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## "SELF-PORTRAIT" GRAPHIC TEST IN PSYCHOLOGICAL DIAGNOSIS OF CHILDREN AND ADOLESCENTS WITH DEVELOPMENTAL DISORDERS

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### Abstract

The article is devoted to the study of picture (graphic) tests in clinical psychology. The use of the "Self-portrait" technique to diagnose in children and adolescents with developmental disorders (mental, somatic) is of great importance. The relationship between the onset and type of mental or somatic illness and the quality of drawing in children and adolescents is being investigated. The purpose is to evaluate the diagnostic parameters of the technique "Self-portrait" (variant of Draw a Person Test) in children with mental and somatic disorders. Participants: 127 patients aged 11-16 years with mental and somatic disorders. Methodology: Test "Draw yourself" ("Self-portrait"). Evaluation parameters: size, type, quality of the picture, deviations of the picture from the vertical. Results: a comparison of mental patients with different diagnoses and somatic patients showed a difference in the nature of the picture: the best results were obtained in somatic patients; the worst ones were found in mental disorders with an early onset (earlier than 10 y.o.). The same result proved obtained as a drawing. Studies show that the drawings of children and adolescents with early onset of mental illness are of the worst quality and type of drawings. In patients with a later onset of a mental disorder, the quality and type of drawings are similar to somatic patients. Self-portrait or self-drawing appears to be a good technique for assessing children and adolescents with various types of developmental disabilities.

**Keywords:** Drawing of Yourself Test, Children, Mental and Somatic Disorders, Development.

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## 1. INTRODUCTION

The use of drawing techniques in psychological research and diagnosis of child development has a long-standing history. Excellent descriptions of various drawings of children with developmental pathologies are found in the works of an outstanding German teacher G. Kerschenshteyner (Kerschenshteiner & Lamprext, 1905-1914). The works of the great Russian psychiatrist V.M. Bekhterev also trace the interest in the development of a child's drawing and its features in disturbed ontogenesis (Bekhterev, 1908). Specific methods were born in the first third of the 20th century: the Goodenough test (1928) (Goodenough, 1928), the Machover test (1949) (Machover, 1949). The pedagogical and clinical-psychological experience of using drawing techniques as a means of work for a psychologist and a teacher is presented in the reviews of Svensen. Drawing tests usually are considered to have a significant diagnostic potential in clinical psychology and have been used in psychological diagnostics for about a century. Cox M.V. writes that children's drawings are used by the authors Koppitz, (1968); Machover, (1949), for diagnosing the level of intelligence or intellectual maturity of a child. Another direction in the use of drawing tests is as the basis for diagnosing personality disorders or emotional maladjustment (Cox, 2013; Koppitz, 1984). Other authors evaluate the socio-emotional characteristics of the child (Eliefja, 1982, Özer, 2010, El-Shafie, 2019, Köste, 2021). The pedagogical and clinical-psychological experience of application of drawing techniques as a projective is presented in the reviews by Swensen, in his assessment of investigations of human figure drawings for the period of 1957-1966 (Swensen, 1968). In modern studies, the "draw a person" method is used in various modifications. However, not all authors see it as a sufficiently reliable and standardized method, with limited use in modern children's clinical psychology. For example, Anna Anastasi recommends the use of drawing methods in diagnostics, but indicates that they are additional, and not basic diagnostic tools (psychological, psychological, and educational, clinical and psychological) (Anastasi & Urbina, 1997; Pollak, 1986, Venger, 2003, Pourahmadi, 2009, Piotrowski, 2015, Shah, 2020).

In Soviet and Russian psychological traditions, these methods are actively applied not only in assessing the cognitive and emotional-personal sphere, but also to identify and qualify the impaired development of a child. Consider the history of the use of projective pictures in Russian clinical psychology. S.A. Boldyreva analyzed the drawings of children of preschool age, diagnosed with schizophrenia (Boldyreva, 1974). Her work analyzed drawings of healthy children of preschool age, artistic creativity of patients with schizophrenia, showed reflection in the pictures of psychopathological disorders of the patients, as well as the nature of the drawings depending on the type of schizophrenia. All this was important for the subsequent treatment and correction work. In the work of A.L. Venger, the projective and cognitive components of the picture are analyzed for different types of dysontogenesis or in the case of psychological trauma (Venger, 2003). These tests may be applied in several aspects: assessment of cognitive, projective, and motor component. The usage of «Drawing of Yourself» technique in diagnosis of children and adolescents with impaired development (mental, somatic) is very important. We suppose to investigate connection between the beginning of mental or somatic illness and the quality of drawing in children and adolescents (Koval-Zaitsev & Zvereva, 2010).

