symptomatic speech disorders, with an emphasis on the autism spectrum disorders, from the point of view of the education of students of speech and language therapy (logopaedics) as a part of the special education study programme. Special attention is paid to overlapping with the assessment of the pragmatic language level of communication and influencing it through speech and language therapy approaches. The connection with the modern concept of speech and language therapy in the pro-inclusive approach as well as in the context of preparation for collaborative transdisciplinary practice is discussed.*

Key words: *speech and language therapy, students, autism spectrum disorders, special needs education, undergraduate studies*

1 Introduction

Speech and language therapy (logopedics; SLT) represents a discipline focusing on human communication, its deficiencies, specifics, impairments or disorders. In contemporary comprehensive, global-holistic approach (viz např. Vitásková, 2013a) it should be considered as a profession dealing not only with people with impaired communication skills but with much more variable and diverse scope of practise, covering the issues of impaired communication skills in persons with disabilities as well people exceptionally gifted or talented, or their combinations. The main aim of SLT should be to develop, support and improve communication competence, which comprises conversational and interactive skills of the given individual, considered

part of the pragmatic level of communication skills (e.g. Lesenciuc, & Codreanu, 2012; Lieberman, & Gamst, 2015; Vitásková, & Říhová, 2014).

Children, adolescents and adults with symptomatic speech disorders often experience problems at various language levels even in the pragmatics, which concerns the implementation of the communication intention, the making of a contact, the keeping alive of a conversation with the communication partner, the understanding of the sense of changing the communication partners in the conversation (“turn-taking”), etc. In this sphere, a significant role is played by non-verbal communication that is more significant to many professionals than verbal communication. Moreover, non-verbal communication may accentuate, complete, deny, regulate, control, repeat and replace verbal communication from the function perspective (DeVito, 2012; Vitásková, & Lechta, 2013).

Modern logopaedics is gradually becoming more interested in the pragmatic aspects of communication. The reason is a growing pressure for social competences and conversation skills both in the educational and professional environment, but also the changing paradigm of logopaedics from a purely practical articulatory phonetic mechanical approach to a higher degree of responsibility for the actual impact of the effectiveness of logopaedics care on the everyday understandability of both oral communication and non-verbal and co-verbal gestures. The approach reflects both the holistic approach of the modern logopaedics and the “post-emancipative” stage in the development of logopaedics in which the Czech logopaedics finds itself at present (Vitásková, 2013b). Speech and language therapists (SLTs) should look for new possibilities of assessing the interference of individual language levels in the communication intention in logopaedics, also emphasizing the inclusive trends in education and clinical therapy and consultancy (compare e.g. Vitásková, 2013c).

Disruption at pragmatic language level is typical not only in persons with disabilities within the so-called autism spectrum disorders (ASD, including the Asperger syndrome or high-functioning autism) but also in people with attention and activity disorders (ADD, ADHD), right-hemisphere deficits, or in persons with impaired communication skills due to negative socio-pathological phenomena, neglect, abuse, mental or sensory deprivation, or as a manifestation of the so-called nonverbal learning disabilities, etc. (Stemmer, 2015). But in case of individuals with ASD the pragmatic language level often plays a key role not only in diagnostics, but in intervention as well, due to the fact that it significantly interfere in assessment of crucial diagnostic markers, including communication behaviour, what serve as a criterion for evaluation of the success of specific therapies (Davies, CAndrés-Roqueta, & Frazier Norbury, 2014; Cummings, 2014).

The need to confront the views of SLT students on the assessment of clients with autism spectrum disorders (ASD) arose from the discussions and consultations held with both domestic and foreign professionals from different fields and from our

