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Speech Understanding by Children Diagnosed with Delayed Verbal Development in the Context of Family Functioning

Abstract

The assumptions of the research presented in the article refer to the socio-interactive approach, which assumes that a child's learning and proper language acquisition require cognitive activity, proper progress in cognitive development, and active—resulting from social relationships—observation of adult speech. The research assumptions also take into account the importance of the self-regulatory function of language and a systemic understanding of the concept of family.

The aim of the study was to verify the relationship between the speech understanding of children with delayed verbal development and the various dimensions of their family functioning and ego-resiliency of their parents. The study included a group of 72 cognitively well-functioning Polish children, aged 5–7 years with a diagnosis of delayed verbal development, and their families; the sample was selected using random and nonprobability

sampling. The children were examined using the Polish Picture Vocabulary Test for Comprehension, version A (PPVT-C). The functioning of the children's families was operationalized by the tool FACES IV by David H. Olson (the Polish version of the scale was used), while the Ego Resiliency Scale was used to study resilience.

The research indicates that families of children with lower scores on speech understanding present less favorable functioning profiles in selected dimensions of FACES IV: Family Communication, Cohesion, Disengaged, and Family Satisfaction. However, the relationship between the child's speech comprehension and other demographic variables, such as the parents' age, gender, education, and marital status, has not been confirmed.

It was recognized that the results of the research will lead to both the future optimization of the therapeutic services offered to children with verbal developmental disorders and their families in their natural environment and the future presentation of appropriate strategies to support speech development (especially speech understanding abilities) in children. The creation of a group representing a certain type of language disorder will result in a better adaptation of the training program to the specific difficulties experienced by a child and allow for more effective involvement of parents in preventative measures.

Keywords: verbal development, child's understanding of speech, family functioning, ego-resiliency

Introduction

The communicative aspect of child language in the literature on the subject is combined with the concept of theory of mind (Tomasello, 2003) and children's egocentrism in the cognitive sphere (Piaget, 2002). In the course of socialization, by functioning in a social environment—including the family system—a child learns the rules of language use in social interactions, flexible perception, and communication. Developing communication competence allows a child to use language which is suitably adapted to situations and the needs of their interlocutor (Kurcz, 2005).

This is developed in the self-regulatory function of language, described in the classic works by Vygotsky (1978, 1980) or Łuria (1979). For Vygotsky, language was a very important intermediary between learning and child development. According to him, social communication and the development of inner speech are possible thanks to verbal development. The author introduced the term “zone of proximal development” to psychology and described it as special areas for a joint meeting and functioning of a child and an adult.

The socio-interactive approach, which is the basis for the current article, assumes that for a child to learn and properly master a language, their own cognitive activity, proper progress in cognitive development, and passive observation of adult speech are insufficient (Gleason & Ratner, 2017). Biological factors are important in the process of language acquisition, but according to Bruner (2010), they are not the only condition. He emphasizes that language develops primarily in interactions with other people. As an alternative to the language acquisition device—a mechanism postulated by nativists (Chomsky, 2006)—Bruner (2010) proposed the language acquisition socialization system (LASS) model. He observed that children acquire language and learn to understand speech through active communication. In this approach, the correct grammar of one’s expression plays a secondary role (Gleason & Ratner, 2017). Speech allows a child to structure the surrounding reality and to symbolize. It is a “ticket” to subsequent developmental stages. A child learns a language through the development of concepts. However, this does not occur in a socio-cultural vacuum. Developmental psychology draws attention to the particular importance of terms to which a significant role is attributed to: sensory exploration, motor manipulation, a period of intense questioning, visual mass media, or reading to a child.

When adults speak to infants and young children, they adapt their speech to the recipient, using such techniques as slowing down the pace of speech, using clearer intonation, more attention-focused measures, more repetition, simpler, more specific vocabulary, and a higher tone of voice (Snow & Ferguson, 2013). This style is called “motherese,” child-directed speech, or baby talk. In the first few weeks of life, caretakers are

already able to communicate to a child their acceptance or rejection by means of intonation patterns (Fernald & Kuhl, 1987). According to Fernald and Kuhl (1987), children are more likely to respond to baby talk than to standard adult speech. This probably happens because of the properties of prosody and syntax (e.g., clearer accenting of word boundaries), which makes it easier for a child to bootstrap their own progress in language development.

