Introduction

Urgency of the problem

The current worldwide trend shows high dynamics of the increase in the number of children with special educational needs (SEN) According to the data of the World...
Health Organization, disabled people account for one tenth of the population, globe, 120 million of them being children and teenagers (Angelova, Le-van & Mantarova, 2016; Akhmetzyanova, 2016). In Europe, recent estimates place the number of children with special educational needs (SEN) at 15 million (European Commission, 2010). Statistics show that each year there is an increase in the number of children with SEN also in the Russian Federation.

One of the difficulties confronting the child with disabilities is socialization. These children’s socialization occurs in fairly small groups, mainly in the family and in the network of special (remedial) institutions. The peculiarities of functioning of organizations concerned with the education and training of children and adolescents with SEN both in retrospect and at present are based mostly on the medico-biological approach and the segregation model. Thus, the socialization of children with SEN currently occurs in relatively homogeneous groups of peers. As early as in the 30-s of the XX century L.S. Vygotsky (1934) noted that despite all the advantages a special school has a major drawback: it restricts its pupils to a micro society, creates a limited living space in which everything is tailored to the peculiarities of the children and does not prepare them sufficiently for real life.

The contradiction is intensified by the trend towards reducing the number of special educational organizations, as well as by the difficulty in implementing inclusive education in Russia to overcome the segregation models and to enhance socialization of people with SEN. These contradictions are noted by S.V. Alekhina (2016): there are changes at the legislative and institutional levels, however, at the socio-psychological level there is a fairly slow acceptance of ideas of inclusion both in the educational community and in the Russian society in general, including families that have children with SEN. Besides, the representatives of most social groups of the modern Russian society are not ready for supporting interaction with people with SEN. At the same time adolescents with SEN only in rare cases have a sufficient level of auto-competence and communicative skills to successfully engage in social interaction.

Thus there is a contradiction between the approaches declared in pedagogy and psychology and the practice of real life of children and adolescents with SEN. In this regard the development of hardiness as a set of patterns (attitudes and skills) to help convert the negative impacts into opportunities can serve, in our opinion, as the basis for the successful adaptation of children and adolescents with SEN in a wide range of social groups and situations. The most important aspect of the study of the phenomenon, reflecting its relevance, is that the components of hardiness develop in childhood and adolescence (Leontiev & Rasskazova, 2006; Maddi, 2006; Akhmetzyanova & Saitgaleeva, 2016).

Despite the sufficient level of knowledge of the component composition, structure and manifestation of hardiness of the individual in various spheres of life, the peculiarities of hardiness of adolescents with SEN have hitherto not been studied. Besides, there are no comprehensive psycho-pedagogical programs of development of hardiness of adolescents with SEN. Therefore, there is a contradiction between the lack of topical research and the demand for the development of both theoretical and applied aspects of the scientific problem of development of hardiness of adolescents with SEN.

The subject of this study is the peculiarities of hardiness of adolescents with special educational needs.

The main hypothesis of the research: there are peculiarities in the levels of expression and relationship of the components of hardiness of adolescents with SEN in comparison with the conventionally healthy peers.

**Methodological Framework**
Literature Review

The analysis of the foreign research and the research conducted in Russia as regards the phenomenon under study showed that the term hardiness was first introduced by S.R. Maddi & S.C. Kobasa (1984). The phenomenon of hardiness is studied from the perspective of existential theory of personality. The theory of S.R. Maddi & S.C. Kobasa (1984) explicates hardiness as a system of convictions about oneself, about the world, about relations with the world. It is a disposition that includes three relatively autonomous components: commitment, control, challenge. Commitment is determined by S.R. Maddi (2002, 2004) as a conviction that commitment to what is happening gives a feeling of fullness of life. Control is a conviction that one's own efforts make it possible to affect the outcome of what is happening. Challenge is a conviction of a person that everything that happens to him contributes to his development through active acquisition of knowledge from the experience and its subsequent application (Maddi, 2002, 2004).


In the Federal Law "On education in the Russian Federation" the following definition is given: "a student with special educational needs is an individual with deficiencies in physical and/or psychological development, confirmed by the psychological, medical and pedagogical commission, that impedes the acquisition of education without special conditions being created". Students with SEN include such citizens of the Russian Federation as deaf, hearing-impaired, blind, visually impaired, students with musculoskeletal disorders, retarded mental development, severe speech disorders, autism spectrum disorders, mental retardation, with special needs in their psychological and physical development, with complex defects.

