Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 7, 1670-1681

Emotional-Behavioral Reactions And Psychosomatic Experiences Of Patients With Leukemia As An Internal Picture Of Disease In Uzbek Population Children

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Abstract: The problem of internal picture of disease (IPD) in children with acute leukemia (AL) has not only medical, but also psychological aspects. The psychological study of the personality characteristics of a sick child is one of the ways to reveal the IPD.
The purpose of this research work: to study and analyze the clinical and psychological characteristics of IPD and personality in patients with acute leukemia in children of the Uzbek population to optimize psychotherapy, psychocorrection and the processes of their medical and social rehabilitation.
Material and Methods: 41 children aged from 7 to 15 years with acute leukemia were examined. The examination program included: experimental, medical and psychological examination of the emotional personal sphere.
Results: in patients with AL children of the Uzbek population, the level of personality neuroticism is increased. A complex and dynamic structure of the internal picture of the disease is formed. As a rule, it negatively affects the behavior and mental state of children, interferes with the treatment process and even more maladjusts patients. Such stable personal characteristics as emotional-volitional instability, passivity, self-doubt, lack of sociability, dependence on others, reduced opportunities for social adaptation skills have been identified.
Conclusions: The identified personality characteristics significantly reduce the resistance to frustration in a sick child and determine his behavior at the stages of the treatment process. The used psychodiagnostic methods of examination make it possible to determine the psychological characteristics of a sick child, which makes it possible to carry out differentiated psychotherapeutic and psychocorrective work with patients with AP and are of great importance for optimizing the process of their medical and social rehabilitation.

Keywords: acute leukemia, children, personality, psychology, emotionality.

Introduction: The development and course of the disease, the effectiveness of medical and social rehabilitation are significantly influenced by the internal picture of the disease (IPD), i.e. the reflection of the disease in the patient's experiences [1, 2, 3, 4, 5]. The formation of IPD in children differs from that in adults and the more the younger the child [6]. Its main components in children include objective manifestations of the disease, its duration, the features of the emotional response of a sick child to the course of the disease, the level of intellectual functioning, the degree of his awareness of the disease, the presence of side stressors. The problem of IPD in children with acute leukemia (AL) has not only medical, but also psychological aspects [7, 8, 9, 10, 11, 12, 13, 14].

Depending on the content of the IPD, it can be either a positive or a negative factor. It affects the manifestations of the disease and its course, family relationships, academic performance, the general mental state of the child, often being the cause of mental conflicts, sometimes leading to neurotic layers that join the psychosomatic disease [15].

In recent years, due to the success of treatment, the life expectancy of children with leukemia has increased. At the same time, frequent and prolonged hospitalizations, separation from parents, debilitating chronic illness, massive and intensive treatment create a very complex structure of IPD, the formation of which largely interferes with treatment and socially maladapts the child [16,17]. Psychological study of the personal characteristics of a sick child is one of the ways to reveal the IPD.

The purpose of the work: to study and analyze the clinical and psychological characteristics of the IPD and personality in children with acute leukemia of the Uzbek population for the optimization of psychotherapy, psychocorrection and the processes of their medical and social rehabilitation.

Materials and methods: 41 children aged 7 to 15 years with acute leukemia in the active phase – 22 children (3 of them in the terminal stage) and 19 children in clinical and hematological remission were examined. The data obtained during the examination were compared with the characteristics of teachers, data for each patient.

To study the individual typological and personal characteristics of children, in addition to clinical and pedagogical observations, traditional experimental psychological methods were used, allowing the most differentiated approach to the analysis of the personality of a sick child. All experimental psychological methods included in the psychodiagnostic complex were adapted and re–standardized in the socio–cultural conditions of the Fergana Valley region of the Republic of Uzbekistan [18].