recent research findings (Vitásková, & Říhová, 2014a; Vitásková, Říhová, & Šebková, 2015). Such discussions showed the differences between perceiving the terms pragmatics and pragmatic level of communication. Also, based on the results of the questionnaires realized in the first year of the GAČR project (see the acknowledgment) and their comparison with data obtained earlier from preliminary researches, we believe that one of the reasons of the fact that the assessment grade “insufficient” of communicative behaviour in clients with autism spectrum disorders is problematic is insufficiently realized practice of interdisciplinary cooperation. This cooperation might, in our opinion, severely endanger the efficiency and mainly the meaningfulness of assessing the pragmatics of communication especially in clients with such specific forms of symptomatic speech disorders that are part of the symptomatology picture of autism spectrum disorders. Based on the insight into the ideas, readiness and expectations of future speech and language therapists concerning their future role in ASD intervention, we have been trying to assess the suitability of diagnostic material being prepared and also to conceive the subsequent experimental verification in such a way that it would represent a material possible to seize specifically from the point of view of SLT, which would reflect the reality of SLT and special-needs-education practice. We were also interested in the areas of ASD intervention which the students consider to be saturated enough in their preparation and, on the contrary, in those which appear to be problematic from the point of view of diagnostics.

The aim of the paper is not to give a detailed description of the research, but rather to point out to the necessity of further, deeper research of the potential limits or risks in the education of speech therapists, preparing them for working with other than isolated types of communication abilities disorders so that their subsequent professional activities meet not only professional, but also ethical requirements. We would also like to point out to the necessity of creating such logopaedics diagnostic materials as will be able to capture certain insufficiently supported areas conditioning the external expressions of the pragmatic aspect of communication.

2 Speech and language therapy undergraduate studies in pro-inclusive approach

In the Czech Republic the **university study of speech and language therapy (logopaedy)** is implemented within the bachelor's and master's teaching and non-teaching special education study programmes at the faculties of education, mainly in fields preparing workers for the education sector (including counsellors). After passing the final speech and language therapy state examination (as for both, SLT special needs teachers and clinicians, the master degree is needed; see more Georgieva et al., 2014), the graduates of these programmes may work in the education sector (e.g.

logopaedic nursery and primary schools, special education centres, educational and psychological counselling facilities) and/or in the sector of social affairs (e.g. facilities providing social services, welfare institutions for children with disabilities, etc.).

A specific position belongs to the single-subject **non-structured non-teaching master's study of speech and language therapy** within the special education study programme at the Faculty of education, Palacky University in Olomouc, as it provides the best prerequisites for subsequent inclusion in the specialization training in the clinical sector. Graduates acquire professional qualification for special education work with persons with impaired communication skills of all age categories, including people with hearing impairment (emphasis on profiling graduates in the field of speech and language therapy and special needs education for people with hearing impairment, including sign language knowledge and communication skills).

2.2 Speech and language therapy in a pro-inclusive and collaborative approach

The prognosis for future development within the pro-inclusive approach to speech therapy intervention which, in our opinion, considerably depends on the attitudes and notions of speech therapy students about their future contribution to working with people with special needs and diverse settings. With this respect, we are mainly interested in the attitudes of students being primarily prepared in fields relating to the so-called clinical environment, which in some cases try to distance themselves from the issue of inclusion whereas their clientele may include individuals diagnosed with symptomatic speech disorders, i.e. with various forms of special needs. At the same time, their approach should be generally pro-inclusive. We agree with Hartman et al. (2012) that it is needed to form graduates who are able to engage reflexively and critically as socially responsive and who are competent to practise in diverse settings.

When dealing more closely with the situation at schools regarding the potential provision of SLT intervention, speech and language therapist is the most frequently collaborating professional in the education process of children with special educational needs (SEN) compared to the number of all other pedagogical workers (16.4% at schools, 13.1% in nurseries) (Česká školní inspekce, 2014). When we move to the primary level of education, most of the schools ensure „screening“ (93.5%) of children with CD and recommend them professional diagnostics and professional treatment, what is a very promising strategy due to the pro-interdisciplinary approach. Nevertheless, SLT intervention by own employees is provided by 32.3% schools, externally by 14.2%, together with pedagogical-psychological counselling, especially by external psychologist (20.3% schools) (Česká školní inspekce, 2013). Schools actively recommend parents to visit an education counselling institution