In addition to maternal speech and the above-mentioned corrective strategies for language mistakes made by a child, there are other forms that can be included in LASS. They involve arranging situations in which the caretaker and the child build a common field of attention, openness to attempts at experimenting with the language, providing adequate, prompt answers, linking verbal messages with the current interest of the child, and embedding verbal messages in the context of action (Fernald, Perfors, & Marchman, 2006).

According to the theory of fuzzy logical model of perception by Massaro and Cohen (1993), language acquisition mechanisms are not reserved solely for speech acquisition processes. The researchers stated that the language perception process is analogous to the problem of pattern recognition in the sense of general regularity. Massaro and Cohen (1993) admit that some specialization in the language acquisition process is necessary—people use the principles of distinguishing elements specific to the language of a particular user. The researchers also see commonalities between language processing and emotion perception. This gains a special interpretative significance in the context of research on relationships within the family system (in accordance with Olson's concept of family functioning) and the child's understanding of speech.

The reference to family functioning, including communication in the child's family system, occurs in the six-stage model of speech development by Weitzman and Greenberg (2002). These stages are distinctive of typically developing children from birth to five years of age. This concept has numerous psychoeducational and therapeutic applications, as it defines the key cognitive and social skills which are required at specific stages of child speech development. It allows the focus to be on developing those

competences which are found to be insufficient. At the same time, Weitzman and Greenberg (2002) emphasized the importance of the child's correct cognitive development in acquiring language competences, including speech understanding.

The problem of delayed verbal development in children, despite it being observed more and more frequently, is currently at the center of a lot of diagnostic and terminological controversy in the literature. Speech delay is diagnosed in children up to 3 years old (in the next two years of development, verbal competence acquisition is slower than in peers), excluding other causes of language development inhibition—primarily neurodevelopmental, intellectual, and sensory ones (Jastrzębowska, 2005). Such children are usually characterized by later speech initiation, slower acquisition of new communication skills, and weakened speech in terms of quality. In children with delayed speech development, the following are also observed: inadequate development of active and passive vocabulary in relation to age, a lack of using some parts of speech, the use of specific children speech inadequate to age, and abnormal grammatical structures (Pilarska, 2014).

This article and the research reported in it also refer to the assumptions of the concept of a systemic understanding of family (Olson & Goral, 2003). According to the systems theory, the family is interpreted as a whole, and the changes in each of the elements in the system affect that system and depend on all other elements. When changes in the internal or external conditions of the family system occur in the family, all family members are forced to take adaptive action to enable them to function properly.

The concept of ego-resiliency, which is indirectly referred to in the article, is derived from the theory developed by Jeanne and Jack Block (1996). Being a permanent resource, it determines the individual's ability to adapt to difficult situations and traumatic events. Ego-resiliency includes the ability to positively re-evaluate reality in every aspect of time; the capacity for gratitude that is important in considering the past; the ability to enjoy life; the ability to be optimistic, even in terms of anticipating future difficulties. A resilient person is able to adapt to changing

living conditions, perceiving positive aspects in them, and is able to treat them as opportunities for development (Tugade & Fredrickson, 2004). It also involves the ability to create and maintain satisfying social bonds. In contrast to ego-resiliency are emotional instability, vulnerability, and stress sensitivity (Ostrowski, 2014).

Material and methods

The purpose of the research which the article is based on is to verify the existence of a relationship between children's understanding of speech—functioning in an intellectual norm, without symptoms of sensory disorder or neurological disease, and revealing delayed speech development—and the profile of the functioning of the families in which they are brought up. This relationship is considered in relation to the ego-resiliency of parents and the demographic and cultural conditions in which they live. Due to the existence of norms for the population of healthy people with whom the parents' tests results were compared, the control group was abandoned.

Tools used in the study

1. Polish Picture Vocabulary Test for Comprehension, version A (PPVT-C) (Haman, Fronczyk, & Łuniewska, 2012)

The PPVT-C is intended to be used in examining children from the age of two years to six years, eleven months. The task of the examined child is to choose the one picture out of four that best represents the concept given by the diagnostician. The test has two parallel versions: A and B. The tasks presented to the child are of different levels of difficulty, which is meant to ensure the adequacy of tasks for both younger and older children. The test material consists of basic parts of Polish-language speech, and a total of 88 items appear in both versions of the test, of which 51 are nouns, 25 are verbs and 12 are adjectives, corresponding

to their frequency in spoken Polish. Three distractors were selected for each word: phonetic, semantic, and thematic.

