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Social-psychological aspects of the application of alternative and augmentative communication (AAC) in pupils with cerebral palsy

Introduction

Communication represents one of man's most important needs in life. It plays a significant role in the development of human personality and has its substance and simultaneously even integral place in man's socialization and education.

Many times we meet people whose verbal communication ability is significantly impaired as a consequence of a severe health disability. It is important to realize and keep in mind that it is necessary to make it possible even for these persons to become active participants in communication. Augmentative and alternative systems of communication serve this purpose. Their role is to minimize the communication deficit and compensate impaired communication ability; this means forming a new support or substitute communication canal, which enables these individuals to become equivalent communication partners (Šarounová, 2006).

Alternative and augmentative communication in the context of cerebral palsy

A characteristic group, in the sense that it should receive attention, is a group of children/pupils with a diagnosis of cerebral palsy. These are individuals who usually exhibit severe physical disabilities, impaired communication abilities and often damage of mental or sensory functions. The sort, type and level (degree) of the primary and even secondary deficit significantly influences the choice and possibility of using systems of augmentative and alternative communication in practice and including these individuals in society (Chomiak, 2005).

The author of this study has been interested in detail in the AAC problem since 2002. The presented information comes both from general conclusions from research (questionnaire) conducted in 2006 and further from the author's practical experiences which were obtained as a speech therapist working in school facilities meant for pupils with mental and combined disabilities.

It follows from the results of the conducted questionnaire survey that in the group of individuals with cerebral palsy (note that the sample was formed by 57 children/pupils with a polio diagnosis who simultaneously had severely damaged communication abilities), AAC is the measure that is maximally exploited, especially

in individuals with a quadriplegic spastic form of cerebral palsy and even further in individuals with a dyskinetic cerebral palsy form.

The initiation of AAC use in individual users has taken place in the space of 3–16 years, which is certainly very closely connected with the historical application framework of AAC use in the territory of the Czech Republic. (Note: AAC systems have been more intensively applied since the end of the 20th century).

Approximately in half of the AAC users we met, the system was replaced with a different one. From the dialogue with practicing professionals it appears that changes in the utilization of the AAC system are most often caused by:

- a) an unsuitable choice of the AAC system, caused by insufficient knowledge on the part of support staff, especially in the area of diagnosis, selection and practice in working with the AAC system;
- b) progressive, but also regressive changes in the development of a child with cerebral palsy, which influences his/her communication competences as well as the optimality with which he/she utilizes the selected AAC system;
- c) the negative attitude of the social environment of the AAC user for the selected communication system.

In the selection of a suitable AAC system for individuals with cerebral palsy, besides severe damage to the verbal aspect of speech, different degrees of damage to the coarse and fine motorics and mental disabilities often play a significant role. In another words, it can be said that the choice of an AAC system is considered to have communicative potential for an individual, to further his intellectual level and both motorics of the upper extremities and their coordination, and last but not least, to even the social competence of a potential AAC user with that of his environment (Laudová, 2003).

Concerning the representation of the exploitation of separate AAC systems in children/pupils with cerebral palsy, most often pictograms, then real objects, and finally their reduced-size pictures are used as compensation or support for communication. Letters and reading are used in methods of social reading, exchange communication systems, the communication system MAKATON, and finally the Bliss system and sign language (Kaul, 2003).

With regards to the consequences of severe health problems (i.e. motor and mental) in individuals with cerebral palsy, it often appears that they use more accessible communication means, respective AAC systems, for communication (i.e. approximately in 60% of the cases, although 36% use a framework of communication that combines the elements of two AAC systems, 13% use three AAC systems simultaneously, 7% have their commutative potential supported with four systems of AAC simultaneously, 2% have an active participation of five AAC systems, and 2% have even six AAC systems). (Note: We see a combination of two AAC systems especially in persons who use pictograms for communication. Their application into special pedagogical practice is successively connected with the application of the methods discussed next. These are the social reading method, and if need be, even the global reading method. With a lot of connections of AAC systems in the framework of communication with persons with a cerebral palsy diagnosis, we mostly meet individuals in whom it is possible, with regard to the quality of their motor functions, to have connected specificities of static and dynamic communication systems.

