

Peritraumatic distress in mothers of severely ill children: a cross-sectional study

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Abstract

Background: Peritraumatic distress is a syndrome that involves negative emotions, such as anxiety, helplessness and horror, experienced during and shortly after a traumatic event. The intensity of peritraumatic distress is significantly linked to the intensity of post-traumatic stress syndrome (PTSD) symptoms. The aim of the study was to study the intensity of peritraumatic distress symptoms in the mothers of severely ill children and the relationship between peritraumatic distress and psychological, socio-demographic and medical coefficients in the mothers.

Methods: An anonymous survey was performed in a group of 135 mothers of children with a perinatal medical history and mothers of children hospitalized in an intensive care unit and an oncology unit. The demographic questionnaire was compiled by the authors along with several standardized research tools.

Results: Intensity of peritraumatic distress correlates strongly positively with anxiety, $\rho = 0.50$; $P < 0.001$, and moderately positively with intrusion $\rho = 0.39$; $P < 0.001$, arousal, $\rho = 0.38$; $P < 0.001$, PTSD intensification, $\rho = 0.40$; $P < 0.001$, depression, $\rho = 0.49$; $P < 0.001$. Significant predictors of peritraumatic distress include the use of such coping strategies as acceptance, $\beta = -0.44$; $P = 0.001$, denial, $\beta = 0.20$; $P = 0.019$, planning, $\beta = -0.26$; $P = 0.012$ and humour, $\beta = -0.29$; $P = 0.048$, as well as the possibility to obtain self-worth support, $\beta = -0.07$; $P = 0.029$ (R^2 corrected = 0,32; $F(5,33) = 9.43$; $P < 0.001$).

Conclusions: Coping strategies are a potentially modifiable factor, thus, implementing prevention programmes concerning the strategies should be considered.

Key words: coping, parents, post-traumatic stress disorder, posttraumatic stress symptoms, intensive therapy, dystress, peritraumatic dystress.

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Peritraumatic distress is a syndrome that involves negative emotions, such as anxiety, helplessness and horror, experienced during and shortly after a traumatic event. It seems that peritraumatic distress, along with peritraumatic dissociation, is one of the strongest predictive factors of post-traumatic stress syndrome (PTSD) [1]. Intensity of peritraumatic distress is significantly related to the intensity of PTSD symptoms, among others in individuals who experienced a natural disaster [2] or motorcycle accident [3] as well as in policemen [4] and paramedics [5].

Parents of severely ill children experience extreme emotions due to their child's illness. This tendency applies to parents of children treated in the neonatal intensive care units (NICUs) [6–8] as well as parents of children treated for cancer [9]. Mothers

and fathers of children with a medical history of a disease are more susceptible to mental disorders such as acute stress disorder (ASD), PTSD and depression, compared to parents of healthy children. For instance, 5.5% of the parents of infants who were prenatally diagnosed with congenital defects presented symptoms of post-traumatic stress syndrome and 35.9% of the mothers and 9.5% of the fathers showed symptoms of severe depression during the postnatal period [10].

In a group of children with severe conditions (those who required cardio-surgery) a change of parenting role turned out to be the most stressful aspect. Moreover, the parents of children who required cardio-surgery presented a higher level of anxiety and depression compared to the control group at all time points, with the highest level ob-

tained during the child's stay in the intensive care unit (ICU). The authors of the research also proved that stress connected with the sights and sounds typical of the ICU as well as appearance and behaviour of the infant were significantly related to anxiety and depression [11]. In the case of infants, preterm birth and low gestational weight are, among others, significant predictors of distress in the parents [12]. Potentially modifiable factors include familiarity of healthcare personnel with the newest findings of medicine, necessity for the child's re-hospitalization, concomitant infection, the presence of painful procedures and positive experiences with healthcare staff [13].

