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Children's well-being and expectations before planned surgery

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Abstract

Introduction and Objective. The need for surgical treatment causes a psychological burden in children and is a source of fear and anxiety, which may hinder the procedure and recovery. The aim of the study is to assess the well-being of children before surgery, paying attention to anxiety and anger, and to learn about their fears and expectations.

Materials and Method. The research was conducted among 112 children aged 11–16 (average age 13.5±2.6) waiting for surgery in 3 departments (surgery, laryngology and orthopaedics) of USD in Lublin. The research used the Overt Anxiety Scale (SJN) 'What Are You Like?', the Anger Expression Scale (SEG), and a self-designed questionnaire.

Results. Most children waiting for surgery had a reduced sense of security (90.0%) and felt anxiety (55.4%), anger and nervousness (50.0%), mainly due to the lack of information. Nearly all children (92.9%) experienced pre-operative anxiety. The majority of participants characterized their anxiety as mild (44.6%), while the remaining respondents classified it as moderate (28.6%) or severe (19.7%). The factor that additionally reduced well-being was the parents' anxiety, and the sight of other sick children after the procedure. The presence of parents and the kindness and understanding of the staff had a positive impact on the emotional state of the respondents. The children were afraid of pain and limited activity. They expected information about limitations before and after the procedure, pain management and quick recovery.

Conclusions. Children and adolescents in the pre-operative period require psychotherapeutic interventions and information support from medical staff, which may contribute to reducing their anxiety and have a positive impact on their recovery.

Key words

children, surgery, anxiety, well-being, expectations

INTRODUCTION

Hospitalization of a child, especially due to the need to perform a surgery, causes not only physical problems related to the specificity of the disease, but above all, psycho-social problems related to the child's age, level of development, gender, prolonged hospital stay, and numerous individual factors [1]. Concerns about surgical intervention may be aggravated by related individual factors such as unfamiliar surroundings, separation from parents, fear of unknown people or fear of needles and other procedures, prolonged fasting, fears of the unknown, pain associated with procedures, suffering of the child, or no less important, difficulties in playing their favorite game, spending time with peers or learning [2]. The child often does not understand the situation in which he/she finds himself/herself, which is a source of anxiety and fear in over 60% of children [1]. Up to 80% of children feel threatened and show dissatisfaction and anger [3].

Anger is a negative emotion characterized by antagonism towards someone or something and is rooted in judgment. Expression of anger is a form of expressing internal states aimed at signalling needs and frustrations. Anger is one of the most easily recognizable emotions due to its strong expression and possible consequences for the individual and the environment. Faces expressing anger are identified most precisely and quickly among other emotional states [4]. As an emotional component of aggressiveness, anger may be a consequence of frustration, a sense of unfair treatment, humiliation, or difficulties on the way to achieving a set goal [5]. Anger is common in people with pain, especially those with chronic primary pain. Most anger-related variables had significant positive correlations for pain and disability. Several factors have been identified in the relationship between anger and pain, such as state and trait anger and the style of coping with anger. State anger refers to the mental state of experiencing subjective anger with activation of the autonomic nervous system, and trait anger refers to individual differences in the frequency of state anger over time. Anger coping style is the degree to which people in pain display, suppress, or regulate the expression of anger. Each of these styles is called, respectively, anger out, anger in, and anger control.

The perception of injustice includes elements of the assessment of the situation, i.e. the irreversibility of the loss, the seriousness of the situation, the feeling of guilt and injustice in relation to the situation of illness, the need for treatment and its consequences (e.g. pain, suffering, isolation). The current systematic review found a significant relationship between perceived injustice and pain, and identified patterns of associations between anger and pain, that is, when anger may predispose, exacerbate, be a consequence of, or maintain pain [6].

It is also worth noting that the study did not demonstrate consistency in the assessment of emotional states, including fear of a medical procedure, reported by children and those

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reported by their mothers. The self-assessment of anxiety in children was significantly higher than the results of the proxy assessment of anxiety demonstrated by their mothers, although the presence of mothers during medical procedures had a positive effect on reducing anxiety in children [7].

Outpatient surgery does not offer the child any advantages over surgery with short-term hospital treatment (however, no disadvantages of this solution have been observed) [8]. Immediate behavioural consequences of a surgical emergency may include visible muscle tremors, crying, and bedwetting. Accompanying clinical symptoms include longer anaesthesia induction time, increased need for analgesics, post-operative delirium, and delayed recovery from the disease. It may also lead to maladaptive behaviour after surgery, such as appetite disturbances, tantrums, neuro-endocrine changes, and potential disruption of normal development [9].