and it seems that the recommendations of those centres were consequently respected and followed. In the Czech Republic children with SEN represent 8.9% of all school children. A great number of these children are pupils with communication disorders, or specific speech, language and communication needs (Crichton, 2013) (approximately 0.40% pupils, not including specific learning disorders). At least 1.6 % of all of the rest applicants have possible symptomatic speech disorders based on Autism Spectrum Disorders (ASD) (0.41%). Further comparison of clinical SLT provided in the Czech Republic in recent years (summary of the data from 2012 and 2013, comparing them to 2002; ÚZIS ČR 2012; ÚZIS ČR 2013; 2014) shows that in 2012 and 2013 about 90 % clients registered in SLT facilities within the health-care resort were up to 18 years of age (94 % in 2002). Other diagnoses that could be considered are summarised in a single 8.2% category, including autism (on a slight increase) which could not be clearly identified (such as dysphagia, speech disorders associated with neurological disorders, CDs associated with intellectual disorders, voice disorders, dysarthria, aphasia, autism, cleft palate speech).

2.3 Speech and language therapists and autism spectrum disorders

Within the intervention of autism spectrum disorder, the role of speech and language therapist is defined at multiple level, mostly by various extent of participation and competences within screening, assessment, intervention, working with family, and counselling or consulting activities. Alongside, a comprehensive conception focusing not only the assessment of speech and language components, but also pragmatics in context of social skills and pragmatic language level is unavoidable (The Speech Pathology Australia, 2008). In recent years, this has been supported by a gradual implementation of the principles of new diagnostic criteria as a part of DSM V. and by the discussion about the diagnostics of social (pragmatic) communication disorders (see more e.g. Vitásková, & Říhová, 2014b).

Regarding the results of our research from 2014 a great majority of SLTs (N = 118; 67% of n = 177) in the Czech Republic (from educational, social, but mainly clinical institutions and practices) treat clients with ASD. Nevertheless, given the generally increasing prevalence of people with ASD (compare e.g. Buka, Viscidi, & Susser, 2014; Kim et al., 2014) and due to the importance of SLT for clients in all categories, and the overall communication deficits in ASD clients, we would expect even higher treatment ratio. The main age category of treatment is represented children between the ages 0–5 or children from 6 to 10 years-old. The majority of the SLTs reported the average number of their clients with ASD about 0 to 10 (83.05%), mostly up to 5 (52.54 %) (see more Vitásková, & Říhová, 2015).

3 The methodology of the survey analysis

For the comparison of the partial results with the university students of undergraduate speech of the language therapy (SLT) programme awareness and approach to the ASD assessment and intervention we made the analysis based on the questionnaire survey. We present and discuss a brief summary of the partial outcomes of the survey, analysing the attitudes and notions of 38 students of the second to final (fifth) year of their SLT undergraduate studies based on the study programme Special education, but preparing mostly for future work in clinical (health) environment. We chose this group of students as the study program is nationally unique, comprehensive, with transdisciplinary cohesion with other study fields. Therefore, the students should respond to a questionnaire focused on ASD in relation to SLT and symptomatic speech disorders without any serious obstacles and with a basic knowledge and skills competence and relevant experience. The problematics of symptomatic speech disorders, including is one of the great part of their curriculum, as well the complex view of all language levels physiology and pathology issues.

For the purpose of analysis, we formulated the following research questions:

1. Is there a preference for working in the future with people with symptomatic speech disorders in the students of logopaedics studying in non-teacher study programmes?
2. On what language level would the students focus in people with autism spectrum disorders?
3. Do the student incline to future providing of their SLT intervention in the group of clients with ASD regarding their special needs basis?
4. For which segment of the diagnostics do the students feel to be prepared best?
5. What is the previous knowledge and awareness related to autism spectrum disorders of the students?
6. How the students perceive the importance and consequences of SLT intervention in ASD clients?
7. What are the students' expectations and subjective readiness for collaborative professional work with clients with ASD.

