

Socialisation of Adolescents with Cognitive Disorders through Emotional Intelligence

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Abstract: *Objective:* To study the influence of the development of emotional intelligence of adolescents with CDs through the involvement of their parents and teachers in socialisation. The emotional sphere of adolescents with cognitive disorders (CDs) is no less important than correcting their cognitive development. The methods that allow fixing the patients' ability to recognise emotions don't realise the functioning of their emotional sphere.

Method: Questionnaires were used for diagnosing the emotional interaction of parents and teachers with adolescents with CD, the questionnaire for measuring the socialisation of adolescents "How adapted I am to life" by A. Furman, statistical analysis ANOVA, correlation analysis r of Pearson, content analysis of the qualitative data.

Results: Standardised questionnaires developed that reflect the formation of emotional intelligence of the adolescent with CDs through the interaction with their parents and teachers. Empirical data obtained while research resulted in statistically significant correlations of emotional intelligence between parents, teachers and psychologists and social adaptation measured via Furman questionnaire. It was found that the positive emotional interaction and tactile support of adolescents with CDs with their parents increases the level of social adaptation. Similar correlations were found in teachers' emotional interaction with the adolescents with CDs. The number of parents who showed a low emotional and tactile interaction with adolescents was 20%.

Conclusions: Detected statistically significant correlations proved that the high role of the participation of parents and teachers in the process of forming emotional intelligence contributes to the successful socialisation of adolescents with cognitive disorders.

Keywords: Adolescents, intellectual disorders, emotional intelligence, emotional interaction, social adaptation, tactile interaction.

INTRODUCTION

The problem of studying adolescents' socialisation with cognitive development disorders (hereinafter — the adolescents with CDs) is becoming increasingly important. Its in-depth study contributes to developing effective educational, pedagogical and psychological models of working with such adolescents. Given the various forms of cognitive development disorders, scientists will focus on forming specific methods of working with such children instead of a generalised approach. For example, the emotional sphere of adolescents with autism spectrum disorders (ASDs) functions differently from adolescents with Down syndrome (DS). Given this study of adolescents'

emotional competence development with DS is becoming increasingly relevant and characterised by methodological diversity.

The authors of [1] define emotional intelligence as a group of mental abilities that contribute to understanding one's own emotions and the emotions of others. The works of [2] are worth noting among the leading emotional intelligence researchers, who point out that emotional intelligence includes initiative, self-control, perseverance, and the ability to motivate. The author notes that the rapid development of technology has allowed studying the functioning of an individual's emotional intelligence actively.

Studies of emotional intelligence have opened new prospects in psycho-correctional work with children and adolescents with CDs in terms of their socialisation. One of the main methods of social adaptation of such children and adolescents is inclusive education [3]. The

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researchers in [4] conducted an empirical study that found a high need for adolescents with CDs to be in a social environment. The researchers in [5, 6] point to the insufficient level of public appreciation for adolescents with CDs, which negatively affects their and their parent's emotional health. The researcher in [7] urges the need for the formation of rules-based behaviour of adolescents with CDs in society, given that they have an impaired function of interpreting emotions.

The author of [8] also emphasises the importance of the emotional development of adolescents with CDs. Based on the empirical study, the author identified the following factors of risky behaviour in the socialisation process: violation of generally accepted social rules (manifested in half of the respondents), reluctance to social integration, infantilism, social distrust, propensity to victimise behaviour, virtual addiction, differences in perception of "I-concept" by such an adolescent. The scientists in [9] note that the timely detection of destructive manifestations of emotionality in children with cognitive development disorders will contribute to more successful socialisation. The author of [10, 11] distinguishes social, pedagogical, psychological approaches to understanding the essence of emotional intelligence. The social approach is interpreted as one that determines the emotional competence of the individual to maintain existing norms in society today.

Thus, based on theoretical analysis, we define the *socialisation of adolescents with intellectual development disorders* as a process of comfortable integration into society by accepting its rules and regulations and awareness of their role in society. The researcher in [12] identifies the physiological, psychological and social levels of social adaptation of the individual. Adolescents' social level of adaptation with CDs is accompanied by dependence on others, which is a concern of their parents and family [13]. The authors of [3] state the isolation that blocks the development of higher mental functions during socialisation — self-regulation, self-organisation, moral values, but they note that such traits as responsibility and dominance of the value of others over their own self can be corrected.

