

The emotional reactions of parents to the hospitalization and conservative treatment of children after cardiac surgery in comparison to the parents of children treated for acute infection



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Kardiologia i Torakochirurgia Polska 2013; 10 (1): 27–30

Abstract

Background: Hospitalization of children is a highly stressful situation for their parents, related to the feeling of danger and uncertainty, which can affect family functioning.

Aim of the study: The aim of this study was to assess the emotional reactions of parents to the hospitalization of their children, as well as to evaluate the differences in these reactions between parents of children after cardiac surgery versus parents of children suffering from acute infection.

Material and methods: The study population consisted of 140 parents (114 mothers, 26 fathers) of children hospitalized and treated conservatively in the Polish-American Institute of Pediatrics of the Jagiellonian University in Kraków in 2010 and 2011. The modified HADS (Hospital Anxiety and Depression Scale) was used for the assessment of parental emotional reaction. Examining the levels of anxiety, depression, and aggression (irritability), it was originally developed by Snaith and Zigmond; its modified Polish version was prepared by M. Majkiewicz, K. de Walden-Gałuszko, and G. Chojnacka-Szawłowska.

Results: In the examined group, a high level of anxiety was exhibited by 60 (78.9%) parents of children after cardiac surgery (subgroup I) vs. 13 (20.3%) parents of children with acute infection (subgroup II).

Conclusions: The hospitalization of a child and the undertaken medical procedures form a highly stressful situation for the parents, which can increase their levels of anxiety, depression, irritability, or even aggression.

Key words: congenital heart disease, infections, parents, psychology.

Streszczenie

Wstęp: Hospitalizacja dziecka jest dla rodziców wydarzeniem bardzo stresującym, niosącym ze sobą poczucie zagrożenia i niepewności, jak również mogącym wpływać na relacje pomiędzy poszczególnymi członkami rodziny.

Cel pracy: Ocena reakcji emocjonalnej rodziców związanej z hospitalizacją dziecka oraz występowania różnic w tej reakcji pomiędzy rodzicami dzieci po leczeniu operacyjnym z powodu wrodzonej wady serca a rodzicami dzieci leczonych z powodu ostrej infekcji wieku dziecięcego.

Material i metody: Badaniem objęto 140 rodziców (114 matek i 26 ojców) dzieci leczonych w Polsko-Amerykańskim Instytucie Pediatrii UJ CM w Krakowie na przełomie 2010 i 2011 roku. Do oceny reakcji emocjonalnej rodziców wykorzystano zmodyfikowaną skalę HADS (*Hospital Anxiety and Depression Scale*) wg Zigmonda i Snaitha opracowaną w wersji polskiej (M. Majkiewicz, K. de Walden-Gałuszko, G. Chojnacka-Szawłowska).

Wyniki: W badanej grupie rodziców dzieci z wrodzonymi wadami serca (podgrupa I) wysoki poziom lęku rozpoznano u 60 rodziców (78,9%), a w grupie rodziców dzieci leczonych z powodu ostrej infekcji (podgrupa II) u 13 (20,3%). Objawy depresyjne pojawiły się u 26 rodziców (34,2%) z podgrupy I oraz u 6 rodziców (9,4%) z podgrupy II. U 32 rodziców (42,1%) z podgrupy I w badaniu w trzeciej dobie po zabiegu chirurgicznym można było dostrzec drażliwość (skala agresji), natomiast w podgrupie II w trakcie leczenia ostrej infekcji drażliwość obserwowano u 7 rodziców (10,9%).

Wnioski: Hospitalizacja dziecka oraz podjęte procedury lecznicze są dla rodziców sytuacją wysoce stresującą, mogącą wywoływać u nich podwyższony poziom lęku, objawy depresyjne czy też drażliwość, a nawet agresję.

Słowa kluczowe: wrodzona wada serca, infekcje, rodzice, psychologia.

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Introduction

The hospitalization of a child and all the medical procedures that are associated with it are a source of great stress for the parents, who are burdened with a sense of peril and uncertainty concerning the child's future. Such an event may also affect the relationships between individual family members [1]. The child's hospital stay requires a certain adaptation on the part of the parents and a rearrangement of their everyday life, so that they may continue to fulfill their role as caregivers. This may result in frustration or tensions between individual family members [2, 3].

Depending on the type and severity of the disease, children are hospitalized in different kinds of pediatric wards, ranging from facilities where a parent may stay with their child 24 hours a day to intensive care units where parental visits are greatly limited or even impossible.