All the child's negative feelings block internal motivation, rational activity and pro-development behaviours. Severe anxiety can impact children's physical and mental health, cause adverse post-operative effects that delay recovery and rehabilitation, and may negatively impact a child's cooperation in self-care [2].

The actions of medical staff should be aimed at counteracting these negative feelings of the child through pharmacological and non-pharmacological activities, such as games, films and activities, e.g. inflating a balloon, personalizing medical masks, etc. [9]. These activities include doctors, clowns, virtual reality, cognitive-behavioural therapy, music therapy, hypnosis, relaxation therapy using guided visualization, massage, games [10], showing concern, caring for the child's well-being and striving to reduce the feeling of anxiety, which is undesirable in the peri-operative period [11]. Distraction techniques are safe and effective in alleviating pre-operative anxiety in children, offering a valuable alternative to pharmacological intervention. The reduction in pain, suffering and anxiety is attributed to children's attention being diverted towards pleasant stimuli, which makes it more difficult to process painful experiences. Distraction therapy comes in various forms and is often classified as active or passive. Passive forms include such activities as watching a film or listening to music, during which the patient receives external stimuli. Active forms of distraction involve direct involvement in which young patients take an active part, often under the supervision of an adult. Activities such as painting, playing with toys, and using virtual reality fall within the realm of active distraction, providing diverse and interactive ways to relieve stress during medical procedures. Game-based strategies can also reduce pre-operative anxiety, improve the patient's emotional health, and speed up post-operative recovery. Distraction techniques are as, or even more effective than pharmacologic treatments, such as midazolam for reducing anxiety in paediatric patients [2, 11].

Children's behaviour in difficult situations related to hospitalization, medical procedures, pain, and other nuisances, is not fully understood, especially taking into account environmental factors in the organization of care. Regardless of the efforts of psychologists, paediatricians and nurses, there is still too much disharmony between understanding the child's emotional state resulting from stress, illness and separation from home, and personalized action to improve it.

OBJECTIVE

The aim of the srudy is to assess the well-being of children before surgery, paying attention to anxiety and anger, and to learn about their fears and expectations. To specify the aim, answers to the following thematic areas were sought: 1) children's emotional state/well-being before surgery (anxiety, anger and others); 2) children's expectations and fears before surgery; and 3) factors related to the emotional state of children in the pre-operative period

MATERIALS AND METHOD

Characteristics of the study group. The examined children were aged 11–16 years (mean age – 13.48±2.58). Among them, there were 57.1% of girls and 42.9% of boys. Half of the respondents (50.0%) lived in the countryside, and the other half in the city (50.0%) (Tab. 1).

Table 1. Characteristics of the study group

Tested variables	Diversity of the study group		
	Scope	n	%
Age	11–12-years-old	32	28.57
	13–14-years-old	38	33.93
	15–16-years-old	42	37.50
Gender	female	64	57.14
	male	48	42.86
Domicile	country	56	50.00
	city	56	50.00
Number of siblings	none	8	7.15
	one	50	44.64
	two	32	28.57
	three or more	22	19.64
Family structure	full	96	85.71
	incomplete	16	14.29
Number of hospital stays	first	54	48.21
	second and more	58	51.79
Type of surgery	orthopaedic	48	42.86
	surgical	26	23.21
	otolaryngological	38	33.93

Sample and procedure. The research design as cross-sectional. Research using a diagnostic survey was conducted between January and May 2023 among 112 children waiting for a planned surgery in three departments (surgery, laryngology and orthopaedics) of the University Children's Hospital in Lublin, eastern Poland. The tests were performed one day before surgery. The selection of the study group was purposeful, i.e. all children from the departments who were waiting for a planned surgery and met the age criterion: 11–16 years were invited to participate in the study. Children with health problems other than the reason for the surgery, which could affect their well-being, were excluded from the study. Before the research began, the children were familiarized with it, assured their anonymity, and informed about how the results would be used. Participation in the

study was voluntary, and written consent to perform the tests was obtained from both the hospital management and the parents of the examined children who stayed with them in the hospital. A total of 120 surveys were distributed, of which eight were rejected due to incomplete data; therefore, 112 surveys were qualified for the final analysis.