The author of [14] can be distinguished among the Ukrainian scientists, whose works allow forming an idea of the functioning of the emotional sphere of adolescents. The researcher identifies such levels of emotional intelligence as recognition, differentiation

and verbalisation of emotions, noting that 70% of adolescents with CDDs have an average level of recognition based on intragroup indicators. In another study on the development of empathy in adolescents with intellectual disorders, the author stated that the average level of empathy was found in only 25% of the studied adolescents [10, 11]. Studies conducted by foreign researchers comparing the recognition of emotions in adolescents with Down syndrome and adolescents with normal development did not reveal significant differential differences in both groups [15, 16].

Besides, several scientists have found that adolescents with Down syndrome are more socialised than adolescents with other forms of CDs. Scientists have linked this phenomenon to facial features that others recognise and promote understanding towards such individuals [17].

In our opinion, the problem of studying the psychological characteristics of adolescents with intellectual disabilities, namely their cognitive and emotional competence, is a certain dissonance of scientific, theoretical and practical approaches. Determining the level of development of emotional intelligence without studying the accompanying factors is uninformative. The leading role throughout the process of socialisation of adolescents with intellectual disabilities is played by the bilateral participation of their immediate environment, namely parents or guardians and teachers. Therefore, the study of emotional interaction of social workers and practical psychologists who provide psychological support and conduct psycho-correctional work with this group of children and adolescents and their parents and guardians is vital in developing emotional intelligence adolescents with CDs. The development of emotional intelligence includes their emotional reflection and control of the behaviour of adolescents with CDs through positive or negative reinforcement from the parents (guardians) and teachers.

Research aimed to study the influence of the development of emotional intelligence in adolescents with CDs through the involvement of their parents and teachers in their socialisation.

The subject of the study is the development of emotional intelligence in adolescents with PE.

The object of the study was the level of socialisation of adolescents with CDs.

The research objectives were the following:

- development and methodological substantiation of research tools;
- An empirical study of the level of socialisation and the process of developing emotional intelligence in adolescents with CDs by measuring their emotional interaction with parents (guardians) and teachers over a certain period;
- Results' analysis of the influence of emotional interaction of parents (guardians) and teachers on the level of socialisation of adolescents with CDs.

Research Design: Pretest and posttest.

MATERIALS AND METHOD

The research procedure included a series of consistent steps that provided an opportunity to conduct an empirical experiment to measure the process of developing emotional intelligence in adolescents with cognitive development disorders and study the level of their socialisation. The research provided for the implementation of the following stages,

1. Preparatory stage
2. Pilot research stage
3. Experimental stage
4. Analytical stage

At the preparatory stage, questionnaires for emotional interaction of parents, teachers and psychologists with adolescents with CDs (Down syndrome) were developed (questionnaires are provided in Appendices A and B).

The pilot study aimed to test and standardise the author's methods for measuring the process of developing the emotional intelligence of adolescents with CDs (Down syndrome). Given the specifics of the study and more complete and objective data collection, it was decided to design a questionnaire based on the principle of closed and open questions [18].

The main study includes measuring the level of socialisation of adolescents with IDD at the beginning of the experiment, measuring the process of developing the emotional intelligence of adolescents

with CDDs by parents and teachers every two weeks for two months, repeated measurements of the level of respondents' social adaptation.

The final stage was analytical, which involved analysing and interpreting the data obtained during the experiment.

In order to study the process of developing the emotional intelligence of adolescents, it was important to explore the role of their parents and teachers. According to [19], parents play a significant and unpredictable role in the social adaptation of their own children with cognitive development disorders. Teachers of the institution where adolescents study are no less important in developing their emotional intelligence. In this regard, we were faced with the task of studying the bilateral process of developing emotional intelligence by both teachers and parents. To this end, a questionnaire on the emotional interaction between parents and their adolescents with CDs and a questionnaire to measure social workers' emotional interaction with such adolescents was developed. Based on the theoretical and methodological analysis, several criteria were identified, which formed the basis of the questionnaire, namely: emotional interaction with adolescents (gestures, facial expressions, intonation), tactile interaction (both positive and negative), verbal interaction. Both questionnaires underwent the procedure of criterion validity by the method of expert evaluation and standardisation of the methodology on a large sample [20]. Assessment of social adaptation of adolescents with CDDs was conducted using the questionnaire "How adapted I am to life" [21].