Studies concerned with the emotional reactions of parents of hospitalized children mostly pertain to preterm neonates [4, 5] and children with chronic diseases [6, 7] or cancer [8, 9]. This situation is what prompted us to conduct our own study concerning the emotional reactions of parents to the hospitalization of their children in cases of both chronic and acute (but transient) diseases.

The aim of the study was to determine:

1. the emotional reaction of the parents related to the hospitalization and treatment of their children,
2. the differences in the emotional reactions of parents of children after cardiac surgery, treated in intensive care units, in comparison to the parents of children treated conservatively in general pediatric wards due to acute infection.

Material and methods

The study encompassed 140 parents (114 mothers and 26 fathers) of children treated in the Polish-American Institute of Pediatrics (Jagiellonian University Medical College) in Kraków at the turn of 2010 and 2011.

The study group was divided into two subgroups. The first subgroup consisted of 76 parents (61 mothers and 15 fathers) of children treated in the Department of Pediatric Cardiac Surgery, while the second subgroup consisted of 64 parents (53 mothers and 11 fathers) of children treated in the Department of Pediatrics, Gastroenterology and Nutrition. The parents from the first subgroup were assessed during the third day after their children had undergone surgery due to congenital heart defects, while their children were treated in the intensive care unit. The parents from the second subgroup were assessed on the second or third

day of their children's conservative treatment due to acute infections of respiratory, digestive, or urinary systems. All the children survived. Table I presents the clinical data of the study group.

In order to assess the emotional reaction of parents, a modified HADS scale (Hospital Anxiety and Depression Scale) by Zigmond and Snaith [10] was employed. Its Polish version was prepared by Majkovicz, de Walden-Gatuszko, and Chojnacka-Szawłowska [11]. The scale evaluates the levels of anxiety (7 questions), depression (7 questions), and irritability/aggression (2 questions). There are four possible answers to each question, with scores from 0 to 3. The maximum score in the anxiety and depression evaluations is 21, while the maximum score for aggression evaluation is 6. Disorders may be inferred with good probability from scores above 11 points for anxiety and depression levels, or above 5 points for irritability/aggression levels. The scale has been used with the authors' permission.

Additionally, the questionnaire included five demographic questions concerning: parent gender, parent age, child age, size of the family's town of residence, and whether the child was hospitalized for the first time. The assessment was conducted on the third day after the cardiac procedure (in the group of children with congenital heart defects) or on the second or third day after hospital admission (in the group of children with acute infection). As the results did not follow a normal distribution, non-parametric tests were employed for calculations. Statistical analysis of the results was conducted using the Mann-Whitney U test (software used: Statistica 10.0). A value of $p < 0.05$ was assumed to be statistically significant.

Results

In subgroup I (parents of children with congenital heart defects), elevated anxiety levels were observed in 60 parents (78.9%), while in subgroup II (parents of children treated for infection) the anxiety levels were elevated in 13 parents (20.3%). Borderline states were observed, respectively, in 10 parents from subgroup I (13.2%), and in 15 parents from subgroup II (23.4%). Depressive symptoms were exhibited by 26 parents from subgroup I (34.2%), and in 6 parents from subgroup II (9.4%). Borderline states in terms of depressive symptoms were observed in 38 parents from subgroup I (27.1%), and in 15 parents from subgroup II (23.4%). 32 parents (42.1%) from subgroup I showed irritability (aggression scale) on the third day after the surgery, while in subgroup II, irritability was observed in 7 parents

Tab. I. Clinical data of the study group ($n = 140$)

Subgroup	Number of parents	Gender		Parent age (years)		Child age (months)	
		women	men	arithm. mean	range	arithm. mean	range
I	76	61	15	31.3	20-48	21.9	0.2-96
II	64	53	11	29.2	23-39	24.0	0.5-39

Subgroup I – parents of children treated surgically in the Department of Pediatric Cardiac Surgery due to congenital heart defects.

Subgroup II – parents of children treated conservatively in the Department of Pediatrics, Gastroenterology and Nutrition due to infections of the respiratory, digestive, or urinary system.

(10.9%) during the treatment of acute infection. Borderline results in terms of aggression were found in 66 parents from subgroup I (47.1%), and in 34 parents from subgroup II (53.1%) (Table II).