The European Commission (2013) suggests that children with SEN be classified on the basis of the approach proposed by the Organization for Economic Co-operation and Development (OECD). OECD went further in inviting the 22 countries participating in its ongoing studies of special educational needs (SEN) to reclassify their national categories into a three-category framework (2013). Framework for classification of children with special educational needs (SEN). Category A: disabilities with organic origins where there is substantial normative agreement about the categories (for example, sensory, motor, severe and profound intellectual disabilities). Category B: difficulties that do not appear to have organic origins or be directly linked to socioeconomic, cultural or linguistic factors (for example, behavioral difficulties, mild learning difficulties, specific learning difficulties and dyslexia). Category C: difficulties that arise from socio-economic, cultural and/or linguistic factors; some disadvantaged or atypical background that education seeks to compensate for (European Comission, 2013).

The worldwide practice of working with children with SEN is enshrined in many legislative initiatives. The aims of European policymakers in this area are chiefly supported at an institutional level by the European Agency for Development in Special Needs Education (EADSNE), established in 1996, whose remit is to improve the quality
of special needs provision across Europe by encouraging cross-country collaboration and knowledge exchange. In the Disability Strategy 2010–2020, the European Commission notes 'the strong mandate on the EU and Member States to improve the social and economic situation of people with disabilities', and further underlines 'the aspiration of creating a barrier-free Europe'. Inclusive education is supported by European Commission (2012) funding and promoted jointly by EADSNE and UNESCO.

**Materials and Methods**

During the study the following methods were used:
- theoretical methods: system analysis, synthesis, generalization, theoretical analysis of philosophical, pedagogical, psychological, scientific, methodical and technical literature on the research problem;
- empirical methods: observation, conversations, questioning, psychological testing.

Methods of data collection: questionnaires (to obtain information on the socio-demographic parameters of the sample), observation and conversation, test of hardiness of the individual. Test of hardiness is a Russian language adaptation of the English language questionnaire "Hardiness Survey" worked out by S. Maddi (Leontiev & Rasskazova, 2006).

Methods of mathematical statistics: descriptive statistics, comparative and correlation analysis. The comparative analysis of subsamples was conducted with the use of the Mann-Whitney non-parametric criterion of calculation, the correlation analysis was carried out with the use of Spearman’s rank correlation coefficient calculation.

The experimental site of the research was based in educational institutions of Ekaterinburg. The study involved 146 adolescents in schools, ranging in age from 13 to 17 years. In accordance with the hypothesis the sample was divided into two subsamples: a subsample of adolescents with SEN (hereinafter – SEN) and a subsample of conventionally healthy adolescents (hereinafter – CH) as the control sample.

The subsample of adolescents with SEN was 36 people (31 boys and 5 girls) aged from 13 to 17 years (the average age – 15.05 years). Special educational needs of adolescents in this subsample are conditioned by the following diseases: epilepsy, birth trauma effects, encephalitis effects, neuroinfection, diabetes, various forms of infantile cerebral paralysis. The adolescents with SEN of this subsample are enrolled in grades 7-12 of specialized remedial boarding schools for children with SEN studying adapted programs of basic and secondary general education. They have intact intelligence, there is no visible manifestation of mental pathologies, they move themselves, they do not have serious speech pathologies, they communicate freely.

The subsample of conventionally healthy adolescents served as a control group, making it possible to reveal the specificity of hardiness manifestation of adolescents with SEN. The subsample of conventionally healthy adolescents included 110 people (43 boys and 67 girls) aged from 14 to 18 years (the average age – 15.61 years). The adolescents do not have the status of individuals with SEN, they are enrolled in grades 7-11 of general education schools.

The diagnostics was carried out frontally, in classes, in an environment familiar to the adolescents. The survey participants were guaranteed anonymity and the confidentiality of the results obtained.

The experimental work took place in several stages.
The aim of the ascertaining stage of the experiment was to study theoretically the phenomenon of hardiness of the individual, as well as the approaches to the study of people with SEN.

The forming stage of the research (2014-2015) included the empirical study of phenomenology and the relationships between the components of hardiness of adolescents with SEN in comparison with the conventionally healthy peers.

The third stage (2015-2016) is the perception and systematization of the results obtained, the formulation of conclusions and designing psychological pedagogical program of the development of components of hardiness of adolescents with SEN.

Results

Phenomenology of hardiness of adolescents with SEN and conventionally healthy adolescents

As a result of assessing the indicators of kurtosis and skewness in the total sample and in subsamples it was revealed that the distribution differs from being normal (Gaussian distribution), therefore, when interpreting we will rely on the median value and percentage distribution. The median value in both subsamples on all the components of hardiness are at the average level according to the test standards (refer to Table 1).