Procedure for Standardisation of Author's Questionnaires

Standardisation sampling. In order to standardise the methods of emotional interaction of adolescents with CDDs with their parents, it was necessary to form a representative sample of respondent parents. To achieve homogeneity of the sample, we selected complete families whose members (mother, father or guardians) were similar in the level of education and financial status. The sampling process lasted six months and covered respondents from all regions of Ukraine. A similar procedure was conducted to standardise the questionnaire of emotional interaction of adolescents with social workers and psychologists. The sample also included respondents from all over Ukraine. The number of respondents and their characteristics are given in more detail below.

Sampling for the Main Study

The participants of the study were 54 pupils (12 females and 12 males) of Kyiv boarding schools No. 10, No. 16 and No. 17 aged 12-14, who had Down syndrome and came from complete families, their parents (104 people), as well as 25 teachers and psychologists, employees of these institutions. All the respondents were acquainted with the research procedure. They gave the personally written agreement in the case of parents and the parents' or guardians' written agreement in the case of the adolescents with CDs. The research included respondents who reached the age of adolescence with the diagnosis of Down syndrome and had both parents (guardians).

In the preparatory and pilot stages of the study, the priority was the development, standardisation and validation of the author's questionnaires, which included the following steps:

1. The procedure for designing and selecting the main scales of the questionnaire using factor analysis.
2. Standardisation sampling.
3. Standardisation and validation of the questionnaire.

The Procedure of Designing the Questionnaire

Given the lack of research on the topic and lack of similar methods, it was decided to check the criterion validity of the questionnaire with the involvement of third-party specialists and experts [22]. This validation stage of the questionnaire involved 15 specialists (social workers of rehabilitation centres for adolescents with cognitive development disorders in Kyiv). Each specialist evaluated one closed and open question on a ten-point scale—processing expert assessments allowed calculating the concordance coefficient, which was $W=0.76$.

The Procedure of the Factor Analysis

To form the final version of the Emotional Interaction of Parents with Adolescents questionnaire, which included closed questions, 62 families (124 respondents) were selected to complete a pilot version of the questionnaire. The obtained data were subject to factor analysis, which resulted in a selection of three factors covering 80% of the variance ($KMO= 0.852$, Barlett= 0.000). The selected factors formed the basis

of the questionnaire scales that are mentioned as follows,

- the emotional contact scale (which include subscales of positive and negative emotional contact) ($\alpha = 0.835$),
- the tactile contact scale (which also include subscales of positive and negative emotional contact) ($\alpha=0.798$),
- the parent's reactions to the adolescent's emotional behaviour scale (included subscales of positive and negative reactions) ($\alpha= 0.737$).

The Procedure of Standardisation of the Method

The method was standardised with the derivation of socio-psychological standards. In order to obtain data on the upper and lower limits of the norm, 216 complete families from all over Ukraine were selected, which were similar in social and material status: in 60% of respondents, each parent had higher and incomplete higher education, in 80% of respondents at least one parent had higher and incomplete higher education, 15% of parents had vocational secondary education, 5% of respondents did not indicate information about education. The survey was conducted anonymously by filling out an electronic form of the questionnaire sent to respondents via the Internet. The homogeneity of the data was verified by Kalmagorov-Smirnov Test, and statistical analysis showed that the sample is homogeneous. The distribution of results using a standardisation sample showed that 58% of respondents entered the range of average values with a standard deviation of $\sigma=15$. As a result of counting the raw scores of the obtained data, high, sufficient and low levels of emotional interaction between parents and adolescents were determined.

Validation and standardisation of the questionnaire for social workers and psychologists of specialised institutions went through a similar procedure. The coefficient of consistency was $W=0.78$ for both closed and open questions. The pilot version of the questionnaire was completed by 61 teachers from all over Ukraine via the Internet. The obtained data were subjected to factor analysis, which resulted in a selection of three factors covering 80% of the variance. These factors formed the basis of the emotional contact scale ($\alpha=0.905$), the tactile contact scale ($\alpha=0.856$), the scale of reactions of teachers to the emotional behaviour of the pupil ($\alpha=0.813$). For ethical

reasons, the questions of possible negative tactile reactions of teachers in relation to their students in the questionnaire were not included. The standardisation sample included 201 teachers. Verifying the sample homogeneity through the Kalmagorov-Smirnov Test showed its homogeneity; the coefficient of standard deviation was $\sigma=11.2$.