The tool is standardized and has very high reliability for the overall results. The advantage of the test is the short examination time and the usefulness in the diagnosing speech development delay and in detecting various disorders of verbal development, e.g., specific language impairment (SLI)

2. Olson's (2000) Flexibility and Cohesion Evaluation Scales-IV (FACES-IV)

FACES IV is based on the theoretical assumptions created by Olson (2000) and is presented as the Circumplex Model of Marriage and Family Systems. It includes three key concepts for understanding family functioning: cohesion, flexibility, and communication. The main assumption of the Circumplex Model indicates that balanced levels of cohesion and flexibility are conducive to the beneficial functioning of the family. Unbalanced levels of cohesion and flexibility (very low or very high) are associated with problematic family functioning. Olson's Circumplex Model is one of the few holistic theoretical concepts describing the family which offers tools for measuring the constructs. The main variables that make up the Circumplex Model are related to cohesion, flexibility, communication, and satisfaction in family life.

Olson (2000) also proposes in his model three levels of family cohesion: disengagement, balanced cohesion, and enmeshment. The indicators of cohesion include mutual emotional closeness, the quality of psychological boundaries between family members, the existence of coalitions, the amount of time spent together, common interests and forms of rest, the size of the circle of mutual friends, and the degree of consultation with other family members in decision-making. Cohesion was defined as the emotional bond between family members (Olson & Goral, 2003). Imbalance in family relationships can relate to an extremely high level of cohesion (enmeshment of relationships), or in its extremely low intensity (disengagement, non-commitment, relationships without bonds). Mem-

bers of enmeshed systems are very emotionally dependent on each other, and the affective states of the individual are often shared by the whole system; on the contrary, in disengaged families there is no bond. Enmeshed systems discourage children from spontaneous and autonomous learning about the world and dealing with the natural problems of life, which complicates children's development in all areas.

By analogy, and for consistency, Olson also provides three levels of family flexibility: Rigid, Balanced Flexibility, and Chaotic. Flexibility means the quality and degree of changes taking place in systems related to leadership, in the roles and principles of mutual relationships, and resulting from negotiation processes between family members. The imbalance of elasticity may be manifested in the form of extremely high elasticity (defined as chaotic family relationships) or extremely low elasticity (classified as rigid family relationships).

Olson and Goral (2003) define family communication as the ability of a given partner or family system to communicate positively. Communication in the family is related to the act of familiarizing family members with information, plans, thoughts, and feelings, i.e., a broad repertoire of phenomena represented by the functioning system. The ability to communicate positively provides a change in the coherence and flexibility of the family system. On the other hand, satisfaction with family life determines the extent to which family members feel happy and fulfilled.

The concepts and dimensions of coherence and flexibility were presented by Olson using the wheel model. However, communication and satisfaction with family life were not graphically reflected in this model.

FACES-IV is a questionnaire composed of 62 items comprising eight scales. Six of them are the main scales of the Circular Model: the Scales of Balance—Balanced Coherence and Balance of Flexibility—and the Scales of Unbalance—Disengaged, Enmeshed, Rigid, and Chaotic. In addition, there are also the scales of Family Communication and Satisfaction with Family Life, which are called the Scales of Evaluation.

3. The Ego-Resiliency Scale by Block and Kremen (1996)

According to this short, but aptly researched tool, people differ in the extent to which they consciously control their own emotional states and behavior. Block defines ego-resiliency as adaptive flexibility resulting from the ability to adjust the level of control to the situation (Letzring et al., 2005). The higher the level of ego-resiliency, the greater the ability to modulate the level of self-control depending on the possibilities and needs of a particular situation. This can improve emotional regulation processes, including the regulation of positive emotions.