Research tools. Two standardized tools research tools were used in the study: the Overt Distress Scale and the Anger Expression Scale, as well as a survey questionnaire developed for the needs of the research project.

The Overt Anxiety Scale (SJN) – 'What are you like?' Developed by Elżbieta Skrzypek and Mieczysław Choynowski was used to examine the level of anxiety (trait anxiety) in children aged 9–16. The tool consists of 50 items for assessment: Neuroticism (40 items), which measures neurotic tendencies expressed in anxieties, worries, fears and concerns, as well as psychosomatic symptoms, and additionally contains questions (omitted in own research) for the assessment of Lies (9 items). This is a control scale which allows determination whether the child answered the questions honestly, and one general question (also omitted in the study). Response scale: YES or NO. The range of scores on the neuroticism scale (anxiety, worries, fears, concerns) is 0–40 points. The higher the score, the greater the anxiety. Validation of the instrument indicates satisfactory internal consistency (Cronbach's alpha=0.92) [12,13]. Moreover, raw results are converted into standardized units on the sten scale, where results in the range of 7–10 sten are considered high, thus indicating a high intensity of anxiety, while results in the range of 5–6 sten indicate an average/medium intensity of anxiety, and in within the range of 1–4 sten of low intensity [12, 13].

The Anger Expression Scale (Skala Ekspresji Gniewu, SEG). A self-report tool by Nina Ogińska-Bulik and Zygfryd Juczyński intended for children from the age of 11 years, and for adolescents. It consists of 20 statements comprising two subscales: anger directed outwards and anger directed inwards, which are rated on a 5-point Likert scale from 1 (never) to 5 (always). The overall score is the sum of the points obtained, separately for anger directed outwards and anger directed inwards. The range of scores in each scale is from 10–50 points, the higher the score, the greater the intensity of anger. Validation of the instrument indicates satisfactory internal consistency for the subscale of outwardly directed anger (Cronbach's alpha=0.78) and inwardly directed anger (Cronbach's alpha=0.72) [14]. Raw results are converted into standardized units on the sten scale, where results in the range of 7–10 sten are considered high, thus indicating a high intensity of anger, while results in the range of 5–6 sten indicate an average/medium intensity of anger, and within the range of 1–4 sten – low intensity [14].

For both scales (SJN, SEG), the stents corresponding to the raw values originate from external sources [12, 13, 14]. Cronbach's alpha coefficient in the study group was 0.67 (anger directed outward) and 0.65 (anger directed inward) for SEG, and 0.71 for SJN.

The self-designed questionnaire. Cconcerned issues related to the operation itself. It contained 36 closed and semi-open and multiple choice questions regarding: attitude towards surgery, mental preparation for the procedure (including information), factors affecting well-being, as well as fears and expectations (questions 1–29). The remaining seven questions concerned the socio-demographic characteristics of the respondents. The actual study was validated by a pilot study in a group of 20 people, conducted to assess the transparency and readability of the survey. Analysis of the results showed that all the survey questions were understandable to the children, and no changes had to be made.

Research ethics. The study was conducted in accordance with the principles of the Declaration of Helsinki. Assessment by the Bioethics Committee was waived as it is not an absolute requirement for this type of research (observational survey, non-interventional, and anonymous). Before the research began, the survey questionnaires received a positive opinion from the management and lawyers of the hospital where the study was conducted.

Statistical analysis. The collected material was subjected to statistical analysis using the STATISTICA 13.0 programme (StatSoft, Poland). Due to the quality of the collected data, the significance of differences or relationships between the examined features were checked using the $\chi 2$, Mann-Whitney U or Kruskal-Wallis test. The significance level of $p<0.05$ was assumed.

RESEARCH RESULTS

Selected factors influencing children's well-being before surgery. Analysis of the research results using a self-designed questionnaire showed that the majority of children waiting for surgery had a reduced sense of security (90.0%), felt fear (55.4%) and were nervous (50.0%). Almost all children (92.9%) were afraid of surgery; most of them described their anxiety as mild (44.6%), the rest as moderate (28.6%), or strong (19.7%).

The children were asked to evaluate the information received from staff about the operation. It turned out that a quarter of the children (25.0%) rated them as incomprehensible; the rest rated them as understandable but short (32.1%) or understandable and accurate (42.9%).