Another factor that affects the level of stress in the parents of hospitalized children is the model of care over the child and their family, which involves, for instance, the number of visits and the parents' engagement in childcare. The relationship of this coefficient with parental stress is not completely clear. Research by Bernardo *et al.* showed that implementation of family-centred care (FCC) in the ICUs affects the level of stress in the parents. Parents from the group where FCC was applied, compared to the parents from the control group, were not only characterized by a higher level of satisfaction with the care, but also experienced a lower level of stress [14]. However, Greene *et al.* showed that among mothers of children with a very low gestational weight, treated at the ICU, distress is a significant predictor of the number of their visits and, at the same time, visiting the child is connected with long-term distress in the mother [15].

Muscara *et al.* [16] suggested that the effect of factors connected with the child's illness is unclear and research performed so far, which systematically studied the occurrence of mental reactions in parents of children with various medical conditions, is uncommon. Taking into consideration the research results indicating that the attitude and behaviour of the parents affect the child's psychological adjustment and recovery, studying these relationships seems essential. This research shows that intensity of the investigated psychological reactions in parents of severely ill children does not differ statistically significantly depending on the type of disease [16]. The results mentioned show that psychological coefficients, which are connected with the parent's functioning, are the factor that is connected with the distress experienced by him or her to the greatest extent. One such coefficient is a coping strategy.

Parents of ill children cope with stress in various ways. For instance, the parents of children treated in the ICU most frequently chose strategies such as use of emotional support, active coping, positive reframing, religion, planning and

use of instrumental support. Coping strategies differed according to race and gender. Women blamed themselves for the situation more often than men and younger parents used venting and avoidance more often than older ones. The parents whose children stayed in hospital for a shorter time used self-distraction more often [17]. Plentiful research points to the connection between parents' coping strategies, parents' coping styles and the intensity of stress experienced and intensity of post-traumatic stress syndrome [18–20]. The literature is lacking in data that prove the connection of peritraumatic distress and coping strategies.

The aim of the research was to study the intensity of peritraumatic distress symptoms in the mothers of severely ill children and the relationship between peritraumatic distress and psychological, socio-demographic and medical coefficients in the mothers.

METHODS

The study is a part of a larger project and was approved by the Ethics Committee of the Medical University of Lublin (KE-0254/119/2015). Written informed consent was obtained from all participants.

An anonymous survey was performed in a group of 135 mothers of children with a perinatal medical history and mothers of children hospitalized in an intensive care unit and an oncology unit. Having informed the respondents about the aim and course of the research, the mothers were asked to give their informed written consent to participate in the research. Next, they received the questionnaires in an addressed envelope with information on the method of returning completed questionnaires. In the case of the mothers of children hospitalized in the ICU, the inclusion criterion was the child's hospital stay for at least three days. In the case of the children treated for cancer, mothers whose children had been diagnosed at least four weeks before were included in the study. For the group of mothers of children with a perinatal medical history, only those whose infants were at least four weeks old and were provided rehabilitation care in the outpatient clinic were qualified. The mothers of children treated in the oncology unit had the opportunity to consult a psychologist employed in the unit, whereas a psychologist was not employed in the ICU where the study was performed.

The authors' own demographic questionnaire and several standardised psychometric tools were used in the course of the research:

- **The Peritraumatic Distress Inventory (PDI)** was used to measure distress occurring during and shortly after the traumatic event [4, 5]. A Polish version of the instrument consisting of 11 items

was utilized in the course of the research. In the mothers of severely ill children peritraumatic distress comprises two factors: (1) feeling of threat and somatic reactions; (2) negative emotions. Feeling of threat and somatic reactions involves fear of lack of security for the individuals researched and their close ones, the sense of lack of control of emotions, shame of emotions and the feeling of risk of fainting and/or death. Negative emotions include experiencing strong emotions such as helplessness, sadness, grief, frustration, anger and fear [5].

- **The Brief COPE** was used to assess the way the respondents tend to react to stress resulting from their child's illness, which is called a situational approach. The questionnaire comprises 28 items, which constitute 14 subscales that correspond to the coping strategies [21].
- **Self-Rated Health (SRH)** was used to measure self-rated health status. Similarly to the research conducted by the Statistical Office, in the present research, the respondents when asked "How do you rate your health?" were asked not to take into account short-term temporary health problems (e.g. a cold, flu). Individuals surveyed could choose from five answers: very good, good, neither good nor bad, bad, very bad [22, 23].