Research question and hypotheses

After analyzing the literature on the subject and taking into account the theoretical assumptions presented in the introduction, the following research questions were formulated:

1. Is there a statistically significant relationship between the level of children's speech understanding and selected aspects of their families' functioning (Cohesion, Flexibility, Rigid, Disengaged, Chaotic, Family Communication, or Family Satisfaction)?
2. Is there a statistically significant relationship between the parent's ego-resiliency and the child's level of speech understanding?
3. Is there a statistically significant relationship between the demographic variables that determine the family situation (e.g., age, place of residence, or education) and the child's level of speech understanding?

Using the research questions based on theoretical assumptions, the following research hypotheses were formulated:

Hypothesis 1: The profile of family functioning in the study group of parents of children with delayed speech development is less

favorable than that of people from the general population, which are measured by scales of controlled variables and are available in standardization manuals of the applied research tools.

Hypothesis 2: Families of children with lower scores of speech understanding present less favorable functioning profiles in certain dimensions: Family Communication, Cohesion, and Flexibility.

Hypothesis 3: Children of parents with higher ego-resiliency obtain better results in speech understanding.

Hypothesis 4: There is a statistically significant relationship between the demographic variables of the study group and the profile of functioning of families of children with delayed speech development.

Hypothesis 4.1: A higher economic status of the family correlates with a higher level of language understanding by the child.

Hypothesis 4.2: Children from urban environments obtain better results of language comprehension than children from smaller towns.

Justification of the hypotheses

In ontogenesis, a child's body is affected by hereditary and environmental factors (Hernandez & Blazer, 2006; Newbury & Monaco, 2010). The current study focused on the latter of these contexts—the family environment. As indicated by numerous studies in the literature on the subject (Tallal, et al., 2001; Kurcz, 2005; Dyer, 2006), environmental neglect, conflicts in the family system, problems in adequate communication between parents and the child, a lack of proper communication patterns, and a lack of motivation to use speech—in addition to factors of biological importance—can imply a child's verbal developmental delay (Kochanska et al., 2010). Non-verbal behavior and communication with parents are used in a child's dialogue with its social environment. A deficit in this area may indicate emotional and cognitive developmental disorders in a child, including language. According to the assumptions of the socio-interactive concept, in addition to an appropriate level of cog-

nitive predisposition and adequate developmental resources related to biological functioning, children also need adequate social stimulation and proper social contact in order to learn to communicate effectively, enrich verbal competences, and gain new language experiences (Brzezińska, Matejczuk, & Nowotnik, 2012; Brzezińska & Rękosiewicz, 2015; Hornowska et al., 2014).

Many studies (Kielar-Turska & Lasota, 2010; Evans et al., 2013; Brzezińska, 2014) have shown that children living among adults who are aware of the child's needs and who support their development build longer and richer speech content than children spending time alone or almost exclusively among their peers. The family structure and living conditions were identified in these studies as predictors of a child's cognitive development, including verbal development and speech understanding. It was also pointed out that delays in a child's speech development are the consequence of low parental communication activity, avoiding or rejecting an educational attitude, or a lack of adequate emotional support for the child (Hornowska et al., 2014). The context of the family system is therefore important in the process of initiating, facilitating, and stimulating development, including a child's verbal development. In numerous studies, especially written from an ecological perspective, the functionality of the family system is treated as the basic context for stimulating child development, but also as the source of the most important threats to this development. Therefore, in this research, it was decided to check whether the family, its functioning profile, and the ego-resiliency of the parents of children with delayed verbal development is significant in the development of the child's ability to understand speech and, if so, to what extent.

Characteristics of the study group of respondents

In order to carry out the research presented in this article, random and nonprobability sampling was made of people for the study group. The study included a group of 72 Polish children (40 girls and 32 boys) with relatively good cognitive abilities who had been diagnosed with delayed speech development. During recruitment, children with other possible

sources of language difficulties were excluded (e.g., oligophasia associated with intellectual disability, neurodevelopmental disorders, sensory or motor disability, hearing loss, or selective mutism); they were not included in the final group of 72 children. At the beginning of the study, the children were between 5 years, 2 months and 6 years, 8 months old ($M = 5$ years, 8 months; $SD = 4.5$ months). The children were recruited to the study group from children living in Lesser Poland, using appropriate speech and psychological care due to their verbal developmental delay.