This is, however, also possible e.g. in individuals where it is necessary within the support framework of functional communication to apply a multisensory approach, which could be demonstrated as the connection between an object and symbol (e.g. snapshot, picture/relief of the picture or pictogram of given object), gestures (signs for given objects), and spoken word (Laudová, 2003)).

The choice of a certain type of system of alternative or augmentative communication in a given individual with cerebral palsy is also related to the ability of that individual to recognize and then identify objects and symbols (photos, pictures, pictograms, etc.), with the help of which he/she communicates. These especially include eye movements, facial mimics, gestures (also shown on symbols), words, as well as other means, e.g. showing the symbol, answering with the help of a communicator or in writing, usually with specially adopted computer hardware or software.

Concluding from the results of the research investigation, the identification of symbols in a given target group is most often done by eye movements, gestures, verbal notifications (in the sense of a confirmation of a yes / no choice), and in a limited measure, even by mimicking (a consequence of the elasticity of facial muscles).

Communication with persons with a cerebral palsy diagnosis (which is the basis of AAC), besides traditional nonverbal manifestations of the body of these individuals (e.g. mimicry, eye gaze and gestures), is often supported with further relief communication means of a technical and non-technical nature, such as communication tables, communicators and computers. Usually, these are commercially produced aids which are used in the framework of special pedagogical intervention for training communication and educational techniques that stem from the underlying ideas behind separate AAC systems. The aim of applying these aids in practice is to support and extend the communication potential of individuals with cerebral palsy, i.e. users of AAC, to ensure functionality of their communication with their surroundings, and to eliminate contingent origins of information and communication deficits in these persons (Alm, 1992).

Research has shown that most children/pupils with cerebral palsy use, as a means of support for communication on an AAC basis, commutative tables, next their own body (face-play, eye gaze, gestures), then computer technology, and finally communicators or other supporting communication means as e.g. a portfolio or set of photos (Šarounová, 2006).

AAC systems, without dispute, take part in developing the personalities of individuals with a cerebral palsy diagnosis, which can be demonstrated by a number of case studies. It is apparent that AAC systems work not only in a pure communication sphere, but also influence the mental condition and development of an individual with cerebral palsy (by decreasing frustration from unsatisfied communication needs, mental tension, anxiety, and by increasing self-esteem and self-confidence of the individuals) and obviously also take part in the upbringing and educational processes as well as integration into society of individuals with polio and with expressive speech impairment (Laudová, 2003).

Within this framework of research, it has been shown based on data collected from respondents (educational workers, speech therapists and workers of special

pedagogical centres) that the extent to which AAC takes part in the development of factors, is a real predictor of successful communication, education and integration of children/pupils with cerebral palsy. In this sense, attention has been devoted to the evaluation of the expressive speech development of individual users of AAC systems, their cognitive ability and their social competences. From the respondents' answers it appears that from the above introduced factors, they assign AAC the greatest role in the area of development, next in the area of emphasis on social competences of AAC users, and finally they see its least significance in the area of cognitive abilities (see Table 1)

AAC's role in %	social competences	cognitive ability	expressive speech
0	1 (1.8%)	3 (5.3%)	12 (21.1%)
25	17(29.8%)	22(38.6%)	29(21.1%)
50	21 (36.8%)	10(17.5%)	8(14%)
75	16(28.1%)	21(36.8%)	7(12.2%)
100	2(3.5%)	1(1.8%)	1(1.8%)

Tab. 1. AAC role's in the development of partial areas of personality of an individual with cerebral palsy

It is evident that the principal significance of the application of AAC systems in children/pupils with cerebral palsy consists primarily of fulfilling the communication needs of these individuals and contributing to the development of their communication potential. Communication systems that function on an AAC systems basis could be generally considered a means of support in the education of individuals with cerebral palsy who simultaneously have an expressive speech impairment (and as such are an unavailable means of integration for these persons into common life) (Šarounová, 2006).