So, two versions of the questionnaire of emotional interaction with adolescents addressed to parents and teachers were finally formed due to the procedures for determining the criterion validity and standardisation of the methodology. The parent questionnaire included twenty-two questions, including sixteen closed and seven open questions. The teacher questionnaire included fourteen closed questions and seven open questions. Data analysis was performed using Pearson correlation (r) and one-way variance (ANOVA) analysis in SPSS 20.0. The data obtained through open questions were processed using content analysis.

The research was realised for two months, from March till May 2021. The respondents were mainly 52 teenagers aged 12-14, who live with whole families and study in specialised boarding schools in Kyiv — No. 10 (20 pupils), No. 16 (18 pupils), 17 (15 pupils). The surveyed included 26 males and 26 females. At the beginning of the study, the selected respondents filled out the questionnaire “How adapted I am to life”. Then, every two weeks, the pupils’ parents filled out a questionnaire on emotional interaction with adolescents for two months. Teachers of the institutions also filled in a copy of the questionnaire for educators every two weeks during the specified period for two months. At the end of the experiment, adolescents with special needs filled out a questionnaire again to measure social adaptation [21].

RESULTS

Discussing measuring emotional intelligence, we mentioned that recognising emotions is not enough for researching the process of its forming. Given the peculiarities of the development of adolescences, their process of emotional intelligence forming is related to the nearest environment, namely parents and teachers. The emotional interaction, tactile interaction and forms of the verbal interactions were the main criteria taken as the basis of questionnaire to measure the process of emotional intelligence forming. So, several types of social adaptation were highlighted according to the Furman questionnaire and high, middle and low levels of parents’ and teachers’ involvement in the process of

emotional intelligence forming according to the socio-psychological standards derived. The data were analysed using the statistical analysis ANOVA. The data obtained had been separated according to the results of surveyed respondents.

Therefore, it is worth analysing the data we obtained from the initial survey to determine adolescents’ level of social adaptation with CDs. As the social adaptation questionnaire [21] was not aimed at measuring the personal characteristics of the pupils but their level of socialisation, the questionnaire was completed with the participation of a social worker or psychologist. The mentor’s task was to talk to the pupil about the meaning of the statements and, if necessary, to explain their meaning further. The survey results showed data corresponding to type I and II of socio-psychological adaptation. The number of respondents with a high level of adaptation was 5% of the total number of respondents. 50% of them showed a medium level of adaptation, while 30% of respondents had a low level, and 10% of respondents were found to have an unobvious level of maladaptation, and 5% had — obvious level of maladaptation.

Analysis of the Results of the Parents’ Survey

It is worth analysing the general data obtained using questionnaires to measure the emotional interaction of adolescents with CDs and their parents, which were filled in every two weeks for two months. We derived the averages of the four questionnaires, which demonstrated the level of emotional interaction between parents and adolescent children. Among the surveyed parents of both sexes, 25% of the total respondents showed a high level of emotional interaction. Such parents show a high level of interest in their children’s emotional experiences.

The average level of participation in the emotional life of their children was recorded in 55% of parents surveyed. It is characteristic of these parents to often ask the child about his/her emotional experiences to show emotional stability in the child’s violent expression of anger or joy. Such parents are prone to high levels of tactile interaction with their children and manifestations of positive emotional reinforcement. There were 20% of parents who showed a low level of interest in the emotions experienced by their children, who are prone to indifference and show a low level of emotional support for any of their children’s activities.

The results of correlation analysis revealed several positive statistically significant correlations. There is a

statistically significant correlation between the values on the subscale of negative emotional contact and obvious maladaptation $r = 0.178$ ($p \leq 0.015$). And a statistically significant correlation between the data on the negative tactile contact subscale and the obvious maladaptation scale $r = 0.207$ ($p \leq 0.003$). Besides, a close statistically significant correlation was found between negative reactions from parents and the average level of adaptation of adolescents with CDs $r = 0.449$ ($p \leq 0.001$). The results of correlation analysis between the positive emotional interaction between adolescents and their parents and the level of socialisation of adolescents with CDs show the opposite picture.