A statistically significant difference was obtained in the study group between the emotional reaction of parents whose children were treated for congenital heart defects on the third day after the surgery, and the emotional reaction of parents whose children were treated conservatively due to acute infections ($p < 0.0001$). The observed differences applied to all emotional reactions assessed by the HADS scale, i.e. anxiety ($p < 0.0001$), depression ($p < 0.0001$), and irritability (aggression) level ($p < 0.0001$). All these reactions were statistically significantly stronger in the parents of children treated in the intensive care unit after surgical procedures due to congenital heart defects. No statistically significant differences were found in the study subgroups between the emotional reactions of men and women. In subgroup II, statistically increased levels of anxiety ($p < 0.05$) and more frequent depression occurrence ($p < 0.05$) were noted in parents whose children were hospitalized for the first time. The size of the town of residence had no statistically significant influence on the degree of the parents' emotional reaction to their child's hospitalization.

Discussion

The aim of the conducted study was to assess the influence of the hospitalization of a child on the emotional reaction of the parents, as well as to assess the differences between the emotional reactions among the parents of children treated in the intensive care unit after cardiac surgery procedures and the reactions of the parents of children treated conservatively in the general pediatric ward due to acute infection.

In both groups, the levels of parental anxiety, depression, and irritability were relatively high. Similar reactions to hospitalization were also observed in other studies [12, 13]. The intensity of the emotional reactions was directly related to the severity of the child's disease, the extent of changes in family functioning, as well as to some aspects of interactions with the medical staff. A tendency was observed in the parents to blame themselves for their children's ailments. In subgroup II (parents of children treated in the general pediatric ward), we additionally observed statistically significantly higher levels of anxiety and more frequent occurrence of depressive symptoms among the parents whose children were hospitalized for the first time.

A previous study by Składzień *et al.*, conducted among parents of children treated surgically for congenital heart defects, demonstrated that the levels of anxiety, depression, and irritability of the parents were reduced significantly during the first postoperative days in comparison to their condition prior to the cardiac procedure [14]. Notwithstanding this, all the emotional reactions assessed with the HADS scale were significantly more intense in the parents of children who had undergone surgery and were treated conservatively in comparison to the parents of children treated for

Tab. II. Hospital Anxiety and Depression Scale results for subgroup I and subgroup II, depending on the gender of the parents

HADS subscales	Subgroup I		Subgroup II	
	W (n = 61)	M (n = 15)	W (n = 53)	M (n = 11)
anxiety	49	11	11	2
depression	22	4	6	0
irritability/aggression	28	4	5	2

Subgroup I – parents of children treated surgically in the Department of Pediatric Cardiac Surgery due to congenital heart defects;
 Subgroup II – parents of children treated conservatively in the Department of Pediatrics, Gastroenterology and Nutrition due to infections of the respiratory, digestive, or urinary system.

acute infections in the general pediatric ward. This difference may have resulted from the fact that the parents from subgroup I did not have the opportunity to remain with their children 24 hours a day, as visiting time in the intensive care unit is limited to 2 hours a day, whereas the parents of children with acute infections could accompany them the whole time if they wished. Limited contact with the child consequently gives rise to many questions and doubts concerning the child's condition (especially emotional) during the parents' absence. This may, in turn, lead to the accumulation of negative emotions in the parents.

It appears noteworthy that women constituted a decisive majority in the studied group (81.4%). A similar phenomenon has been observed by other authors [4, 14]. It can be explained by the deep-rooted family role division in our society, in which the mother is directly responsible for child care, while the father is supposed to be the foremost provider of financial security to the family. Therefore, the persons who most frequently stay with the children are the mothers, and thus mothers constituted the majority of our study's respondents. It has been observed that mothers who were separated from their children for prolonged periods of time exhibited significantly higher levels of anxiety, depression, and aggression [15]. In our study, the parents from subgroup I (i.e. the ones who had limited contact with their children) showed significantly higher levels of anxiety, depression, or irritability. Over 80% of them were mothers.

Conclusions

The aforementioned study results clearly indicate that children's hospitalization is associated with the development of negative emotions such as anxiety, depression, or aggression in the parents. Significant intensification of these symptoms was observed in the parents who could not stay by their children's beds 24 hours a day. Therefore, providing psychological care for the whole family, from admission to discharge, is highly justifiable. Lack of information concerning their children's condition and the progress of their therapy intensified the parents' negative emotional reactions; hence, educating the families, providing them with kindness and understanding, and ensuring the cooperation of the whole medical personnel in this respect is essential.

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