Based on the respondents' freely made statements, factors that had a negative and positive impact on their well-being before surgery were identified (Tab. 2). The factor that most often decreased children's well-being before the procedure was other patients being threatened with surgery (44.6%), seeing other patients after surgery (41.1%), and their parents' anxiety (39.3%). The presence of parents (87.5%), the kindness and understanding of staff (58.9%), and visits from peers (35.7%) most often had a positive impact on the emotional state of the children. The surveyed children were mainly afraid of pain in the post-operative wound (73.2%), weakness (39.3%), and limitation of activity (28.6%). Before the procedure, the children expected an explanation of the limitations before and after the operation (51.8%), the ways of relieving pain (44.6%), and what benefits they will receive from the procedure (26.8%). After the procedure, they expected a quick recovery (91.1%), that their parents would stop worrying (39.3%), and they could resume contact with peers (30.4%).

Table 2. Factors influencing children's well-being before surgery

Negatively influencing factors	n	%*	Positively influencing factors	n	%*
co-patients being threatened with surgery	50	44.64	presence/visiting of parents and relatives	98	87.50
seeing other children in the post-operative period	46	41.07	kindness and understanding of the staff	66	58.93
parents' anxiety	44	39.29	visits from friends	40	35.71
no explanation about the procedure	36	32.14	experience and professionalism of the staff	36	32.14
talking to a child in a language he or she does not understand (professional)	36	32.14	pain relief	34	30.36
making promises that cannot be kept, e.g. that 'it won't hur')	34	30.36	camaraderie with fellow patients	30	26.79
separation from family	34	30.36	good living conditions in the branch	28	25.00
lack of privacy in the ward	24	21.43	taking your favorite item with you, e.g. a toy, a book	26	23.21
isolation from friends	20	17.86	ensuring privacy	18	16.07
dependence on the therapeutic team and the department's regulations	8	7.14	organization of classes in the department	12	10.71
absence from school	8	7.14	individual approach of the staff	10	8.93
lack of organization of free time in the branch	4	3.57	possibility of continuing school education	2	1.79

* Values do not add up to 100% due to the possibility of selecting several answers

Table 3. Level of anxiety according to SJN in the studied group of children, taking into account their age

Age	$\bar{x}$	SD	Q1	Me	Q4
11–12 years old	19.00	7.10	13.50	18.00	25.00
13–14 years old	19.79	6.29	15.00	20.00	26.00
15–16 years old	15.76	6.53	12.00	15.00	20.00
Statistical analysis H=7.88; p=0.02					

Table 4. Level of anxiety according to SJN in the examined children depending on the type of information obtained before the procedure

Information	$\bar{x}$	SD	Q1	Me	Q4
Understand able, but short	17.72	7.79	12.00	15.50	26.00
Undrstand able, accurate	15.83	5.24	12.00	17.00	20.00
Incoprehensible	22.29	6.03	18.00	25.00	27.00
Statistical analysis H=13.74; p=0.001					

Assessment of anxiety level according to the SJN before surgery. Standardized scales revealed the occurrence of other negative emotions in the examined children before surgery, such as anxiety and anger (Tab. 5). The Overt Anxiety Scale (SJN) was used to assess anxiety in children and revealed that the average anxiety score before surgery in the study group of children was 18.05 ± 6.80 (Me = 18.00).

Taking into account sten norms, it was shown that 19.64% (n=22) of the respondents had a low level of anxiety, while 55.36% (n=62) had an average level of anxiety and 25.00% (n=28) a high level of anxiety.

The obtained results took into account a socio-demographic variable, such as in tool standardization studies, i.e. gender, and the age and environment of the subject were also taken into account. There were no significant differences in the intensity of anxiety depending on the gender and place of residence of the respondents (p>0.05). However, statistical analysis showed that respondents aged 13–14 and 11–12 had a significantly higher level of anxiety compared to the 15–16 age group. The differences found were statistically significant (p=0.02) (Tab. 3).

Statistical analysis also showed that the level of anxiety was significantly higher in the group of respondents who assessed that the information provided by medical staff regarding the planned surgery was incomprehensible, compared to children who assessed that the information provided was short and understandable or accurate and understandable. The differences found were statistically significant (p=0.001) (Tab. 4).

Assessment of anger level according to the SEG before surgery. The Anger Expression Scale (SEG) questionnaire was used to assess the expression of anger. In the study group of children waiting for surgery, the average score for anger directed outwards was 27.46, while the anger directed inward was slightly higher – 30.89 points (Tab. 5).