Part of the application of AAC systems in communication, education and integration of individuals with cerebral palsy is also mapped onto the framework of a given research investigation. From the results, it globally holds that practicing professionals give AAC the highest importance in the area of communication, next in education, and finally even in integration (Bandžuchová, 2002).

Concerning the significance of applying AAC in the area of communication development and support, based on 11 persons (i.e. 19.3%) with cerebral palsy, AAC has, according to the professional estimates of respondents, a maximal influence on the development of communication competences and realization of communication acts, an extraordinary effect according to 22 (i.e. 38.6%) respondent, an average effect according to 12 (i.e. 21.1%), a substandard effect according to 8 (i.e. 14%), and finally according to 4 (i.e. 7%) respondents, a minimal effect.

In support of educational processes of individuals with cerebral palsy, according to data obtained from the answers given by respondents, utilization of AAC systems is maximally demonstrated in 4 (i.e. 7%) clients, extraordinarily in 19 (i.e. 33.4%), on average in 17 (i.e. 29.8%) users of AAC, on a substandard level in 10 (i.e. 17.5%) and minimally in 7 out of 57 individuals in the research sample (i.e. in 12.3%).

AAC's part in the integration of persons with cerebral palsy who simultaneously have an expressive speech impairment is possible (based on obtained data) at

a maximal level in 7 (i.e.14%) individuals with cerebral palsy in the research sample; in 11 (i.e.19.3%) the effect is extraordinary, in 20 (i.e. 31.1%) the effect is average, and in 10 (i.e. 17.5%) it's substandard. Finally, there were 12 respondents of the questionnaire (i.e. 21.1%) who leaned towards a minimal effect of AAC on the integration of these individuals.

Conclusion

It follows from the introduced information that AAC systems become an integral supportive part of the quality of life of individuals with cerebral palsy with a comorbid severe expressive speech impairment, provide support for the complete development of their personality, have an effect on their mental health, take part in the improvement of their education, and at the same time contribute to their integration into society. With regard to actual trends in the area of care for individuals with health problems and with regard to the effort of compensating opportunities in the area of education and minimalizing the consequences of health problems, further development in the future is expected with the support of the educational and social policy of the Czech Republic.

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Abstract

The text outlines partial aspects of the utilization of alternative and augmentative communication in children/pupils with a cerebral palsy diagnosis and acquaints with the author's practical experience as well as the outcomes of research investigations carried out in the given domain. It further defines the means that are used most often in ACC and specifies view points that lead to the choice of these systems. Also the effect of alternative and augmentative

communication systems is outlined in terms of the development of expressive speech, the cognitive abilities and social competences of its users, and the practical significance of the exploitation of alternative and augmentative communication from a psychological and socialization point of view (especially in reference to education and integration).

Spółeczno-psychologiczne aspekty zastosowania komunikacji alternatywnej i wspomagającej (AAC) u uczniów z porażeniem mózgowym

Streszczenie

Tekst ten nakreśla aspekty wykorzystania komunikacji alternatywnej i wspomagającej u dzieci/uczniów ze zdiagnozowanym porażeniem mózgowym, zaznajamia z praktycznym doświadczeniem jego autora, a także z wynikami badań uzyskanymi w tym zakresie. Omawia najczęściej stosowane środki, wyszczególnia punkty widzenia, które prowadzą do wyboru tych systemów komunikacji. Przedstawia również wpływ systemu komunikacji alternatywnej i wspomagającej na rozwój ekspresyjnej mowy u jego użytkowników, ich zdolności poznawczych oraz kompetencji społecznych, a następnie nakreśla praktyczne znaczenie wykorzystania komunikacji alternatywnej i wspomagającej z psychologicznego i socjalizacyjnego punktu widzenia (zwłaszcza edukacyjnego i integracyjnego).

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