The questionnaire was designed as a set of 34 items type of structured, semi-structured and open that have been chosen for further additional qualitative analysis of selected partial response or for the possibility to express specific, individual attitudes and opinions of the students. We used Likert-scales (the response options were ordered in ascendant negative value) and semantic differential statements type of evaluations. The questionnaire was distributed online via group e-mail of the students, regarding the security and anonymity of the students. The estimated number

of the students receiving the invitation to the research was 80. The return ratio was approximately 48% of addressed students; we emphasized the voluntary participation to receive only sincere and valuable responses. Then majority of respondents were from the final grade (fifth grade; 55.3%) and of second grade (18.4%). Exactly the same number of the students (13.2%) were students from the third and fourth grade. Therefore we may state, that the responses of the students reflected relatively more experienced views, with prospectively more knowledge and practical skills in special needs education and speech and language therapy area. Before entering the university and starting with their SLT undergraduate programme, 73.7 % of the students graduated at comprehensive schools, 13.2% on health services professional high schools, 10.5% Pedagogical lyceum, and one student is a graduate of a business school (2.6%). In other words, the majority of the students received rather general education focused on humanities, and mostly theoretically than practically oriented.

4 The partial results of the analysis and their discussion

The analysis of the confrontation of the SLT students with the problematics of ASD implies that they discussed the issue already during their high school studies and meet them even today relatively intensively, as nearly all students felt that the university courses introduce the issue “very often” or “often”. Mostly positively can be perceived their great satisfaction with the fact that the problematics of ASD creates such a place in their study programme (94.7% together from all positive-like responses). Nevertheless, “very satisfied” with the fact were only 36.8 % of all these students. Two students were “definitely not satisfied” with so frequent ASD related issues emerging during their undergraduate studies.

The majority (81.6%) of students expressed a rather indifferent, neutral, mean level of their voluntary interest in working with ASD clients or a directly active participation in voluntary work (mean scale value 2.8 out of 4). However, after their graduation none of the students tend to be involved in the practise with clients with ASD “on a daily basis”, on the other hand, 73.7% of the students would rather not be involved and 15.8% of them “definitely not” (mean scale value was 3.1 of 4).

As to the preferred language ability levels in the process of the assessment in clients with ASD, the students would mostly concentrate on the assessment of pragmatic language level (the mean value 5.5 out of 6) and vocabulary (the mean value 4.7 out of 6). The pronunciation (articulation) and the development of grammatical-syntactic level are perceived as being less important in diagnostics (the mean scale value 3.4 out of 6 optional in both). Only one student add particularly social skills development and family environment. The qualitative analysis of the responses shows a positive interest of the students in supplementing the responses with their comments

reflecting an adequate understanding of the significance of the pragmatic aspect of communication both from the point of view of social communication and the functionality of communication, emphasizing the possibility for the clients to express their needs through the pragmatic language level. On the other hand, we may notice that often the diagnostics is confused with intervention, however, that may be the result of stressing the principle of the diagnostic therapy in education, mainly in clients in whom a protracted diagnostic process lasting for several months, even years, may be anticipated. One student even speaks about inadequate focus on the articulation or the syntactic level being a „cosmetic problem“ in autism.

The order of the accentuated language levels the future SLT therapy preferences is similar; the students would mostly concentrate on pragmatic language level (the mean value is 4.8 out of 5), than to lexical-semantic (the mean value is 3.7 out of 5) and phonetic-phonological (pronunciation) (the mean value is 2.9 out of 5) and as the least important they elected morphological-syntactical level (the mean value is 2.7 out of 5 optional). Similar to diagnostics, the qualitative analysis shows an apparent emphasis on the positive impact of the intervention in the pragmatics on the area of socialisation, expressing one's emotions, needs, but at the same time it is interesting that there are references to the problematic side of the pragmatics of communication in ASD clients as a motif of the primary focus on that in the logopaedic intervention.

Specifying the particular therapy focus (Figure 1), the students would directly intervene the pragmatic communication (the mean value is 5.7 out of 7 optional) and would use alternative and augmentative communication as a communication tool and support (the mean value is 4.4 out of 7 optional).