Results: From the presented data (Table. 1) it follows that the sociability index – "extraversion – introversion" (13.5±0.4 and 13.1± 0.35; P<0.05 in boys and girls) is reduced in patients with OL. Taking into account these personal characteristics of patients, it is necessary to ask them questions more specifically and purposefully, which makes it possible to identify numerous complaints that are important symptoms of the disease. The indicator of emotional instability (neuroticism) in sick children was significantly increased, especially in sick boys. (14.6± 0.7 and 13.7± 0.4 in boys and girls). The children were reluctant to make contact. Many children, for example, when asked if they have any pain, often answer in the negative.

Table 2. provides data on the examination of sick children with AL by the Kettel method [19]. The results of the survey on the Eysenck questionnaire [20] and the Kettel questionnaire reflecting the specific personal characteristics of sick children coincide in many factors, which is confirmed by a high correlation between the personal factor "A" and "Extraversion-introversion" (r=+1.0) and factor "C" and neuroticism with a positive correlation (r=+1.0). For example, in patients with AL, there was a significant tendency to decrease ratings for factors reflecting the level of sociability and emotional stability (factors "A" and "C" 3.8±0.1 and 4.3±0.2 in boys and girls, P < 0.001). In sick boys, there were significantly (P<0.001) low scores on the "E" factor (2.3±0.1 and 3.2±0.15 in boys and girls), reflecting conformity, obedience, increased dependence on adults and children, passivity. A reliably high score on the "D" factor of 6.2 ± 0.4 and 6.0±0.5 (P<0.001) make them emotionally unbalanced, unrestrained. A high assessment of this factor in patients suggests increased excitability or overactivity to weak provoking stimuli. They are characterized by distraction, insufficient concentration of attention. The tendency to decrease the scores for

factor "H" of 3.4 ± 0.3 and 4.0± 0.3 (P>0.05) in sick children emphasizes their greater shyness, increased sensitivity. The factor "Q" and Q4 (7.5±0.3; 7.5±0.4 and 7.2±0.1; 7.0±0.5 P<0.001) reflect the degree of internal conflict associated with the child's life failures. Sharply increased scores in patients with OL by the factor "Q4" allow us to talk about their propensity to hypochondria, phobias, increased anxiety, which is the basis for the emergence of neuroticism. Increased scores for the factor "Q4" of 7.2±0.1 and 7.0±0.5 (P<0.001) indicate the predominance of nervous tension in the behavior of patients. Patients may have violent emotional reactions of irritation for a minor reason, a lowered mood background, patients were easily brought out of mental balance. Based on the results of the study of 12 main Ketell factors, we present an average type of personality profile of sick children of AL. As can be seen from Fig. 1 the average profile of children with AL significantly differs from that of a healthy population of schoolchildren.

The profile curve of this group of patients is characterized by pronounced "scales" and "dips", which clearly characterizes the personality characteristics and the actual mental state of children with AL.

The pronounced "peak" on the scale of factor "Q" and no less pronounced "peaks" of factors "Q4", "D", "G" reflect the degree of neuroticism of a sick child. "Failures" on the scale of factors "A", "C" and "D" indicate a tendency to autistic personality. The emotional state of children with AL can be characterized as a state of increased irritability and emotional lability. In general, the profile curve indicates the predominance of nervous tension in the behavior of AL children. As can be seen from Table 2. and the curve of the personality profile of AL children, there are some gender differences in the response to the disease, and they manifest themselves in the fact that girls adapt faster to their new living conditions and their emotional processing is more objective. These features do not contradict the generally accepted ideas that girls form social maturity earlier, they cope better with everyday tasks. In general, the data obtained by the Eysenck and Ketell method indicate a fairly high level of personality neuroticism in AL. In order to predict the behavior of patients in frustrating situations, we investigated the stable characteristics of their frustrating reactions (individual reactions to various kinds of barriers blocking their activities). An adapted and re-standardized children's version of the Rosenzweig methodology was used.