The mothers of the children who had been diagnosed four weeks before the research (only mothers of children with a perinatal medical history and those suffering from cancer) received additional questionnaires which included:

- **The Impact of Events Scale – Revised (IES-R)** was used to assess the intensity of post-traumatic stress syndrome (PTSD). The IES-R consists of three subscales: Intrusion, Arousal and Avoidance. The instrument enables measurement of the intensity of symptoms corresponding to the subscales and general intensity of PTSD symptoms. In the present study, in line with the recommendations of the Polish adaptation of the tool, PTSD was suspected only in the individuals who obtained results above the cut-off point (> 1.5) in all three subscales [24, 25].
- **The Hospital Anxiety and Depression Scale (HADS)** was used to measure the intensity of depressive symptoms and anxiety. The HADS is a self-report scale developed by Zigmond and Snaith [26] and adapted into Polish by Michalcy and Pilecka, which comprises 14 items [27]. It is highly sensitive and specific in recognising depression and anxiety disorders [25–27].
- **The Interpersonal Support Evaluation List (ISEL-40 v. GP)** by S. Cohen, adapted into Polish by D. Zarzycka *et al.*, enables measurement of availability of potential social support perceived by

the individuals surveyed. It is composed of four subscales corresponding to the types of social support, i.e. (1) Tangible Support, (2) Belonging Support, (3) Self-esteem Support, (4) Appraisal Support [32].

Statistical methods

Characteristics of the validation sample were developed on the basis of the analysis of percentage distribution of qualitative coefficients' frequency and on the basis of the values of descriptive statistics – mean and standard deviation of quantitative parameters. Spearman's rank correlation coefficient was used to perform correlation analyses. Leading correlates of peritraumatic distress were assessed by means of multivariate step regression. $P < 0.05$ was adopted as significant. Statistical analyses were conducted by means of the IBM SPSS 21 software.

RESULTS

The research sample was selected intentionally and comprised 135 mothers of children with a perinatal medical history and mothers of children hospitalized in the intensive care unit and oncology unit. Sociodemographic characteristics of the individuals researched were depicted in Table 1.

Mean age of the respondents was 34 years ($M = 34.39$; $SD = 6.28$). Individuals with higher education ($n = 81$; 59.6%), living in urban areas ($n = 72$; 52.9%) and who were married ($n = 118$; 86.8%) were dominant in the sample. Over half of the respondents were professionally active ($n = 72$; 52.9%) and over 85% of their spouses or partners also had a job ($n = 117$; 86%). Almost 60% of the parents rated their financial situation as good ($n = 78$; 58.6%). On average, the women had been pregnant more than twice ($M = 2.16$; $SD = 1.08$) and had experienced two childbirths ($M = 1.95$; $SD = 0.97$).

In the course of the analyses performed, it was found that place of hospitalization differentiated the intensity of peritraumatic distress in the population investigated, $\chi^2 = 8.79$, $P < 0.012$ and one of the dimensions – sense of danger and somatic reactions, $\chi^2 = 7.48$, $P < 0.024$. No statistically significant inter-group difference in intensity of negative emotions was found, $\chi^2 = 4.78$, $P = 0.107$. According to the detailed comparisons, the mothers of children hospitalized in the oncology unit presented a higher level of peritraumatic distress ($M = 2.10$; $SD = 0.75$) compared to the mothers of children with perinatal medical history ($M = 1.60$; $SD = 0.61$). Moreover, the mothers of patients staying at the ICU ($M = 2.15$; $SD = 0.75$) are characterized by a higher level of peritraumatic distress than the mothers of children with perinatal medical history, ($M = 1.60$; $SD = 0.61$). The mothers of children hospitalized at the ICU present-

ed higher sense of danger and somatic reactions ($M = 1.38$; $SD = 0.94$) and negative emotions ($M = 3.04$; $SD = 0.78$) compared to the mothers of children with perinatal medical history ($M = 0.77$; $SD = 0.62$ and $M = 2.61$; $SD = 0.90$, respectively).