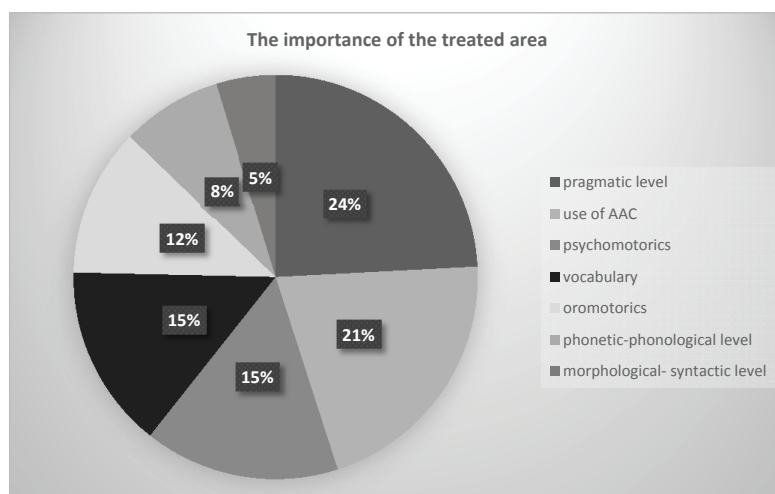


Figure 1: The importance of treated area from the perspective of SLT students

However, if we look more specifically on the particular parts of pragmatic language level assessment (see Table 1), the students tend to be more confident on their abilities to assess communication expressions related to verbal or vocal expressive language behaviour, phonation, acoustic gnosis and visual contact and, surprisingly, oromotorics (with the highest self-confidence), as the assessment of oromotorics in ASD is very complicated due to their impaired or inhibit ability to imitate (see e.g. Fabbri-Destro, Gizzonio, Avanzini, 2013). But the assessment of proxemics is the least to what students feel their confidence or expertize. We consider this finding to be very important for future adaptations or partial specification of assessment tools and process of individual diagnostics, but regarding the

Table 1: The preferences of assessment areas from the perspective of SLT students

ASSESSMENT AREA	Without difficulties, I know exactly the how to assess and registrate	With slight difficulties, hesitation, but I know how to assess	With difficulty, I am not familiar with the assess method much	Not at all
visual (eye) contact	10	14	10	4
proxemics	2	7	23	6
facial expression in emotional way	5	14	15	4
gesticulation and its conversational meaning (the expression of agreement, disagreement, request)	9	12	16	1
voice prosody and its conversational meaning (the expression of agreement, disagreement, request)	9	9	18	2
vocalization	5	11	16	6
changes of conversational roles	7	12	13	6
joint attention	5	10	15	8
oromotorics	15	15	6	2
acoustic gnosis	11	11	10	6

orofacial muscles activity	7	15	11	5
tactile perception (haptics) – its hyper- or hypo-sensitivity	2	13	17	6
oral gnosis/stereognosis	5	9	18	6
phonation	11	18	5	4

Regarding future tendencies on working with SEN clients, the students prefer work with isolated, monosymptomatic type of single form of impaired communication ability or working with clients with hearing impairment in their professional future. This tendency is understandable, because the student's second main specialization profiling is in hearing impairment and deaf studies. The preference of working mostly with clients with ASD was expressed at the very low level (the mean value only 1.9 out of 14 optional scale degrees). Even twice as much they tend to work with clients with Down Syndrome, and even 3 times more with clients with intellectual disabilities – this fact is at least surprising, needing further deeper, maybe more qualitatively oriented analysis and discussion. The explanation is maybe connected to the students' statements expressing their concern about the ASD clients' uneasily understandable behaviour, which is sometimes even connected to their inner "fear" and complicated for immediate comprehension communication expressions (15.2%), or the perspective of very demanding and difficult work and the image of not so "pleasant" or not so "exciting" work from their point of view. In their supplementary comments they also revealed that they are not sure in terms of their specific practical skills in ASD – they appreciate the level of their theoretical knowledge, but at the same time express the uncertainty in providing assessment and intervention by themselves, because of the limited opportunity to directly work with different clients with ASD. On the other hand, this fact support our positive estimation of students awareness to individual variability of ASD diagnose and its heterogeneous symptomatology.