The purpose of this study is to assess the possibilities of applying the "Drawing of yourself" technique to a clinical and psychological study of children and adolescents with impaired development (mental or somatic illness).

## 2. MATERIALS AND METHODS

### 2.1. Participants

The study was conducted at the Mental Health Research Center (Children's Psychiatric Department) - Groups 1- 2, and at the somatic outpatient hospital -Group 3.

The criteria for inclusion in the group 1-2 were 11-16 age, the presence of schizophrenia disorders (F20, F 21) with both early and late onset of the disease, boys and girls were the patients in a psychiatric hospital.

Exclusion criteria: acute psychotic state, the presence of a current organic brain disease, age before 11 and after 16 years.

The criteria for inclusion in the group 3 were age, boys and girls, somatic disorders.

Exclusion criteria: mental disorders, the presence of a current organic brain disease, age before 11 and after 16 years.

Group 1 (G1) 58 (11-16 y.o., mean age 12,7; 37 boys) with early onset of mental disorders, earlier than 10 y.o. Group 2 (G2) 55 (11-16 y.o. mean age 13,7; 23 boys) patients with the beginning of mental disorders later than 10 y.o. The subjects in G1 and G2 were the patients of the child psychiatry clinic of MHRC. G1 and G2 were divided into subgroups diagnosed with schizophrenia and schizotypal disorder (F20, F21 - SchD) and those with other mental disorders (F40, F30, F07 - OMD). Group 3(G3) 17 (5-16 y.o., mean age 11,4; 10 boys) - patients of the somatic outpatient hospital with somatic disorders (intracranial hypertension, bronchial asthma and some other diseases). The patients in G1 and G2 were observed in the hospital, the patients in G3 - in the outpatient clinic. All study protocols are stored in the MHPC and Pirogov Russian National Research Medical University (RNRMU), the presented material reflects the generalized statistical data analysis. This form of data presentation has been approved by the ethics committee to maintain confidentiality (Piotrowski, 2015).

### 2.2. Method

We used technique «Drawing of Yourself» (as a variant of self-portrait) test according to traditions of Russian clinical psychology with a predominantly qualitative analysis of the data obtained, without the use of a projective and psychoanalytic component, but based on a number of formal parameters that are usually used in domestic research (Venger, Koval-Zaitsev and Zvereva). Procedure: equipment sheet of A4 format and a simple pencil (soft); in the somatic clinic, children could also use colored pencils. The implemented two types of instruction: «Draw yourself» (for G1, G2, child psychiatry clinic); «Draw a house, a tree, a man» (for the G3, somatic outpatient hospital).

Evaluation parameters: size, type, quality of drawing (rating from 1 to 10), deviations of drawing from the vertical. We use these parameters to avoid psychoanalytic trends in interpretation of data in contemporary works (Burkitt, 2004). Evaluation parameters included the working of experts (psychologists and masters) for all types of assessment. The quality of the picture was estimated on a 10-point scale (1 - the worst, 10 - the best). The size is represented by three - large, medium, and small (in relation to the size of the sheet). The type of image is represented by three (in accordance with the logic of AL Venger): plastic, mixed, and schematic. Deviation from the vertical meant the presence of a "drop" or "inclination" of the drawn figure to the side (whether it is right or left).

We use SPSS v.21, U-criteria Mann-Whitney, F-criteria, regression analyze.

So, we compare the following data:

1. Comparative difference between boys and girls in assessing parameters of drawing (quality of picture, size, type of image and deviation from the vertical) in G1, G2 and G3; in diagnostic group (SchD and OMD)
2. Comparison of G1, G2 and G3 according to the assessment of the age of the patient, the parameters of drawing and the age of mental disorders and in regression onset analysis.

### 3. RESULTS

#### 3.1. First item

Comparing boys and girls in the parameters quality of the picture (see Table 1 and Table 2) we obtained significant difference between boys and girls in all parameters of drawing in groups with mental disorders. Patients with somatic disorders have no difference in boys and girls.