A statistically significant correlation was found between positive emotional contact and a high level of social adaptation of adolescents with CDs at $r = 0.459$ ($p \leq 0.001$).

Positive tactile contact positively correlates both with a high level of adaptation $r = 0.518$ ($p \leq 0.001$) and with a medium level of adaptation $r = 0.389$ ($p \leq 0.001$). Based on the results of the correlation analysis, it can be argued that the positive emotional interaction of adolescents and their parents has a positive effect on the social adaptation of their children with CDs (Down syndrome).

The next stage of data processing was to study whether the level of socialisation of children changes with increasing levels of emotional interaction of parents with their adolescent children with cognitive development disorders. Verification of the sample by the Kalmagorov-Smirnov Test showed the normality of data distribution, so the results were processed. Data of all stages of the questionnaire for two months and the data of the primary and secondary filling of the questionnaire "How adapted I am to life" [20] were processed through a one-factor analysis of variance. Comparison of mean ranks showed the dynamics of

the level of socialisation of adolescents depending on the level of emotional interaction with parents, presented in Table 1.

As we can see from the table, there is a statistically significant ($p \leq 0.001$) in the degree of socialisation of adolescents with CDs together with an increase in the level of emotional interaction of parents with adolescents. It should be noted that the tendency to increase at a statistically significant level ($p \leq 0.001$) is observed both in the group of mothers or female guardians and in the group of fathers or male guardians ($p \leq 0.001$). Our analysis of the data confirms part of our hypothesis about the role of parents in the socialisation of the child through the development of emotional intelligence with the help of active and effective emotional interaction with their adolescent children with CDs. We can also note the level of sensitivity of adolescents with CDs, with Down syndrome to both positive and negative emotional reactions of parents or guardians, i.e., the more positive emotional reinforcement an adolescent receives in his/her own family, the more successful he/she will go through the stages of socialisation.

The final stage of the analysis of adolescents' interaction with CDs and their parents was the analysis of open questions by the method of content analysis. One word or phrase that reflects an emotion or its verbal manifestation served as a unit of analysis. Thus, we obtained results that provide a qualitative description of the two-way process of emotional interaction in an adolescent's family with CDs.

Adolescents with Down syndrome are quite emotionally responsive to the manifestations of both positive and negative behaviour on the part of parents. Among the manifestations of dissatisfaction with children's behaviour, the most frequently listed emotion is ignoring (50% of respondents) (I go and lock myself

Table 1: Dynamics of the Level of Socialisation of Adolescents Depending on the Level of Emotional Interaction of Parents with Adolescents with CDDs

Scale name	Parent sample	Low level of emotional interaction (Mean Rank)	σ	Sufficient level of emotional interaction (Mean Rank)	σ	High level of emotional interaction (Mean Rank)	σ	Sig
Degree of social adaptation (N_2, O_3)	General (N 416)	2.6	0.546	2.81	0.453	3.09	0.521	$p \leq 0.001$
	Male (N 209)	2.35	0.567	2.92	0.402	2.97	0.316	$p \leq 0.001$
	Female (N 209)	2.8	0.468	2.73	0.478	3.18	0.676	$p \leq 0.001$

Note: σ – standard deviation; Sig – statistical significance.

in the room, leave the apartment, just keep quiet), followed by screaming (25% of respondents) (I get hysterical, raise my voice). Among the surveyed, 15% of parents indicated that they try to establish positive tactile contact with their child (I hug him/her until they calm down, I put him/her on my lap and hug him/her, I take his/her hand). But 90% of adolescents are also characterised by irritation in response (silence, which turns into crying, "moaning", crying with tears). It is important to note that women predominate (70%) among those who show an adverse reaction to a child's disobedience, while such a reaction is equally common in both men and women (52% of men and 48% of women) in the group of parents who respond positively. A study of children's reactions to parental irritation shows that most are emotional rather than verbal responses. Instead, positive contact can reassure 70% of adolescents who become participants in the study (my daughter can still cry for a while, then hugs me and does not let go for a long time, she knows that I will hug and wait for it in return).

Regarding positive emotional contact, as expected, adolescents with Down syndrome actively respond to any form of positive contact and show appropriate emotional responses — mostly hugs. It is important to note that 80% of parents who tend to show irritation towards their child found it difficult to list emotional and verbal forms of expression of positive mood and positive emotional contact otherwise stated their absence, e.g., I just keep quiet, and he/she is silent, I rarely hug him/her, and for what?. It was difficult for such parents to list their children's reactions in response (I don't pay attention to what he/she says, that smile is always on his/her face, whether I'm silent or saying something).