In patients with AL, compared with healthy children, the number of non-accusatory reactions was reduced (9.6± 0.6 and 9.5±0.9 in girls and boys), which indicates an inadequate response to frustration (Table 3). In sick children, compared with healthy children, the number of self-accusatory reactions was significantly increased (5.21±0.28 and 5.5±0.29; P<0.001). The analysis of response types revealed that in children with OL there is a significant decrease in the number of obstructive dominant (6.8±0.5 and 4.9±0.6) and self-protective reactions (9.5± 0.4 and 9.4±0.9; P<0.05), which is an indicator of a person's strength or weakness. As it was said, a high percentage of these reactions are characteristic of emotionally mature, self-confident children, a low percentage characterizes the inner helplessness of the child, the inability to cope with life's difficulties. In patients with OL, the resolving type of response is clearly increased (7.7±0.5 and 9.8± 0.3; P<0.001). The type of reaction takes the form of a demand for help from others. If the child undertakes to solve the situation himself, then, as a rule, it happens passively or he believes that time and the course of events will lead to him by themselves.

The most common method of personality research is the Rorschach method [21]. According to the literature, only in the USA about 1 million people are examined annually using this method.

The Rorschach method characterizes the inner psychological sphere of an individual,

while most clinical diagnoses are based on "open" behavior. Overcoming this contradiction becomes possible with a thorough clinical diagnosis based on long-term observation and objective research data. Often, the Rorschach method reveals a degree of personality disorganization that ordinary observations cannot detect. This is the greatest practical advantage of the method as an auxiliary diagnostic tool. Analyzing the results obtained using the Rorschach method in patients with AL children, we can note an overall increase in productivity (R) Table. 4. The differences in the number of holistic (W) interpretations of patients with AL and healthy are statistically significant 9.1±0.8 and 10.4± 0.4. (P< 0.05). Patients with AL have more holistic (W) interpretations of the stimulus material. Considering that the total number of responses in patients with AL is significantly higher than in healthy ones, we presented these indicators as a percentage of the number of responses. In this case, it turns out that the percentage of W – interpretation in patients with AL is lower (comp. 59% and 73%) table. 4 and 5.

Discussions of the results obtained: Thus, a generalizing approach to the interpretation of weakly structural material is most inherent in patients with AL and differences in the number of holistic interpretations in the direction of increase do not correspond to reality, which is confirmed by the analysis of determinants. In the group of patients with AL, some features of shaping, or "clarity of perception" were revealed. In this group, there is a distinct decrease in positive "F +%", with an increase in negative forms of "F -%" (P<0.001). Patients are characterized by frequent interpretations of large details of the stimulus material "D" (P>0.05), and then on its basis to give a generalizing interpretation. There is a decrease in the number of popular (Ror) interpretations and the absence of original (Orig) answers, which fits into the syndrome of "non-standard" actualized properties and signs in the study of thinking. Creative, intellectual productivity (M) in sick children with OL does not suffer (0.4 and 0.25, respectively, in sick and healthy).

The results of the analysis revealed in patients with AL a tendency to increase in comparison with healthy, the number of interpretations of plant content (Pl = 4.85% and 6.5%, P>0.05, respectively, in healthy and sick) "inanimate objects" (Ats), (Ats = 7.3% and 14.5%, P>0.01 in healthy and sick) and anatomical content responses (Anat = 5.7% and 8.0%, P>0.01 in healthy and sick people). These results, along with a decrease in the number of popular interpretations, the absence of original answers, a large number of W –answers and details ("D") of the stimulus material, obviously reflect the internal state of the personality of a patient with AL and in all probability are specific signs. In patients with AL, this ratio of 1.12: (5.1 ± 0.6) is right-sided and, consequently, their affectivity is assessed as unstable and the possibilities of adaptation to the environment, possibly to physical and psychological changes that have arisen as a result of AL are weak. The analysis of the study of the types of experience in AL (Table No. 6) showed that the majority of patients belong to the extratensive type of experience (77.9%±6.47; P<0.001), and the minority to the cooperative (12.5%±5.16; P<0.001), introversive and ambivalent tendencies were found only in 4.8%±3.3, respectively examined. As can be seen from the figure, the type of experience with OL is generally expanded.

In the extended type, the largest proportion belongs to the extra–intensive egocentric type (73.1%), whose activity is completely determined by external motives. Kinesthetic interpretations were observed in 12.4% of the examined patients and only in 2.4% they quantitatively exceeded the color responses. As can be seen, the introversive orientation is not noticeably pronounced in the patients we examined, and only 12.5% of the examined patients with a tendency to coartivity (narrowed) are socially more adapted.