Group	Boys	Girls	Significance(Mann-Whitney)
<b>Average meaning of quality of picture in G1, G2 and G3</b>			
G1	4,2	5,6	$p \leq,000$
G2	5,6	7,4	$p \leq,000$
G3	6,7	7,1	$p \leq,681$

*Table 1. Average meaning of quality of picture in G1, G2 and G3*

Group	Size	Type of image	Deviation from the vertical
G1	$p \leq,031$	$p \leq,031$	$p \leq,031$
G2	$p \leq,000$	$p \leq,000$	$p \leq,031$
G3	$p \leq,918$	$p \leq,606$	$p \leq,142$

*Table 2. Difference between boy and girls in size, type of drawing and deviation figure from the vertical (significance Mann-Whitney u test)*

One of the objectives of the study was to analyze the peculiarities of drawings in children with schizophrenia spectrum disorder in comparison with other mental disorders and the somatic ones. The results of this are presented in Table 3.

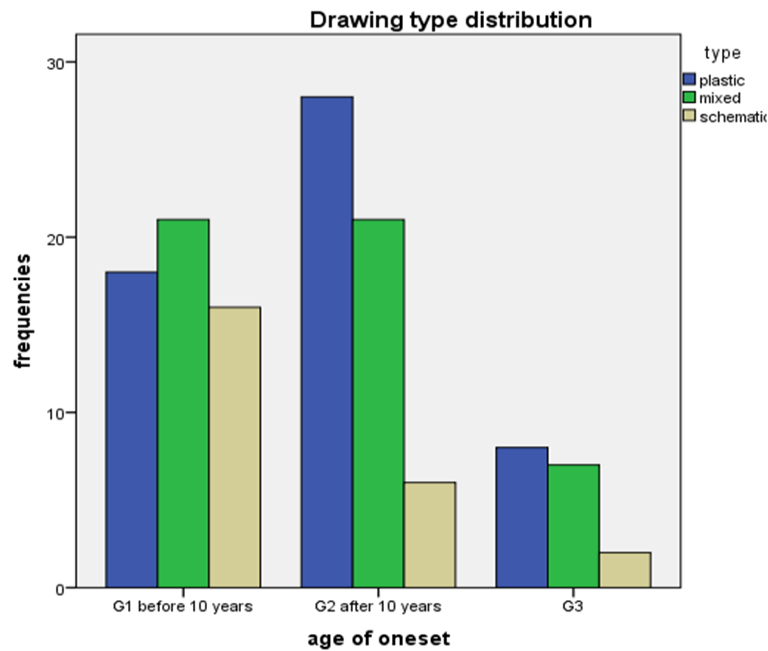
Group	Quality of Picture	Size	Type of Image	Deviation from the Vertical
SchD	$p \leq,016$	$p \leq,820$	$p \leq,032$	$p \leq,940$
OMD	$p \leq,016$	$p \leq,820$	$p \leq,032$	$p \leq,940$
Somatic	$p \leq,681$	$p \leq,918$	$p \leq,606$	$p \leq,142$

*Table 3. Parameters of drawing in diagnostic group (all SchD and all OMD in G1 &G2, somatic)*

#### 3.2. Second item

We used the "drawing type" parameter in accordance with the point of view of AL Venger. There are three options for drawing types: scheme, mixed and plastic (from simple to complex). They have their own age dynamics. It is important to understand

whether the age dynamics of the parameters of the drawing of children is the norm of development and in mental pathology and developmental disorders. We observed a significant difference in G1 and G2 in representation types of drawing (images). It is evident in Figure 1: in G1 schematic type is more frequent than in G2 ( $p \leq 0,01$ ,  $\varphi = 2,449$ ). The plastic type of drawing in G2 is more common than in G1 ( $p \leq 0,05$ ,  $\varphi = 1,951$ ). G2 and G3 have no distinctions.



**Figure 1.** Distribution of types of image in the groups compared

According to the regression analysis model, the age of the disease onset explains 16% of the variance in quality of drawing. The model involving the age of the onset of the disease, the present age and sex of the subjects explains 34% of the variance in quality assessment of the drawing.