After converting own research results into sten norms, it was shown that in the assessment of external anger, 16.07% (n=18) of the respondents had a low level of anger, 66.07% (n=74) had an average level and 17.86% (n=20) a high level. In the assessment of internal anger, 55.36% (n=62) of the children had an average level of anger and 44.64% (n=50) had a high level (Tab. 5).

The obtained results took into account socio-demographic variables, such as those used in standardization studies, i.e. age, gender and environment of the subject. There were no significant differences in both types of anger depending on the age and gender of the respondents (p>0.05). Statistical analysis showed that rural respondents felt stronger internal anger than urban respondents (p=0.05). In the assessment of external anger, no significant differences were found between urban and rural respondents (p=0.20); however, it was observed that the level of external anger was slightly higher in children from the urban environment (Tab. 6).

Statistical analysis showed significant differences in the assessment of internal anger between groups in the assessment of information provided by medical staff regarding the planned surgery (p=0.007). It was found that subjects who assessed the information received as short and understandable had higher levels of internal anger than those who assessed the information as accurate and understandable, or incomprehensible. It was shown that external anger was higher in the group of respondents who assessed the information obtained as incomprehensible. The differences found were on the verge of statistical significance (p=0.05) (Tab. 7).

Table 5. Anger level according to the SEG before surgery in the examined children

Subscales of the SEG	$\bar{x}$	Me	Q1	Q4	SD	Anger Level (%)		
						Low	Medium	High
Anger directed outwards	27.46	27.00	25.00	29.00	3.18	16.07	66.07	17.86
Anger directed inwards	30.89	31.00	29.00	33.00	3.38	0.00	55.36	44.64

Table 6. Anger level according to the SEG in the studied group of children, taking into account their place of residence

Subscal of the SEG	City			Country			Statistical analysis	
	$\bar{x}$	Me	SD	$\bar{x}$	Me	SD deviation	Z	p
Anger directed outwards	27.86	28.00	3.00	27.07	26.50	3.32	-1.28	0.20
Anger directed inwards	30.29	30.00	3.77	31.50	31.50	2.83	1.99	0.05

Table 7. Anger level according to the SEG in the examined children depending on the type of information obtained before the procedure

Subscal of the SEG	Understandable, but short			Understand able, and accurate			Incomprehensible			Statistical analysis
	$\bar{x}$	Me	SD	$\bar{x}$	Me	SD	$\bar{x}$	Me	SD	
Anger directed outwards	26.94	26.50	3.09	27.25	27.50	3.58	28.50	28.50	2.30	H=5.83 p=0.05
Anger directed inward	31.39	31.50	4.02	31.42	31.00	2.92	29.36	29.00	2.82	H=9.98 p=0.007

DISCUSSION

It is common knowledge that paediatric surgery is a stressful and anxiety-provoking experience, not only for children but also for their parents [15]. Children's well-being, expectations and fears before a planned surgical procedure influence the course of the surgical treatment, especially in the period preceding the surgery. The prevalence of pre-operative fear and anxiety in the children in the study ranged from 41.7%-75.44%. About 50% of children aged 3–12 experienced high levels of anxiety. However, 74% of parents experienced pre-operative anxiety before surgery in their children. Moreover, the presence of anxiety in parents is known to influence anxiety in the child.

From a clinical perspective, an increased level of anxiety is associated with increased post-operative pain, stress and agitation, as well as persistent negative behaviours after discharge from hospital, i.e. sleep disorders, aggression, and bedwetting.

Pre-operative anxiety activates the human stress response system, leading to increased secretion of circulating glucocorticoids, increased incidence of post-operative infections, and delayed wound healing, all of which have a negative impact on post-operative recovery in the children [1, 16, 17, 18]. In own research, as many as 92.9% of children indicated pre-operative anxiety, and more than 80% indicated moderate and high anxiety, which reflects the poor mental condition of children before surgery. Pre-operative anxiety in children increases the likelihood of post-operative pain by 31% [19]. Among the factors negatively affecting children's well-being before surgery, every third respondent indicated lack of information about the surgery. However, a two-group, prospective observational study indicates that receiving an information package does not reduce the pre-operative anxiety of children and their parents, but only increases their satisfaction with information and communication about the surgery [20]. However, information available on the Internet before paediatric surgery may reduce parents' anxiety, and increase their knowledge and satisfaction with care more than the standard care [21].