The next stage of the research involved conducting correlation analysis between two dimensions and the general result of peritraumatic distress (PDI), the HADS and BRIEF COPE scales as well as the hospitalized child's health rated by the mothers, mothers' age and the severity of pain experienced by the mothers. The results of the calculations are presented in Table 2.

Intensity of peritraumatic distress correlates strongly positively with anxiety, $\rho = 0.50$, $P < 0.001$, moderately positively with intrusion, $\rho = 0.39$, $P < 0.001$, arousal, $\rho = 0.38$, $P < 0.001$, PTSD intensity, $\rho = 0.40$, $P < 0.001$, depression, $\rho = 0.49$, $P < 0.001$, using coping strategies that involve denial, $\rho = 0.42$, $P < 0.001$, and self-blame, $\rho = 0.41$, $P < 0.005$, and weakly positively with avoidance, $\rho = 0.29$, $P < 0.01$. Furthermore, a moderate negative correlation of peritraumatic distress and a coping strategy of acceptance, $\rho = -0.35$, $P < 0.001$ was found as well as a weak negative correlation with positive reframing, $\rho = -0.21$, $P < 0.05$, humour, $\rho = -0.23$, $P < 0.01$ and mother's self-rated health of the child, $\rho = -0.20$, $P < 0.05$.

Correlation coefficients obtained indicate that the peritraumatic distress symptom that involves the sense of danger and somatic reactions is correlated moderately positively with intrusion, $\rho = 0.35$, $P < 0.001$, arousal, $\rho = 0.34$, $P < 0.01$, PTSD intensity, $\rho = 0.37$, $P < 0.001$, anxiety, $\rho = 0.38$, $P < 0.001$, depression, $\rho = 0.36$, $P < 0.001$, and denial in stressful situations, $\rho = 0.36$, $P < 0.001$. It is weakly positively correlated with avoidance, $\rho = 0.29$, $P < 0.01$ and self-blame, $\rho = 0.28$, $P < 0.01$. Also there was found a moderate negative correlation of sense of danger

TABLE 1. Validation sample characteristics, $N = 135$

Variables	
Age (years), mean (SD)	34.39 (6.28)
Education, n (%)	
Primary	22 (16.2)
Secondary	33 (24.3)
Higher	81 (59.6)
Place of residence, n (%)	
Urban areas	72 (52.9)
Rural areas	57 (41.9)
No data	7 (5.1)
Marital status, n (%)	
Married	118 (86.8)
Single	12 (8.8)
Divorced	3 (2.2)
Widow	3 (2.2)
Gainful profession of a parent researched, n (%)	88 (64.7)
Gainful profession of a researched parent's spouse, n (%)	117 (86.0)
Financial situation, n (%)	
Sufficient for a very good life	16 (12.0)
Sufficient for a good life	78 (58.6)
Sufficient for a humble life	35 (26.3)
Sufficient for a very humble life	4 (3.0)
Number of pregnancies, mean (SD)	2.16 (1.08)
Number of childbirths, mean (SD)	1.95 (0.97)
Number of premature childbirths, mean (SD)	0.46 (0.63)
Number of miscarriages, mean (SD)	0.24 (0.52)
Health status of the ill child, n (%)	
Very good	29 (22.8)
Good	29 (22.8)
Neither good nor bad	34 (26.8)
Bad	19 (15.0)
Very bad	16 (12.6)
Group (n , %)	
Oncology unit	55 (40.4)
Intensive care unit	59 (43.4)
Perinatal medical history	22 (16.2)

TABLE 2. Intensity of peritraumatic distress depending on the place of hospitalization