<table>
<thead>
<tr>
<th>Parameters</th>
<th>SEN</th>
<th>CH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>15,0556</td>
<td>15,6182</td>
</tr>
<tr>
<td>Std. deviation</td>
<td>1,06756</td>
<td>0,99523</td>
</tr>
<tr>
<td>Median</td>
<td>15,0000</td>
<td>16,0000</td>
</tr>
<tr>
<td>Variance</td>
<td>1,140</td>
<td>0,990</td>
</tr>
<tr>
<td>Minimum</td>
<td>13,00</td>
<td>14,00</td>
</tr>
<tr>
<td>Maximum</td>
<td>17,00</td>
<td>18,00</td>
</tr>
<tr>
<td>N</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

The analysis of indicators of hardiness allowed to reveal quantitative and percentage correlation of adolescents with low, medium and high levels of expression of hardiness components (refer to Table 2). The data in the sub-sample of adolescents with SEN indicate the absence of respondents with high levels of expression of the hardiness components. By commitment and challenge indicators in adolescents with SEN medium expression levels dominate, and by control indicators low level dominates. While in the sub-sample of conventionally healthy (CH) adolescents the average levels of expression of hardiness components dominate; there are teenagers as well with high levels of expression of the components. This indicates that the majority of conventionally healthy adolescents are able to cope with stressful situations, but young people with SEN demonstrate sufficient expression of hardiness components only partially.
Thus, it was found that 22.2% of adolescents with SEN and 38.2% of conventionally healthy adolescents experience a sense of alienation, rejection, the feeling of being "outside" the life.

80.6% of adolescents with SEN feel their own helplessness, they do not believe in the possibility of their influence on the course of events, it seems to them that a lot is happening in their lives against their will and they can change nothing, or almost nothing. This may be explained by the lack of life experience, immaturity, related both to the very nature of the disease, and to the peculiarities of upbringing of a adolescents with special education needs. Perhaps, this may be due to the fact that presence in a peer environment with similar learning problems in a special school develops in the child the skills that do not fully contribute to his socialization and adaptation in society, perhaps being a prerequisite for the formation in the future of a learned helplessness as a strategy of interaction with society. In the sub-sample of conventionally healthy adolescents low level constitutes only 12.7%.

The main objective of the study was to identify the differences in the components of hardness among adolescents with SEN and conventionally healthy adolescents. The analysis of reliability of the differences was conducted with the help of calculation of nonparametric Mann-Whitney U-criterion (refer to Table 3).

Table 3. The results of the comparative analysis of sub-samples of adolescents with SEN and conventionally healthy adolescents (N=146)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value of U-criterion</th>
<th>Level of significance*</th>
<th>Average rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1766,500</td>
<td>0,332</td>
<td>SEN 79,43</td>
</tr>
<tr>
<td>Control</td>
<td>307,500</td>
<td>0,000</td>
<td>SEN 27,04</td>
</tr>
<tr>
<td>Challenge</td>
<td>1134,000</td>
<td>0,000</td>
<td>SEN 50,00</td>
</tr>
<tr>
<td>Common level of hardness</td>
<td>862,000</td>
<td>0,000</td>
<td>SEN 42,44</td>
</tr>
</tbody>
</table>

Note: Correction of the levels of significance was performed by the Bonferroni method.

By commitment indicator significant differences were not found, therefore, adolescents with SEN and conventionally healthy adolescents are focused on their
activity and get pleasure from it, they are mostly to the average degree involved in what is happening and find interesting sides in life.

The remaining components of hardiness are significantly lower in the subsample of adolescents with SEN as compared to conventionally healthy adolescents. Consequently young people with SEN to a greater degree feel their own helplessness, conviction that fight can not affect the outcome of what is happening, conviction is not inherent in them that they can independently choose their own activities, their own way.

Challenge is also significantly lower in the group of adolescents with SEN. They do not believe that everything that happens to them contributes to their development. Adolescents with SEN demonstrate a lower level of the ability to learn from their mistakes and perceive their life experience, whether positive or negative, as a source of knowledge and a basis for improving the behavior and activity. They are less willing to act in the absence of reliable guarantees of success, at their own risk, considering preferable for themselves the desire for simple comfort and security. In general, for them the idea of development through active acquisition of knowledge from new, unfamiliar situations, situations of uncertainty is less acceptable.

The overall level of hardiness is also lower in teenagers with SEN, so they are more vulnerable to feelings of stress and depression, are less ready to confront them, to be proactive and flexible in difficult situations. It is likely that in the stressful situation, they are more inclined to passivity and avoidance.

**Correlation of components of hardiness in subsamples of adolescents with SEN and conventionally healthy adolescents**

The structure of hardiness is studied by identifying the relationship of components of hardiness. The method of studying the relationship was the calculation of the coefficient of Spearman's rank correlation. The results of correlation analysis in subsamples of adolescents with SENare presented in Table 4, of conventionally healthy adolescents - in Table 5.