Distraction as a method of dealing with pre-operative anxiety brings positive effects in paediatric patients undergoing surgery, and is therefore an alternative to anti-anxiety drugs without causing side-effects [22]. A considerable beneficial effect on pre-operative anxiety and pre-operative and post-operative pain in children has been demonstrated using virtual reality (VR), such as 3–4-minute tours of the operating room with a cartoon character, and 3–4-minutes favorite gaming. A significant relationship between VR activity and exposure time immediately before surgery provides a scientific basis for developing targeted intervention strategies to increase the effectiveness of paediatric surgical care [23, 24].

Meanwhile, the combination of interventions using TICK-B – a colouring book – and TKTX cream – a topical anaesthetic – proved to be the most effective in reducing pain intensity: mean score of 2.80 compared to 7.24 in the control group ($p<0.001$) and fear levels: mean score 0.93 compared to 2.83 in the control group ($p<0.001$) during and after venipuncture procedures, compared to single interventions and the control group [25].

Rosenbloom et al., with moderate certainty, identified pre-operative pain intensity as a risk factor for the development of chronic post-operative pain in children, emphasizing the importance of prioritizing pain management throughout the peri-operative period, beginning with the pre-operative stage [26]. Children most often indicated the presence of parents/guardians, friends, co-patients, the opportunity to take their favourite items and the organization of activities in the ward, as ways to distract themselves and improve their well-being.

Anger is defined as the emotional component of aggression directed outward at a moderate and high level, felt by almost 84% of the surveyed children, and anger directed inward at a moderate and high level concerned 100% of the surveyed children [27]. The internal expression of anger was much higher than the external, which could suggest that they are unable to release the anger resulting from this difficult situation. This anger is related to the feelings of anxiety, fear, and sadness before surgery. The tendency to suppress anger expressed by the examined children promotes depression

and reduces the sense of satisfaction with life [5]. High and moderate levels of anger in children in the pre-operative period may be related to the ineffectiveness of educational interventions [28]. The diagnosed anger of rural children before surgery, which differs significantly from the anger of urban children, is related to the way of upbringing. Through the process of upbringing, rural children are supposed to hide their emotions, not externalize them. Gartstein et al. from the University of Washington, empirically proved that children from rural families are more likely to show negative emotions, such as anger and frustration, than those from urban families. On the other hand, children born in large cities were less fussy and reacted less to the restrictions set by their guardians. Researchers claim that they may know the reason for these differences and indicate that urban parents are better at guessing the wants and needs of their children, and respond more adequately to these wants needs [29].

Limitations of the study. The empirical evidence collected in the study is quite general in nature, indicating many directions for further, in-depth analyses and the need for more harmonized data in the area of children's reactions to pre-operative stress situations, which should be based on research tools used by a larger group of researchers. Original research results, and those quoted in the Discussion, were often obtained after using various research methods. The research was cross-sectional and based on the opinions of the children, which are often conditioned by contextual factors not taken into account in this study.

A major limitation of the study is the inability to perform multifactorial analyses which could have demonstrated, among other things, the role of mental and informational preparation in reducing pre-operative anxiety. The sample size of the examined children was insufficient to calculate the differences between the hospital wards where the children were treated, and additionally does not allow for paediatric surgical ward patients generalizations, but suggests continuation of further research.

Practical implications. The results obtained in the study indicate the need to increase the effectiveness of pre-operative preparation of both parents and children by using various content transfer techniques, including interactive, play, and simulated techniques. Taking into account that the peri-operative period in children constitutes a qualitatively different entity in terms of pathology, stage of development, and psycho-social factors, it should be stated that it further multi-directional research is required, which is especially necessary in relation to surgery in the developmental age. Examining children's expectations and well-being before surgery can provide medical staff with valuable tips to improve the quality of care provided.

CONCLUSIONS

Children and adolescents in the pre-operative period experience fear, anger, anxiety, and many other negative emotions, which can be alleviated primarily by the presence of a parent/guardian, and information support. Factors that negatively affect children's pre-operative well-being originate from the child's environment (i.e. co-patients being threatened with surgery, seeing other children in the post-operative period, parents' anxiety), which require psychotherapeutic interventions from the medical staff, and may contribute to reducing the anxiety of the children and have a beneficial effect on recovery. Among the teenagers in the studied group, a high level of anger was found, which is a negative reaction to limitations related to a difficult situation, insufficient clear information, and a way of reacting shaped by socialization.

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