Scale	Group						General group comparison		
	Oncology (1)		Intensive care unit (2)		Perinatal medical history (3)		χ^2	P	
	M	SD	M	SD	M	SD			
Peritraumatic distress	2.10	0.75	2.15	0.75	1.60	0.61	8.79	0.012	
Sense of danger and somatic reactions	1.38	0.93	1.38	0.94	0.77	0.62	7.48	0.024	
Negative emotions	2.98	0.80	3.04	0.78	2.61	0.90	4.78	0.107	
	Detailed group comparison								
	1–2		1–3		2–3				
	Z	P	Z	P	Z	P			
Peritraumatic distress	0.64	0.520	2.44	0.015	2.90	0.004			
Sense of danger and somatic reactions	0.10	0.921	2.54	0.110	2.53	0.011			
Negative emotions	0.49	0.620	1.58	0.114	2.17	0.030			

TABLE 3. Values of correlation coefficients between the PDI dimensions and the scales: HADS, BRIEF COPE and SRH

Variables	Peritraumatic distress	Sense of danger and somatic reactions	Negative emotions
Intrusion	0.39****	0.35***	0.31***
Arousal	0.38****	0.34**	0.31***
Avoidance	0.29**	0.29**	0.25*
PTSD	0.40****	0.37****	0.32****
Anxiety	0.50****	0.38****	0.42****
Depression	0.49****	0.36****	0.42****
Anger	-0.11	-0.02	-0.18
Active coping	0.02	-0.03	0.07
Planning	0.03	0.01	0.06
Positive reframing	-0.21*	-0.10	-0.30****
Acceptance	-0.35****	-0.31****	-0.32****
Humour	-0.23**	-0.20*	-0.14
Religion	-0.03	0.07	-0.06
Use of emotional support	-0.11	-0.11	0.02
Use of instrumental support	-0.08	-0.13	-0.02
Self-distraction	-0.08	-0.10	-0.03
Denial	0.42****	0.36****	0.35****
Venting	0.09	0.04	0.15
Substance use	0.12	0.07	0.15
Behavioural disengagement	0.02	0.06	-0.03
Self-blame	0.41***	0.28**	0.47****
Mother's perception of the ill child's health	0.09	0.05	0.11
Mother's self-rated health	-0.20*	-0.22**	-0.14
Mother's age	-0.01	0.05	-0.08
Pain severity in the mother	0.03	0.01	0.07

*Correlation significant at 0.05; **correlation significant at 0.01; ***correlation significant at 0.005; ****correlation significant at 0.001.

and somatic reactions with a coping strategy of acceptance, $\rho = -0.31, P < 0.001$, as well as a weak negative correlation with perceived belonging support, $\rho = -0.20, P < 0.05$, humour, $\rho = -0.20, P < 0.05$ and mother's self-rated health, $\rho = -0.22, P < 0.01$.

The symptom of distress, which is manifested by negative emotions, correlates moderate positively with intrusion, $\rho = 0.31, P < 0.005$, arousal, $\rho = 0.31, P < 0.005$, PTSD intensity, $\rho = 0.32, P < 0.005$, anxiety, $\rho = 0.42, P < 0.001$, depression, $\rho = 0.42, P < 0.001$, denial in stressful situations, $\rho = 0.35, P < 0.001$ as well as self-blame, $\rho = 0.47, P < 0.001$. What is more, a moderate negative correlation of negative emotions with the use of coping strategies of positive reframing, $\rho = -0.30, P < 0.001$, and acceptance, $\rho = -0.32, P < 0.001$ was found. No statistically significant associations were noted in the remaining dimensions, $P > 0.05$ (Table 3).

Predictors of peritraumatic distress are presented in Table 4. According to the calculations performed, a model consisting of five steps was developed. A total of five predictors explaining a total of 32.0% of variance of peritraumatic distress were in turn introduced into the model.