<table>
<thead>
<tr>
<th>General level of hardiness</th>
<th>Commitment</th>
<th>Control</th>
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<tbody>
<tr>
<td>Commitment</td>
<td></td>
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<tr>
<td>Control</td>
<td></td>
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<tr>
<td>Challenge</td>
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Note: '*' - significant level (p) ≤ 0,000. Correction of the levels of significance was performed by the Bonferroni method.

Only the components of commitment and control are correlated with the general level of hardiness, while challenge shows the lack of relationship (refer to Table 4). Also, all components of hardiness are not linked with each other.

In contrast, in the subsample of conventionally healthy adolescents all components are interconnected, as well as linked with the general level of hardiness(refer to Table 5).

<table>
<thead>
<tr>
<th>General level of hardiness</th>
<th>Commitment</th>
<th>Control</th>
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<tbody>
<tr>
<td>Commitment</td>
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<tr>
<td>Control</td>
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<tr>
<td>Challenge</td>
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</table>

Table 4. The results of correlation analysis in subsample of adolescents with SEN (N=36)

Table 5. The results of correlation analysis in a control sample - subsample of conventionally healthy adolescents (N=110)
Thus, from the study of the relationship of components, we found differences in the structure of hardiness in the subsamples. The results show the deformation of the structure of hardiness in adolescents with SEN, in contrast to the subsample of conventionally healthy adolescents, where the structure of hardiness is harmonious.

**Discussions**

The analysis of research has shown that the study of hardiness of adolescents with SEN had not previously been carried out. There is also a shortage of research of hardiness of conventionally healthy adolescents (Shvareva, 2012; Petrosyants, 2011; Fominova, 2012). The most important aspect of the study of the phenomenon, reflecting its relevance lies in the fact that the components of hardiness are developed in the childhood and partly in adolescence (Leontiev & Rasskazova, 2006; Maddi, 2006).

Conducting this study allowed us to obtain new results on the specifics of phenomenology and structure of hardiness of adolescents with SEN as compared to their conventionally healthy peers.

The data on low rates of expression of the components of hardiness agree with the results obtained in samples of adolescents (Odintsova, 2016), as well as in samples of students with SEN (Shchetinina, 2015; Leontiev, Alexandrova & Lebedeva, 2011; Hystad et al., 2009; Kalinina et al., 2016; Kirilova & Vlasova, 2016; Vlasova, Kirilova & Curteva, 2016). Perhaps this can be attributed to lack of clarity in life prospects and strategy of delay of the semantical choice (Shchipanova et al., 2016). Also, it may indicate the formation of prerequisites learned helplessness adolescents with SEN (Seligman, 1975). In general hardiness as an actual personal resource needed for the successful confrontation of the individual to stressful situations for adolescents with SEN such situations constitute the major part of their vital activity is insufficiently formed.

The obtained results showing the absence of high levels of expression of the components of hardiness and deformation of the structure of the phenomenon are consistent with the hypothesis of L.S. Vygotsky (1934) about the failure of conditions of a correctional school to prepare young people with SEN for the conditions of real life. It is also correlated with the assumption of D.A. Leontiev & Ye.I. Rasskazova (2006) that for the development of such component of hardiness as "challenge" wealth of experience, the variability and heterogeneity of the environment are important.

Thus, in our study reliable differences in the levels of expression and structure of hardiness among adolescents with SEN and conventionally healthy adolescents are revealed. In general, hardiness is more formed in conventionally healthy adolescents. Adolescents with SEN are less resistant to stress, in a less degree are prepared to act actively and flexibly in a difficult situation.

**Conclusion**

The results of the research showed in adolescents with SEN the presence of insufficient ability to resist the pressure of stressful circumstances and prevent the development of symptoms of physical or psychological maladjustment. Therefore, the development of

<table>
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<tr>
<th></th>
<th>Commitment</th>
<th>Control</th>
<th>Challenge</th>
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<tbody>
<tr>
<td>hardiness</td>
<td>0.827**</td>
<td>0.826**</td>
<td>0.592**</td>
</tr>
<tr>
<td></td>
<td>0.509**</td>
<td>0.324**</td>
<td>0.399**</td>
</tr>
</tbody>
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Note: ** - significant level (p) ≤ 0.000. Correction of the levels of significance was performed by the Bonferroni method.
the technologies of psychological support of adolescents with SEN during the period of study in an educational institution both special and secondary when the foundations of personal identity are laid, becomes significant. Based on these data, we are designing psychology-pedagogical programs of the development of components of hardness of adolescents with SEN (the program is currently in the process of approbation). Their implementation will allow to optimize the process of adaptation and socialization of adolescents, and also perform as a preventive maintenance factor in the development of learned helplessness.

The research has opened some new theoretical and practical questions and problems and showed prospects of further study of phenomenology and the structure of hardness of people with SEN.

**Disclosure statement**

No potential conflict of interest was reported by the authors.

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**References**