The group of children with somatic pathology (G3) did not differ from the normative drawings (Wenger) but had features associated with projection of the underlying disease on the image structure. This was seen in the qualitative analysis. However, in order to draw a conclusion on the projection of the disease on the features of the self-drawing, the quantitative composition of the group is small, and this requires further research in this direction.

#### 4. DISCUSSION

Most of the studies using the "Draw a person" test have been carried out in the framework of school and developmental psychology, somewhat less work on the evaluation of clinical groups. In the course of the studies, the most important to us were the studies using drawings of children with ASD and ADHD (Young, 2020) as it demonstrated the fact that children with disabilities usually perform worse on the Draw a Person test than their healthy peers.

Our results confirm the issue highlighted by the data that only the group of children with somatic pathology demonstrated no differences between boys and girls, normal and somatic pathology in terms of the assessed parameters. At the same time, in children with

disorders of the schizophrenic circle, a definite correlation was found with the diagnosis (disorders are more pronounced in schizophrenia) and with the age of the onset of the disease (before and after 10 years). Difficulties in discussing our results are broadly due to several studies with the "Draw Yourself" test in child clinical psychology (Koppitz, 1984; Anastasi & Urbina, 1997). Our data are broadly similar to those of other studies on the development of drawing ability in children in general (Kershenshteiner & Lamprext, 1914; Bekhterev, 1908; Goodenough, 1928; Machover, 1949; Cox, 2013; Koppitz, 1984; Pollak, 1986; Koval-Zaitsev and Zvereva, 2010). In a study conducted on a sample of normal adolescents and children with deviant behavior (Pourahmadi, 2009), as well as in children with ASD and ADHD, it was shown that these groups of children differ significantly in standardized assessment parameters (Aghababaii, 2013, Young, 2020, Trevisan, 2020). We used qualitative assessment parameters in their numerical expression and have obtained similar data in the group of children with schizophrenia pathology but did not receive this evidence in the group of children with somatic pathology. Our study makes it possible to distinguish between the drawings of children with early and late onset of diseases. The data have been obtained, and that makes it possible to differentiate patients with different diagnoses, relying on the selected parameters of the figures, primarily image quality and image type. We have received very interesting results about the features of drawing by children with somatic disorders, and their study should be continued. We can follow a more complex statistical procedure by expanding the sample, especially in groups with somatic patients. The data obtained with the use of the "Draw yourself" test, however, allow us to draw some conclusions. In the course of the studies, the most important for us were the studies using the drawing of children with ASD and ADHD (Aghababaii, 2013, Young, 2020) which showed that children with disabilities usually perform the Draw a Person test worse than their healthy peers.

Our results confirm these data - only in the group of children with somatic pathology there are no differences between boys and girls, the norm and somatic pathology in terms of the assessed parameters. At the same time, children with disorders of schizophrenia spectrum showed a certain correlation with the diagnosis (with schizophrenia, the disorders are more pronounced), and with the age of onset of the disease (before and after the age of 10).

We used the qualitative assessment parameters in their numerical expression and obtained similar data in the group of children with schizophrenia pathology but did not receive this in the group of children with somatic pathology. Our study allows differing drawings done by children with early and late beginning of diseases. We obtained the data that allowed us to differentiate the patients with different diagnoses, based on the selected parameters of the figures, primarily the quality of the image and the type of image. We obtained very interesting results about the specific features of drawing children with somatic disorder and their investigation must be continued. We can follow a more complicated statistical procedure by expanding the sample, especially in groups with somatic patients. The data obtained due to using "Drawing of yourself" test, nevertheless, allow us to arrive at some conclusions.

## 5. CONCLUSIONS

1. Drawings of girls with mental disorders are better than those of boys (picture quality parameter). However, there are no such differences in the group of somatic disorders.



2. Girls use a plastic type of drawing more often, and boys usually prefer a schematic image method. According to the method, there are no differences between boys and girls for somatic disorders.
3. Girls with schizophrenia spectrum disorders demonstrate the average size of drawings more often, boys – small. For other psychiatric diagnoses and somatic diseases, there is no difference in size of drawings between boys and girls.
4. The age of onset of mental illness is related to the quality of the drawings: a higher score for those who fall ill after the age of 10. According to the type (method) of the image – the one who has earlier onset of illness often uses a schematic image.
5. The data obtained require attention to the application of the technique of drawing itself and expanding its usage in clinical and psychological research.

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