In the first step, a coping strategy that involves acceptance was introduced as an explanatory variable. The model turned out to fit the data well and explained 16.0% (R^2 corrected = 0.16) of the dependent variance, $F(1.37) = 18.39, P < 0.001$. In the second step, denial was introduced into the model, which also turned out to fit the data well and explained 23.0% (R^2 corrected = 0.23) of the explained variance, $F(2.36) = 14.66, P < 0.001$. In the third step, the model was completed with planning, which enabled the scope of explanatory variance of peritraumatic distress to be increased to 26.0% (R^2 corrected = 0.26), $F(3.35) = 11.61, P < 0.001$. In the fourth step, self-worth support was introduced into the model. The model turned out to fit the data well and explained 30.0% (R^2 corrected = 0.30) of the explained variance, $F(4.34) = 10.42, P < 0.001$. The fifth step involved introducing a coping strategy of humour into the model, which turned out to fit the data well and explained 32.0% (R^2 corrected = 0.32) of the explained variance, $F(5.33) = 9.43, P < 0.001$. The model developed shows that significant predictors of peritraumatic distress in the parents researched include the use of a coping strategy that involves acceptance, $\beta = -0.44, P = 0.001$, denial, $\beta = 0.20, P = 0.019$, planning, $\beta = -0.26, P = 0.012$ and humour, $\beta = -0.29, P = 0.048$, as well as the possibility to obtain self-worth support, $\beta = -0.07, P = 0.029$.

Dependencies between acceptance, planning, self-worth support and humour and the dependent variable are negative and dependency between denial and peritraumatic distress is positive. It indicates that the risk of the symptoms analysed in the population researched is the highest in the mothers experiencing stress resulting from their child's hospitalization who find accepting the situation difficult, deny objective facts, avoid planning and relieving the tension through humour and receive little self-worth support.

Conditioning of the sense of danger and somatic reactions is depicted in Table 4. A model consisting of four steps was developed. A total of four predictors explaining 27.0% of the variance in sense of danger and somatic reactions were in turn introduced into the model.

In the first step, the explanatory variance of a coping strategy that involves acceptance was introduced into the model. It turned out to fit the data well and explained 15.0% (R^2 corrected = 0.15) of the dependent variance, $F(1.38) = 17.71, P < 0.001$. In

TABLE 4. Conditioning of peritraumatic distress

Model	Goodness of fit			Regression weights for predictors								
	R^2 corrected	F	P	B	S	β	t	P				
Step 1												
Acceptance	0.16	18.39	0.001	-0.44	0.10	-0.41	4.29	0.001				
Step 2												
Acceptance	0.23	14.66	0.001	-0.34	0.10	-0.32	3.30	0.001				
Denial				0.27					0.09	0.30	3.04	0.003
Step 3												
Acceptance	0.26	11.61	0.001	-0.41	0.11	-0.39	3.85	0.001				
Denial				0.26					0.09	0.29	3.00	0.004
Planning				-0.21					0.10	-0.20	2.09	0.039
Step 4												
Acceptance	0.30	10.42	0.001	-0.45	0.11	-0.43	4.27	0.001				
Denial				0.21					0.09	0.23	4.43	0.017
Planning				-0.26					0.10	-0.25	2.58	0.012
Self-worth support				-0.07					0.03	-0.21	2.28	0.025
Step 5												
Acceptance	0.32	9.43	0.001	-0.44	0.10	-0.42	4.23	0.001				
Denial				0.20					0.09	0.23	2.39	0.019
Planning				-0.26					0.10	-0.24	2.57	0.012
Self-worth support				-0.07					0.03	-0.20	2.22	0.029
Humour				-0.29					0.15	-0.18	2.01	0.048

the second step, an additional variable, denial, was introduced into the model. The model also fitted the data well and explained 20.0% (R^2 corrected = 0.20) of the explained variance, $F(2, 37) = 12.76$, $P < 0.001$. In the third step, the model was completed with the variable belonging support, which enabled the scope of the explained variance of the sense of danger and somatic reactions to be increased to 23.0% (R^2 corrected = 0.23), $F(3,36) = 10.32$, $P < 0.001$. The fourth step involved introducing into the model the variable planning. The model turned out to fit the data properly and explained 27.0% (R^2 corrected = 0.27) of the observed variance, $F(4,35) = 9.85$, $P < 0.001$.