Thus, the analysis of the content of the interpretations of patients with AL shows a general increase in productivity (R), more holistic (W) interpretations of the stimulus material, the inherent generalizing approach to the interpretation of weakly structural material. There is a decrease in the indicator of positive forms "F +," an increase in negative "F –", frequent interpretations of large details "D", the absence of original (Orig), a decrease in the number of popular (Ror) answers, a tendency to increase the interpretation of the "plant" content of "Rl", "inanimate" objects (Ats) and answers “anatomical” (Anat) content. FC ratios: (CF + C) on the right side, the predominance of an extratensive type of experience, more color than kinesthetic responses. The obtained results of the study of the personality of sick children with AL by the Rorschach method allow us to draw the following conclusions: for sick children with AL, reproductive thinking is more characteristic than creative thinking, labile affectivity, superficial contacts with the environment, which are neurasthenic signs.

Conclusions: thus, in patients with AL children of the Uzbek population, the level of personality neuroticism is increased. A complex and dynamic structure of the internal picture of the disease is formed. It, as a rule, negatively affects the behavior and mental state of children, interferes with the treatment process and even more maladapts patients. Such stable personal characteristics as emotional and volitional instability, passivity, self–doubt, lack of communication, dependence on others, reduced opportunities for social adaptation skills were revealed.

This significantly reduces the patient's resistance to frustration and determines his behavior at the stages of the treatment process. The psychodiagnostic methods of examination used make it possible to determine the psychological characteristics of a sick child, which makes it possible to carry out differentiated psychotherapeutic and psychocorrective work with patients with AL and are of great importance for optimizing the process of their medical and social rehabilitation.

Table 1. **Average scores of indicators (in points) according to the Eysenck questionnaire in children of the control group and patients with AL (M±m).**

Indicators	Standardization data		AL patients	
	М	Д	М	Д
Extraversion – Introversion	15,1±0,4	14,3±0,4	13,5±0,4*	13,1±0,35*
Neuroticism (psychoemotional instability)	12,6±0,5	13,3±0,5	14,6±0,7*	13,7±0,4*