The sample of parents collected for the study consisted of 72 people in total (one parent for each of the children recruited for the study), including 53 women and 19 men. The average age of the surveyed parents was 34 years, 10 months ($SD = 5$ years, 4 months). The oldest parent was 46 years old and the youngest was 25 years old. It is worth noting the marital status of the sample of parents: 56 people were married, 11 were divorced, 4 people were unmarried, and 1 was widowed. Among the 72 surveyed parents, 36 had a higher education, 26 had secondary school or post-secondary school education, and 10 had vocational education. More than half (38) of the surveyed parents lived with their children in the countryside or in a small town (up to 5,000 inhabitants), while 18 respondents lived in a town of 5,000 to 50,000 inhabitants and 16 people lived in a city of at least 50,000 inhabitants.

Methods for statistical analysis

The data were subjected to statistical analysis using Statistica 13 software. The results from the children and parents were recalculated, comparing them with the norms for the population. The numbers of surveyed parents who represented particular levels of family functioning were calculated. A profile of the results calculated for the study group (percentiles and sten scores) was made; a statistical analysis of the results was then conducted. The Shapiro–Wilk test was used to check whether the distributions of data represented a normal distribution.

After determining that the dataset conformed to a normal distribution, Student's t-test was carried out on the average results in the family

functioning profile of the study group and the results of the standardization study for the Polish population, followed by calculation of Pearson's correlation coefficient for the PPVT results with other variables extracted in the study, operationalized by FACES-IV, ego-resiliency indicators, and demographic variables.

In the last part of the analysis, using the progressive step regression equations, an attempt was made to construct a model describing the most important relationships of speech understanding by a child with delayed verbal development. SPSS Amos software was also used, as it contains tools for graphic modeling of structural equations, i.e., path analysis. This method allows for causal inferences, despite the lack of an experimental model in the study.

Results

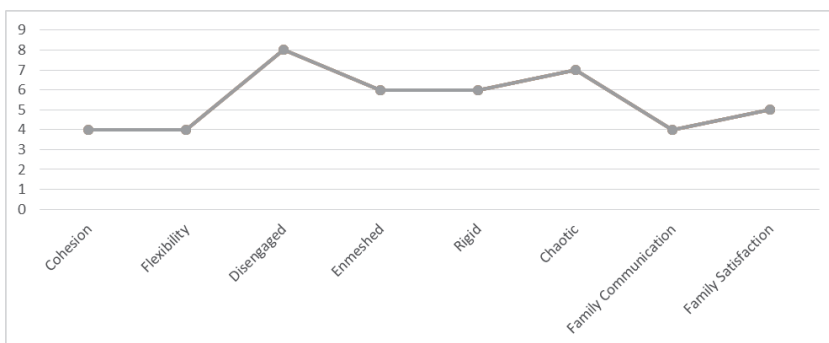
On the PPVT-C test, the study group of children diagnosed with delayed speech development achieved an overall average result of 59.79 (SD = 2.71; Min=55; Max=67), which in comparison with the available norms for children of the same age is in the 12th percentile and has a sten score of 3. In the study group, below-average results for chronological age were obtained, which indicates that the examined children's vocabulary and speech understanding (despite the intellectual norm confirmed in them and the exclusion of progressive developmental or mental health disorders) are significantly lower than indicators for normally verbally developing monolingual children in Poland. Due to the lack of statistically significant differences between the results of the boys and the girls, in further analyses the group of children was treated as homogeneous, disregarding gender.

Table 1 presents the characteristics of the FACES IV results, while Figure 1 illustrates the functioning profile of the studied families, according to the converted results (stens), comparing them with the normalized results for the Polish population which were available in the tool manual (Margasiński, 2009).

Table 1
FACES IV results of the parents of children with delayed speech development (n=72)

Dimension of FACES IV	Mean	SD	Percentile	Sten score
Cohesion	25.5416667	6.27747482	15	4
Flexibility	21.3472222	5.62979929	19	4
Disengaged	18.8472222	6.27909503	92	8
Enmeshed	13.9027778	4.46002502	44	6
Rigid	17.8888889	4.71304918	59	6
Chaotic	18.3472222	5.80713433	78	7
Family Communication	33.3194444	9.72991089	15	4
Family Satisfaction	32.9027778	9.6708648	30	5

Figure 1
Statistical analysis of the results of the parents of children with delayed speech development – calculated FACES IV sten scores (n=72)