The model developed reveals that significant predictors of the sense of danger and somatic reaction are the use of coping strategies that involve acceptance, $\beta = -0.43$, $P < 0.001$, denial, $\beta = 0.19$, $P < 0.046$ and planning, $\beta = -0.24$, $P = 0.012$ as well as belonging support, $\beta = -0.24$, $P < 0.009$. Dependencies between acceptance, belonging support and planning and the dependent variable are negative, whereas the dependency between denial and the explanatory variable is positive. This suggests that the less frequently the mothers researched use a coping strategy focused on accepting the situation and planning possible ways of dealing with it and the more frequently they deny negative experiences and

receive insufficient belonging support, the more their sense of danger and somatic reactions are intensified.

Conditioning of negative emotions typical of peritraumatic distress is presented in Table 5. The analyses performed lead to the development of a model comprising two steps, which explains 18.0% of the variance in negative emotions.

In the first step, self-blame was introduced as the explanatory variance. The model turned out to fit the data well and explained 16.0% (R^2 corrected = 0.16) of the dependent variance, $F(1,37) = 17.46$, $P < 0.001$. In the second step, the model was completed with an additional variable – acceptance. The model also proved to fit the data properly and explained 18.0% (R^2 corrected = 0.18) of observed variance, $F(2,36) = 11.08$, $P = 0.001$.

The model developed shows that significant predictors of negative emotions include the use of coping strategies involving self-blame, $\beta = 0.34$, $P < 0.001$ and acceptance, $\beta = -0.20$, $P = 0.046$. Dependency between self-blame and the dependent variable is positive, whereas dependency between acceptance and the explained variance is negative. This indicates that the more frequently the women researched blame themselves in a stressful situation and the more they find accepting the circumstances difficult, the more intense their negative emotions resulting from their child's hospital stay are.

TABLE 5. Conditioning of sense of danger and somatic reactions

Model	Goodness of fit			Regression weights for predictors							
	<i>R</i> ² corrected	<i>F</i>	<i>P</i>	<i>B</i>	<i>S</i>	β	<i>t</i>	<i>P</i>			
Step 1											
Acceptance	0.15	17.71	0.001	-0.53	0.13	-0.40	4.21	0.001			
Step 2											
Acceptance	0.20	12.76	0.001	-0.42	0.13	-0.31	3.23	0.002			
Denial				0.29		1.11			0.25	2.59	0.011
Step 3											
Acceptance	0.23	10.32	0.001	-0.45	0.13	-0.34	3.52	0.001			
Denial				0.24		1.11			0.21	2.15	0.034
Belonging support				-0.08		0.04			-0.20	2.12	0.037
Step 4											
Acceptance	0.27	9.85	0.001	-0.57	0.13	-0.43	4.31	0.001			
Denial				0.21		0.11			0.19	1.94	0.046
Belonging support				-0.09		0.04			-0.24	2.66	0.009
Planning				-0.32		0.12			-0.24	2.57	0.012

DISCUSSION

The research results indicate that a history of severe peritraumatic distress correlates positively with currently experienced symptoms of post-traumatic stress syndrome, depression and anxiety. The findings are consistent with plentiful research results which, despite being conducted in completely different populations (e.g. among victims of violence, natural disasters survivors or in emergency services), show the relationship between peritraumatic distress and occurrence of post-traumatic stress syndrome afterwards [2, 4]. Previously, according to the DSM-IV, severe peritraumatic distress was treated as an indispensable element in the diagnosis of PTSD – as criterion A2 [4, 28].