Analysis of Teachers' Survey Results

The overall results were analysed to assess the number of teachers who are characterised by high, sufficient and low levels of emotional interaction with

adolescents. There were 60% of surveyed teachers who showed a high level of emotional interaction, and 40% had a sufficient level. Among this group of respondents, no teachers showed a low level of emotional interaction. The probable reliability of the provided answers was confirmed by a relatively wide range of content analysis data. 95% of teachers noted that high intonations do not contribute to an adolescent with CDs (DS) to change negative behaviour to positive.

As the teachers noted in their answers, intonation is of paramount importance even in imperative forms of addressing (I just say quietly: please sit down, I can repeat this twenty times in a row, it can take half a lesson). Embraces dominate in positive tactile manifestations. Holding hands, shaking hands when greeting, and friendly touches to the shoulder area in the lead among the tactile forms of interaction between teachers and students. Adolescents' reactions to remarks include behavioural protest (lying down or sitting on the floor), silence, and sometimes tossing objects. In their responses, teachers point out that they are trying to cultivate socially acceptable tactile contacts in public institutions — mostly handshakes.

In the case of parents and teachers, we used a one-way analysis of variance (ANOVA) to assess the change in the level of socialisation depending on the level of emotional interaction with teachers and mentors, the results of which are presented in the table below (Table 2).

Thus, as we can see from the obtained results, there is a statistically significant increase ($p \leq 0.001$) in the level of social adaptation and an increase in emotional interaction. That is, the higher the emotional participation of the teacher, the better the pupil socialises.

The final stage of the analysis of empirical research data is to identify statistically significant relationships

Table 2: Dynamics of the Level of Socialisation of Adolescents Depending on the Level of Emotional Interaction of Teachers with Adolescents with CDDs

Scale name	Teacher sample	Low level of emotional interaction (Mean Rank)	σ	Sufficient level of emotional interaction (Mean Rank)	σ	High level of emotional interaction (Mean Rank)	σ	Sig.
Degree of social adaptation N102	General (N 100)	1.87	0.546	2.39	0.453	2.87	0.521	$p \leq 0.001$

Note: σ – standard deviation; Sig – statistical significance.

between the degree of socialisation of adolescents with CDs and the manifestations of emotional interaction with teachers. There are positive statistically significant correlations between a high level of adaptation and positive tactile contact ($p \leq 0.001$), positive emotional contact ($p \leq 0.001$). There was a negative statistically significant correlation to the teacher's silence in response ($p \leq 0.001$).

DISCUSSION

Research on the role of emotional intelligence in the socialisation of adolescents with CDDs is actively developing in the West, particularly in the United States and Europe. In Ukraine, such studies are only at their dawn. Therefore there is a significant lack of diagnostic tools. We have developed and standardised questionnaires of emotional interaction of adolescents with cognitive development disorders with their parents and teachers, which reflect the functioning of the emotional sphere of adolescents with CDs and allow diagnosing the causes of emotional manifestations of such adolescents.

The need to develop separate tools is reflected in the works of [23, 24]. The researchers developed a multidimensional scale of social competence in autism spectrum disorders, pointing to the lack of diagnostic orientation of the DSM-IV-TR in assessing individual differences in the social functioning of people with highly functional AS disorders. The multidimensional scale reflected seven areas of social competence of adolescents with ASD: social motivation, social inferencing, demonstrating empathic concern, social knowledge, verbal conversation skills, nonverbal sending skills, and emotion regulation.

The socialising role of parents in the lives of adolescents with CDs was studied by [19], who found that more severe reactions of parents to violent emotional reactions contribute to the formation of more socialised behaviours in such adolescents. A similar parallel can be drawn with the statistically significant positive correlations we obtained between the negative emotional reactions of parents and a sufficient level of adaptation of adolescents.

The possibility of using questionnaire psychodiagnostics techniques in working with children with Down syndrome is confirmed by the results of foreign studies. Researchers in [15] did not confirm the hypothesis of a lack of emotional knowledge in

adolescents with Down syndrome despite speech disorders, which allows them to explore their emotional sphere using these methods actively. A study conducted by [16] showed no evidence of differential differences in emotion recognition between adolescents with typical development and adolescents with Down syndrome.