The sten scores illustrated in Figure 1 create a hypothetical profile of a parent of a child with verbal developmental delay, as built by the results. This profile does not coincide exactly with any of the six profiles outlined in the Polish normalization of the FACES IV questionnaire. However, one may notice that the distribution of the average results is close to Profile 5: Rigidly Disengaged. After comparing the results of the respondents with the norms for the Polish population (Margasiński, 2009, p. 32), statistically significant differences were found in the following dimensions of

family functioning profile: Cohesion ($t=-4,3597$; $p<0,00004$; $df=370$), Flexibility ($t= -3,9889$; $p<0,00003$; $df=370$), Disengaged ($t=-4,1576$; $p<0,00002$; $df=370$), and Chaotic ($t=-4,0596$; $p<0,00003$; $df=370$).

The parents who were examined on the Scales of Balanced Cohesion and Balanced Flexibility obtained average results, but at the same time their scores on the Scales of Disengaged and Chaotic were high, and for Family Communication they were relatively low. Therefore, Hypothesis 1 was confirmed; it assumed that the profile of family functioning in the study group of parents of children with delayed speech development is less favorable than the profile of people in the general population in the controlled variable scales.

In the next stage of statistical analysis, adequate to the normal distribution of results, the relationship between the overall scores of the children’s speech understanding from the PPVT-C test ($M = 59.79$; $SD = 2.71$) and the family profile and ego-resiliency of their parents was examined. The results of this analysis are presented in Table 2.

Table 2
OTSR Scale results compared to the family profile of FACES IV and ego-resiliency (n=72)

Dimension of FACES IV	Mean	SD	$r(X,Y)$	r^2	t	p
Disengaged	18.847	6.27909	-0.259	0.06744	-2.25001	0.02759
Enmeshed	13.9028	4.46003	0.00880	0.000077	0.07364	0.941506
Rigid	17.8889	4.71305	-0.0570	0.003256	-0.47818	0.634016
Chaotic	18.3472	5.80714	-0.1342	0.018026	-1.13356	0.260845
Cohesion	25.542	6.2774	0.2389	0.05707	2.05839	0.04327
Flexibility	21.3472	5.62979	0.21006	0.044127	1.79764	0.076547
Family Communication	33.319	9.7299	0.3256	0.10606	2.88189	0.00524
Family Satisfaction	32.908	9.6708	0.3501	0.12259	3.12737	0.00257
Ego-resiliency	35.931	4.2003	0.4175	0.17435	3.84470	0.00026

According to the analysis of the data presented in Table 2, statistically significant relationships were confirmed between the children’s understanding of language and the following dimensions of the profile of their

family functioning: Disengaged, Cohesion, Family Communication, and Family Satisfaction. A negative correlation was found between PPVT-C results and Disengaged, while a positive correlation was found between speech understanding and Cohesion, which means that a higher rate of disengagement in the family system was associated with a lower level of speech understanding by the child. Cohesion in the family system, as with Family Communication and Family Satisfaction, coexists with a higher level of children’s speech understanding. These relationships are statistically significant, but the strength of the confirmed relationship is moderate.

A positive correlation was also confirmed between the parent’s ego-resiliency and the child’s level of speech understanding (a strong, statistically significant correlation was found).

Therefore, these results allow for a partial confirmation of Hypothesis 2, which assumed that families of children with less speech understanding display less favorable functioning profiles in the dimensions of Family Communication, Cohesion, and Flexibility. In the case of the Flexibility variable, a statistically significant relationship was not confirmed.

These results also confirm Hypothesis 3, which stated that children of parents with higher ego-resiliency, despite confirmed verbal developmental delay, are characterized by higher speech understanding than other children in the study group.

Calculating Pearson’s correlation coefficient also confirmed the expected, though moderate, relationship between children’s speech understanding and their age. The coefficients describing the correlation between the ages of the children and parents (statistically insignificant) with the general indicator of language understanding as measured by the PPVT-C are listed in Table 3.

Table 3
Analysis of the relationship of the children’s speech understanding and the ages of the children and parents

Age	Mean	SD	$r(X,Y)$	r^2	t	p
child (months)	70.01389	4.445264	0.257844	0.066484	2.232779	0.028764
parent (years)	34.91667	5.272170	-0.0624	0.003899	-0.5234	0.602302

In order to determine which of the demographic and intrapsychic variables considered in the study could most significantly explain the indicator of speech understanding by children diagnosed with verbal developmental delay, multiple step regression analysis was performed.