Regarding their expectations on working with clients with ASD, the students expect that SLTs working in education settings mostly concerned intervention of ASD clients or social care institutions. Nevertheless, we found more clients with ASD in the practise of SLTs working in clinical settings (Vitásková, & Říhová, 2014). They assume that as SLTs they will mostly work with ASD clients with profound and moderate disability and communication difficulties in both, verbal and nonverbal communication, or with related intellectual disabilities, representing 48% of the students. Based on the current state of art and SLT practise in the Czech Republic situation they also consider ASD clients as those with "child autism" (6 out of 8 scale grades) and "autism with intellectual disability" (4.4 out of 8 scale grades) and "Asperger syndrome" (3.9

out of 6 scale grades) as the most frequent group of SLTs' clients with ASD. Their attitudes to future collaborative work revealed that the students would like mostly to cooperate with parents and families of clients with ASD (the importance has the value of 14.6 out of 18 optional – that means 82% of all students) and clinical psychologists, special needs educators and school psychologists (13.8. and 12.9, what represent 78% and 72 % of all students). As a very positive result we must perceive the highly preferred future cooperation with school speech and language therapists (11.1%). Surprising, but also in a positive way, is the higher inclination to possible professional collaboration with teachers (in nursery, primary and grammar schools) comparing the number with the cooperation preferences of graduated SLTs (only 3 out of 177 SLTs), which is really alarming and calling for maybe better and more intensive building of collaborative work of SLTs towards educational and teaching environment.

Regarding the question of readiness for working with SEN clients with other than CD very interesting and needed further analysis is the fact, that the students' self-estimation of their preparedness to the interdisciplinary work with other professionals is rather low (47.8%) and 13.2% of the students consider themselves totally unprepared for the interdisciplinary cooperation. A bit more positive, but still quite not satisfactory, is their evaluation of readiness for work with families and parents – 52.6% of the students feel as “ready” and 10.5% “completely ready”. On the other hand, 36.9% of the students feel as “unprepared” and 5.3% “completely unprepared”. For all of them is the cooperation with families in treating ASD clients “essential”, but rather “difficult” (52.6%) or even “very difficult” (13.2%).

5 Conclusion

Based on the partial results (more detailed partial results are being published continuously) we can state that, as far as the preferred language level is concerned, the students would rather focus on the assessment (diagnostics) of the pragmatic language level, the same as in the logopaedics intervention, namely, among others, by supporting alternative and augmentative communication, paradoxically focusing on one of the most complicated areas of logopaedics diagnostics and practice in ASD clients, which is orofacial praxia. In comparison to the results of research surveys already presented focusing on the professional preferences and approaches of speech therapists in practice, we find the same orientation, even though the students are much more inclined towards collaborative practice with the family and teachers rather than with other clinical speech therapists. We regard those findings as significant in view of the necessity of assessing the pragmatic language level also in the context of its quality of specific features, as the pragmatics are usually assessed e.g.

in children with ASD mainly based on the assessment of the parents or the teachers, and also for the, in our opinion, indispensable future interconnection of the diagnostics of the pragmatic level with its confrontation with the pragmatic production or parent perception.

Based on the insight into the ideas, preparedness and expectations concerning their future role in the intervention in ASD of the future speech therapists, we were trying, inter-alia, to assess the suitability of the diagnostic material being prepared for the area of the pragmatic level of communication, as well as to outline a subsequent experimental verification so that the material may be grasped from the specific point of view of logopaedics, reflecting the reality of the practice of logopaedics and special education. It is essential to utilise the higher confidence of the students in their own competences in evaluating the orofacial movements and auditory gnosis. On the contrary, in practical education more attention will have to be paid to the diagnostics of proxemics in the diagnostics of which the students of logopaedics perceive their greatest deficiencies. We have to view critically the qualitatively analysed additional comments of the students pointing to their insecurity in the specific interconnection of the theoretical knowledge with direct practical intervention, which is rather limited, namely in the clients with ASD, as the direct work is complicated by the inventory and intensity of symptoms in individual clients.

Future SLT graduates need to be informed about the new conditions stemming from the actual requirements of the day-to-day practice characterized by considerable heterogeneity and diversity (Lechta et al., 2011a). In this context, we consider as positive and beneficial that SLT has had a long-term tradition in the Czech Republic and the Slovak Republic, with strong relation to the propaedeutic subjects of the medical, healthcare, psychological, general education, sociological and linguistic spheres.

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