So, we can assume that adolescents with Down syndrome have a wide range of emotional responses, which allowed us to make diagnostics using questionnaires. The results of the study of emotional interaction of pupils and teachers confirmed their significant role in the development of emotional intelligence of adolescents with CDs in the process of their socialisation. Based on the data of content analysis and quantitative analysis of the results, we can say that today teachers create a favourable emotional atmosphere in educational institutions. Teachers and psychologists must teach to show socialised forms of emotionally coloured behaviour, such as handshakes instead of hugs.

Besides, it is important to note that a large proportion of foreign research is aimed at studying the capabilities of the emotional sphere of children and adolescents with autism spectrum disorders (ASD) using extremely accurate methods of psychodiagnostics. The scientists in [25] studied the features of imitation movements of adolescents with autism with human participants. They worked with the presence and absence of positive reinforcement, recording the activity of the brain cortex with special equipment. More empathetic responses of adolescents with autism spectrum disorders to human arm movements with positive reinforcement and the absence of such correlations in response to arm movements with and without positive reinforcement have been reported.

In general, studies of the formation of the emotional sphere of adolescents with CDs are marked by the work of [26], who studies the methods of speech development in children with autism spectrum disorders. Differences in neural connections in the processing of semantic information by adolescents with ASD are actively studied, which also deepens the understanding of the functioning of the emotional sphere of such adolescents.

LIMITATIONS

Limited sample of respondents because of parents' refusal.

CONCLUSIONS

As a result of our empirical research, we recorded a positive role in developing emotional intelligence in the social adaptation of such adolescents. It was empirically established that the growth of the development of the emotional intelligence through the emotional interaction with their parents or guardians contributes to the growth of socialisation of adolescents with CDs: the higher parents' interest in the emotional sphere of their own child with cognitive development disorders, the more favourable it is for their further social adaptation, positive assessment of their own self. It was empirically proved by finding the statistically significant growth between positive emotional (gestures, facial expressions, intonations), tactile and verbal interaction, and social adaptation growth. Analysis of qualitative forms of interaction based on the material of open questions between adolescents and their parents confirms the fact of emotional empathy of adolescents and a range of both positive and negative emotions. These adolescents tend to feel resentment and irritation even though they try to demonstrate the desire for positive contact, even in an unfavourable emotional environment. The questionnaire developed during research can be further applied to complex diagnostics of emotional development of the

adolescent in combination with other methods of research of emotional sphere of the person with cognitive development disorders.

Prospects for further research are to expand and refine ways to diagnose emotional intelligence and the level of socialisation of adolescents with CDs.

There is a great need for empirical research using methods adapted to the needs of respondents who have different types and degrees of cognitive development disorders. The problem of the functioning of the emotional sphere of children and adolescents with autism spectrum disorders remains poorly studied in Ukraine. There are certain theoretical and methodological gaps in theoretical ideas and practical approaches to working with adolescents with CDDs. Only a comprehensive approach to the problem of studying the features of emotional and social development by parents, teachers and scientists will form effective psycho-correctional support for this group of children, which will contribute to their successful socialisation.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

APPENDICES

APPENDIX A. QUESTIONNAIRE FOR PARENTS

Dear parents!

We offer you to take part in important scientific research, which aims to form effective ways of personal development and improve the social adaptation of your children.

Important! This questionnaire must be completed every two weeks for two months. Questionnaires shall be submitted to the researcher in a single set.

Your opinion is important to us. Complete confidentiality of the provided information is guaranteed!

Age _____ Sex _____

Education _____

Place of employment, position _____

Instruction

Express your attitude to the following judgments on a five-point scale. Circle one of the five possible answers that best reflects the truth of the statement:

- 1 – Never
- 2 – Sometimes
- 3 – Difficult to answer
- 4 – Often
- 5 – Very often