Searching for the most selected model for analysis, the variables from the FACES IV test, the ego-resiliency scale, and demographic variables (collected from the classification questions) included the child's and parent's ages, the parent's education and marital status, the number of children in the family, the place of residence and economic situation of the family, the child's birth weight, any illness of the parents or child, and any particularly stressful events that the child's family experienced in the last 16 months.

The regression model for the dependent variable, the child's speech understanding (defined as the overall score from the PPVT-C test), explained 34.1% of the variance. The test result was $F = 10.326$ ($p < 0.001$), which allows the model to be considered fitted to the data. For the model in question, the significant predictors turned out to include ego-resiliency, Family Satisfaction, and the family's economic status. Table 4 presents detailed statistics on the predictors that were in the model.

Table 4
Statistics for predictors from the multiple step regression model for the dependent variable – speech understanding (general indicator)

Variables in the model	Non-standardized rate	<i>T</i>	Standardized rate	<i>p</i>
	Standard error		Beta	
Ego-resiliency	0.194	3.707	0.441	0.001
Family communication	0.173	2.987	0.351	0.007
Family economic conditions	0.619	2.539	0.280	0.019
Intercept	5.639			

Note. $R = 0.505$; $R^2 = 0.403$; adjusted $R^2 = 0.341$; $F = 10.326$; $p = 0.001$

Discussion of results

The epidemiology of verbal developmental disorders in children is an important problem today in health promotion because it provides information not only on the number of people requiring intervention, but it also indicates groups of children who are at potential risk (Topczewska-Cabaneck et al., 2012). It is statistically assumed that in Poland 8%–9% of children develop speech sound disorders (this percentage has increased in recent years), including 5% of children who manifest them in the first grades of primary school. The family environment provides a child with a special kind of stimulation which inspires the child to enter into new social interactions and motivates them to learn and use new words. Parents are the first significant people for the child, creating conditions and context for their development, thus it was considered important to also include in the context of verbal developmental disorders of children the aspect of the family system (Davis & Broadhead, 2007; Evans & Whipple, 2013). Parents provide the child with a sense of security, which allows the child to become independent and familiar with its surroundings. The current study confirmed that in the profile of the functioning of a preschool child's family, in terms of the verbal development of the child, the quality of family communication and closeness (the opposite of the Disengaged profile) in relationships with significant people are particularly important factors. The bond with parents and the observation of the relationships between them becomes an important reference for building subsequent relationships and is reflected in the child's social interactions (Bowlby, 2007). Brzezińska (2014) proved that parental care based on positive emotions, love, and sensitivity has a positive relationship with the child's cognitive development. In accordance with the assumptions of FACES IV, children in families characterized by a higher disengagement rate may experience a lack of boundaries in the sphere of social requirements and some chaos in the pedagogical influence of parents (Olson & Goral, 2003; Margasiński, 2011).

This study revealed a positive correlation between the competence related to a child's understanding of language and other selected aspects

of the family functioning profile—Family Communication and Family Satisfaction (the last dimension was ultimately not included in the regression model due to the moderate strength of the relationship, caused by the limited size of the study group)—and the parent’s ego-resiliency. In this context, it is worth recalling Bruner’s view (2010), which is that a readiness to shape a given cognitive competence in a child emphasizes the need to create favorable conditions for development. A child who understands language acquires new ways of adapting to their environment, expands their competence in relation to others, develops at the personality level, and exhibits different behavior. It can therefore be assumed that the parents’ task is first to support the child in achieving specific stages of cognitive development, and then to support the child in the development of independent learning (Vandell et al., 2010). The current study has shown that parents’ psychological resilience is an important predictor (the result of step regression analysis) of a child’s speech understanding. It is possible that a parent with a higher rate of ego-resiliency provides the child with more varied and secure ways of making contact with others, thanks to which it assimilates social rules faster and learns the communicative function of the language more efficiently, even when a developmental delay is found for various reasons in the verbal sphere.