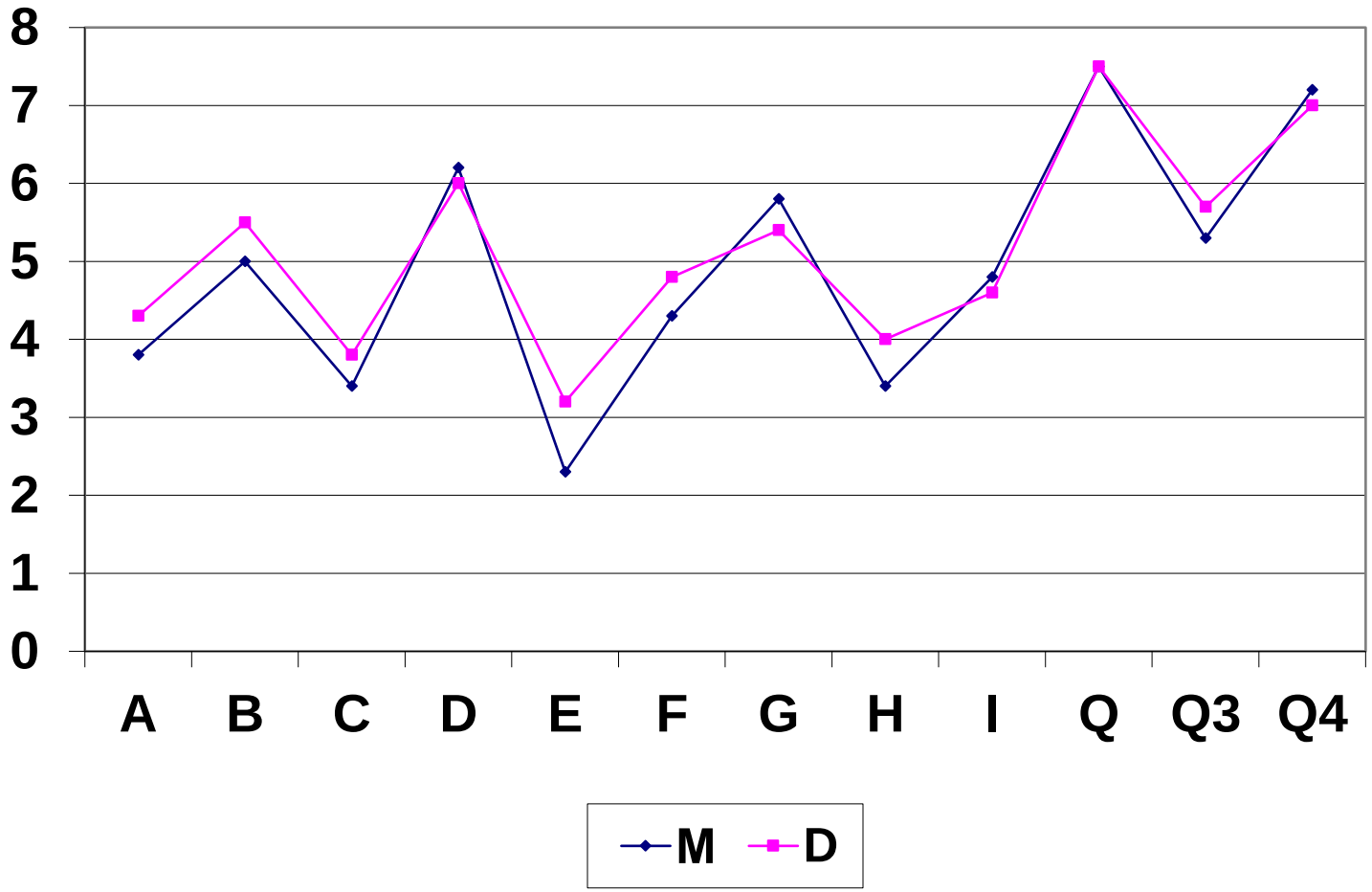
Marked with an asterisk (*) - significant differences in relation to healthy P<0.05-0.001.

Table 2. Average values of Kettell personality factors in AL patients (M±m).

Group investigated	Sex	Факторы личностных свойств A	B	C	Д	E	F	G	H	I	Q	Q 3	Q4
Acute leukemia	Boys (25)	3,8* ±0,1	5,0 ±0,25	3,4 ±0,2	6,2 ±0,4*	2,3 ±0,1*	4,3 ±0,4	5,8 ±0,25	3,4 ±0,3	4,8 ±0,25	7,5 ±0,3*	5,3 ±0,4	7,2 ±0,1*
	Girls (16)	4,3 ±0,2*	5,5 ±0,3	3,8 ±0,4	6,0 ±0,5*	3,2 ±0,15	4,8 ±0,4*	5,4 ±0,3	4,0 ±0,3	4,6 ±0,3	7,5 ±0,4*	5,7 ±0,4	7,0 ±0,5*
Stardardization data	Boys (239)	6,0 ±0,4	5,0 ±0,27	4,34 ±0,42	4,2 ±0,13	3,64 ±0,35	4,64 ±0,25	4,7 ±0,15	5,53 ±0,27	5,6 ±0,3	4,6 ±0,26	5,48 ±0,2	4,0 ±0,3
	Girls (230)	6,0 ±0,3	5,4 ±0,29	3,9 ±0,9	2,8 ±0,42	3,0 ±	3,0),3	5,7 ±0,16	5,4 ±0,23	5,4 ±0,2	4,9 ±0,27	6,1 ±0,42	4,1 ±0,3

Marked with an asterisk (*) - significant differences in relation to healıny ᴩ<ᴜ.05-0.001.

Figure 1.



The average profile of personal characteristics of AL cl bek population.