Statement	Never	Sometimes	Difficult to answer	Often	Very often
1. How often do you ask your child why he/she is sad (sits in silence, does not interact)?	1	2	3	4	5
2. How often do you ask your child why he/she is happy (laughs out loud)?	1	2	3	4	5
3. How often do you ask your child why he/she shows anger and aggression (stomps his/her feet, screams loudly)?	1	2	3	4	5
4. How often do you tend to ignore your child (keep quiet in response)?	1	2	3	4	5
5. How often do you raise your voice at your child?	1	2	3	4	5
6. Have you ever said insulting words to your child (idiot, fool)?	1	2	3	4	5
7. How often do you hug your child?	1	2	3	4	5
8. How often do you tend to show friendly tactile behaviour towards your child (pat on the shoulder, shake hands)?	1	2	3	4	5
9. How often did you push your child?	1	2	3	4	5
10. Have you ever had to lift up your hand against your child?	1	2	3	4	5
11. How often have you felt ashamed of the violent display of joyful emotions of your child in a public place?	1	2	3	4	5
12. How often did you feel indifferent to the positive emotions of your child at home?	1	2	3	4	5
13. How often have you been irritated by your child's positive emotions?	1	2	3	4	5
14. How often did you feel irritated by the manifestation of negative emotions by your child both at home and in public (crying, hysterics, screaming)?	1	2	3	4	5
15. How often have you been calm about the negative emotions of your child both at home and in public?	1	2	3	4	5
16. How often did you reinforce your child's positive emotions (laughed in response, said words of support)?	1	2	3	4	5

1. Please describe the emotions, words or action you react by when your child disobeys, shouts and protests.

2. Please list the emotions, words, or the actions that accompany your dissatisfaction.

3. Please describe the emotions, words or actions with which the adolescent reacts to your irritations.

4. Please list the forms of your positive tactile interaction with the adolescent.

5. Please describe the emotions with which the adolescent reacts to your positive tactile behaviour (hugs, friendly tactile movements).

6. Please describe the words, gestures or facial expressions with which you try to convey a positive mood to your child.

7. Please describe the emotions with which the adolescent reacts to your positive, emotionally charged behaviour.

APPENDIX B. QUESTIONNAIRE FOR TEACHERS

Dear teachers and psychologists of a specialised educational institution!

We offer you to take part in important scientific research, which aims to form effective ways of personal development and improve the social adaptation of adolescents with cognitive development disorders.

Important! This questionnaire must be completed every two weeks for two months. Questionnaires shall be submitted to the researcher in a single set.

Your opinion is important to us. Complete confidentiality of the provided information is guaranteed!

Age _____ Sex _____

Education _____

Place of employment, position _____

Instruction

Express your attitude to the following judgments on a five-point scale. Circle one of the five possible answers that best reflects the truth of the statement:

- 1 – Never
- 2 – Sometimes
- 3 – Difficult to answer
- 4 – Often
- 5 – Very often

Statement	Never	Sometimes	Difficult to answer	Often	Very often
1. How often do you ask the pupil why he/she is sad (sits in silence, does not interact)?	1	2	3	4	5
2. How often do you ask the pupil why he/she is happy (laughs out loud)?	1	2	3	4	5
3. How often do you ask the pupil why he/she shows anger and aggression (stomps his/her feet, screams loudly)?	1	2	3	4	5
4. How often do you tend to ignore the pupil (keep quiet in response)?	1	2	3	4	5
5. How often do you raise your voice at the pupil?	1	2	3	4	5
6. Have you ever said insulting words to the pupil (idiot, fool)?	1	2	3	4	5
7. How often do you hug the pupil?	1	2	3	4	5
8. How often do you tend to show friendly tactile behaviour towards the pupil (pat on the shoulder, shake hands)?	1	2	3	4	5
9. How often do you feel annoyed by the violent expression of joyful emotions by the pupil?	1	2	3	4	5
12. How often did you feel indifferent to the pupil's positive emotions?	1	2	3	4	5
13. How often have you been irritated by the pupil's positive emotions?	1	2	3	4	5
14. How often have you been calm about the negative emotions of the pupil during the classes?	1	2	3	4	5
15. How often did you reinforce the pupil's positive emotions (laughed in response, said words of support)?	1	2	3	4	5

1. Please list the words, emotions and actions with which you react to the unsatisfactory behaviour of the pupil in the educational institution or during classes.

2. Please list the words, emotions and actions of the adolescent in response to your comments.

3. Please list the words, emotions and actions that you use when trying to encourage the pupil.

4. Please describe what words, emotions or actions pupils respond to encouragement.

5. Please describe what forms of positive tactile behaviour you show towards the pupil.

6. Please indicate what forms of tactile behaviour the pupil demonstrates in relation to you.

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