Peritraumatic distress and post-traumatic stress syndrome in parents of severely ill children are connected with similar coping strategies. Avoidance and emotion-focused coping strategies seem to have a crucial predictive value. Bronner *et al.* found that PTSD risk factors in a group of parents whose children were treated in the ICU included expressing emotions, avoidance coping and peritraumatic

dissociation [29]. Franck *et al.* detected similar risk factors in a group of parents whose children were treated in general paediatric wards, such as denial, venting and self-blame [18]. It is worth highlighting that there can be some differences between the mothers and fathers in terms of coping strategies connected with PTSD. Coping strategies connected with PTSD in the mothers of infants treated in the NICU were self-distraction, behavioural disengagement and denial, whereas in the fathers only self-distraction was significant [30]. Interestingly, the way of experiencing a difficult situation (as a threat and loss or a challenge) is related to coping strategies. Perceiving the child’s illness as a threat and loss is positively correlated with emotion-focused coping and negatively correlated with problem-focused coping. Perceiving the child’s illness in terms of a challenge is positively associated with problem-focused coping and negatively associated with emotion-focused coping. Cappe *et al.* observed that parents of children with autism spectrum disorder (ASD) who concentrated more on their emotions had a more disturbed relationship with the child. The parents who tended to use solution-focused

TABLE 6. Conditioning for negative emotions

Model	Goodness of fit			Regression weights for predictors				
	<i>R</i> ² corrected	<i>F</i>	<i>P</i>	<i>B</i>	<i>S</i>	β	<i>t</i>	<i>P</i>
Step 1								
Self-blame	0.16	17.46	0.001	0.37	0.09	0.41	4.18	0.001
Step 2								
Self-blame	0.18	11.08	0.001	0.31	0.09	0.34	3.38	0.001
Acceptance				-0.22				

coping strategies and sought social support had a better relationship with the child. Consistently with the results of other researchers, coping strategies focused on emotions are effective only in a short-term perspective. The strategies are not constructive in the long run since they turn attention away from the problem and can lead to avoidance and denial [31].

It is worth emphasizing that some coping strategies may have a protective effect in the light of the aforementioned research. Thus, they can be utilised in developing preventive strategies, since coping is a potentially modifiable factor. The strategies include positive reframing, acceptance and humour. Positive reframing involves an attempt to look at the situation from a more positive angle and treating it in terms of a challenge and possibility to develop. Acceptance is approval of a given situation and learning to live with it. Humour is connected with optimism and noticing amusing aspects of a given situation [21].

A limitation of the presented discussion results from the fact that the literature of the subject is abundant in tools that measure coping strategies. The instruments comprise various scales that represent coping strategies. Furthermore, some studies are concerned with coping styles. The following cited papers present the research results of studies devoted to the significance of coping strategies which were conducted using various measures: Brief COPE [19], COPE [21, 30], Utrecht Coping List [29], Ways of coping checklist [31]. This leads to some differences in the terminology utilised and understanding of the strategies themselves. Interested readers are advised to read the cited articles.

Analogically to the research by Muscara *et al.* [16], in the present study, self-rated health of a child was not statistically significantly related to the intensity of peritraumatic distress. However, peritraumatic distress was connected with the mother's self-rated health. It can be explained in the light of the holistic definition of health, according to which health is a state of complete physical, mental and social well-being of an individual. The lack of complete well-being resulting from chronic diseases decreases the body's ability to cope with stress.

CONCLUSIONS

Child's health according to the mother is not related to experiencing peritraumatic distress in the mothers of severely ill children.

Place of hospitalization differentiates the intensity of peritraumatic distress in the population researched. The greatest intensity of peritraumatic distress was observed in the mothers of children treated in the ICU, less intensive distress was noted in the children treated in the oncology unit, and the

least intensive peritraumatic distress was found in the mothers of children with perinatal medical history.

Peritraumatic distress is positively correlated with such coping strategies as denial and self-blame and negatively correlated with positive reframing, acceptance and humour.

Self-rated health of the mothers is related to the intensity of peritraumatic distress.

PRACTICAL IMPLICATIONS

Coping strategies are a potentially modifiable factor – implementation of prevention programmes concerning the strategies should be considered.

The mothers of severely ill children, especially with a medical history of a disease, should be provided with special care and support and have their mental health checked regularly due to an increased risk of intensified peritraumatic distress and post-traumatic stress syndrome.

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