Table 3. Variants of emotional response of healthy and sick OL Uzbek population in conflict situations

Group investigated	Sex	Направленность реакции			Тип реагирования		
		E Outwardly accusatory	I Self-accusatory	M Non- accusatory	ОД Obstructive dominant	ЕД Self-defending	IP Permissive
AL patients	Boys (25)	9,6±0,6*	7,8±0,5*	6,5±0,5	6,8±0,5*	9,5±0,6	7,7±0,5*
	Girls (16)	9,5±0,9	9,0±0,6*	5,2±0,6	4,9±0,6*	9,4±0,9	9,8±0,3
Standardization data	Boys (207)	11,07±0,5	5,21±0,28	8,43±0,46	7,51±0,47	10,7±0,51	5,58±0,29
	Girls (211)	10,16±0,45	5,5±0,29	8,32±0,49	7,2±0,45	10,3±0,52	6,48±0,28

Marked with an asterisk (*) - significant differences in relation to healthy P<0.05-0.001.

Table 4. Average values of Rorschach indices in sick and healthy schoolchildren of the Uzbek population.

Indicatiors	Determinants of interpretation																
	R	W	D	M	CF	FC	C	F	F+	F-	F±	H	Hd	A	Ad	Dd	Do
AL patients																	
Mcp.	16*	9,1	6,7	0,4*	5,5	1,3	0,6	15,1*	7,5	8*		1,0	0,32	9,3	0,5	1,2	1,4
	17*	10,4	6,5	0,25*	7,1			16*	8,2	8,7*		0,8	0,25	8,9	0,6	0,4	0,8
&	5,6	4,0	4,6	0,5	4,3	2,8	1,0	5,6	2,5	4,8		0,7	0,25	4,6	0,7	0,5	0,6
	5,9	3,1	3,4	0,3	3,4			4,2	2,8	4,5		0,8	0,3	3,4	0,6	0,3	0,6

±m	1,1	0,8	0,9	0,1	0,9	0,6	0,2	1,1	0,5	1,0		0,1	0,05	0,9	0,15	0,1	0,2
	1,5	0,8	0,9	0,07	0,9			1,0	0,7	1,7		0,2	0,07	0,9	0,1	0,1	0,2
Standardization results																	
Mcp	10	7,35	8,35	0,75	2,2	0,19	0,55	9,6	6,8	2,55	0,3	0,9	0,07	5,1	0,6	0,6	0,5
	10,3	7,4	2,7	0,85	2,9	0,17	0,55	10,1	7,55	1,7	0,3	0,75	0,1	4,7	1,5	0,15	0,6
&	1,9	1,7	2,1	0,35	1,65	0,4	0,35	2,0	2,1	1,2	0,3	0,45	0,1	1,35	0,19	0,45	0,4
	2,35	1,9	2,15	0,3	1,65	0,35	0,2	2,07	2,5	1,3	0,2	0,7	0,4	1,8	0,22	0,35	0,37
±m	0,4	0,4	0,45	0,11	0,35	0,08	0,25	0,45	0,45	0,3	0,04	0,09	0,09	0,35	0,04	0,07	0,12
	0,45	0,4	0,45	0,9	0,4	0,08	0,12	0,5	0,6	0,3	0,5	0,19	0,08	0,4	0,06	0,07	0,06

Note: The numerator shows the indicators of boys, the denominator – girls.

Marked with an asterisk (*) - significant differences in relation to healthy P<0.05-0.001.

Table 5. Personality types (experiences) in AL patients and healthy Uzbek population (in%).

Type of experience	AL patients	Healthy
1. Extra-intensive	77,9±6,47*	58,35±2,25
A) clean	73,1±6,92*	55,8±2,27
B) mixed	4,8±3,33	2,6±0,72
2. Introversive	4,8±3,33	6,3±1,11
A) clean	2,4±2,39	4,55±0,95
B) mixed	2,4±2,39	1,7±0,59
3. Ambiequal	4,8±3,33	6,1±1,10
4. Apartment	12,5±5,16*	29,25±2,08

Marked (*) - statistically significant in relation to a healthy population

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