Parents with a higher ego-resiliency rate and a high level of intra-family communication are factors which seem to inspire a child with delayed verbal development more easily and adequately to enter bravely into situations requiring independence. They encourage the child to make choices and create opportunities for the child to realize their own ideas. These aspects of parental activities are conducive to the development of a child’s verbal competences and to leveling deficits in this aspect. This corresponds to the results of other research (Brzezińska, Matejczuk, Jankowski, & Rękosiewicz, 2014; Brzezińska, Appelt, Jabłoński et al., 2014; Kielar-Turska, 2010) which showed that a child aged 5–7 years shows great cognitive curiosity, often asks questions, and demonstrates a motivation to learn, expecting adequate and active support from the people close to them. The way adults meet the child’s cognitive needs during this period translates into their developmental achievements.

Children whose emotional and cognitive needs are not properly met in the context of conflicts, excessive stiffness, or entanglement in the family system may be less interested in learning about the surrounding world. Stimulating the development of a child should, according to numerous researchers (Kielar-Turska, Lasota, 2010; Sikorska, 2016; Lasota, 2017; 2019), take into account the current psychological needs of the child and the level of their mental functioning and should prepare them for the formation of new ones. However, this is possible in a balanced (functional) family system, which the results of this study seem to confirm. Other studies (Haden et al., 2001) have demonstrated that children are better at recalling events which they and their parents experienced and discussed together than those which they did not talk about with their parents, or about which only the parent or only the child spoke. These findings correspond to the results of the current study, in which intra-family communication is an important aspect of the development of language understanding in a child with delayed verbal development.

The results are accepted with caution and are planned to be replicated. They confirm that the foundation for the child's language initiative—alongside obvious neurocognitive factors—are their sense of security, autonomy, and freedom of action, which are formed on the basis of their previous experiences. In this aspect, it seems that the variables that were included in the multiple-step regression model for the dependent variable, defined as the child's understanding of speech, fit exactly into this interpretation. They make it easier for a child to safely and boldly absorb cultural tools, which include concepts and symbols, in addition to material objects. Language, as numerous researchers have indicated (Vygotsky, 1980; Piaget, 2002; Chomsky, 2006; Gleason & Ratner, 2017), mediates between the individual and the society. The interpersonal aspect of language mainly concerns interpersonal relationships and how they affect individual development. That is why communication and bonding within the child's family system are so important.

Analyzing the important and beneficial area of ego-resiliency in the parents of children with verbal developmental delay in a model explaining the level of speech understanding by children, it is worth recalling

the study by Connor (2006), which indicated that ego-resiliency is important in dealing with various types of stress. Ego-resiliency is an important factor which determines how people (including the parents of children with developmental deficits) deal with stress (Zhang et al., 2015). Zhang et al. (2015) connected it with the measure of coping capacity, which describes the characteristics of a person that allows individuals and communities to grow and develop when experiencing adversity. It is possible that this feature in some of the surveyed parents also means that they are more determined to be motivated to take action that stimulates the verbal development in their children.

A child's emotional development is parallel to cognitive changes. Talking about emotions allows the child to confront them and provides an opportunity to share with other personal experiences. Conversation related to emotions helps them to understand other people's behavior and to experience a variety of feelings. It is easier to achieve this in families with more consistency and a higher rate of intra-system communication.

Conclusion

The study can be summed up with the following conclusions:

1. The profile of family functioning in the study group of parents of children with delayed speech development is less favorable than the results achieved on the scales of controlled variables by the general population, which are available in the standardization manuals of the research tools used.
2. Families of children with lower scores of speech understanding present less favorable performance profiles in the selected dimensions of FACES IV: Family Communication, Cohesion, Disengaged, and Family Satisfaction. However, the hypothesis that there is a relationship between Flexibility in the functioning profile of the families under study and the indicator of speech understanding by the child was not confirmed.

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3. Children of parents with more ego-resiliency achieve better results in speech understanding.
 4. A strong, statistically significant relationship was confirmed between the economic situation of families of the examined children and their level of speech understanding. The expected relationship between the speech comprehension and the age of a child with delayed verbal development was also observed.

However, the relationship between a child's understanding of speech and other demographic variables, such as the child's and parent's ages, the parent's education and marital status, the number of children in the family, the place of residence and economic situation of the family, the child's birth weight, any illness of the parent or child, and any particularly stressful event that the child's family experienced in the last 16 months, was not confirmed.

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