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Emotional Reactions in Hospitalized Children

[1] Elda Skenderi, [2] Alberta Shkembi, [3] Gjeorgjina Kuli-Lito, [4] Laureta Rosa

[1] [4] Pediatrician, General Pediatric Ward, University Hospital Center "Mother Teresa", Tirana, Albania
[2] Psychologist, General Pediatric Ward, University Hospital Center "Mother Teresa", Tirana, Albania
[3] Professor, Head of Pediatric Infectious Disease Ward, University Hospital Center "Mother Teresa", Tirana, Albania
Corresponding Author Email: [1] elda_skenderi@yahoo.com, [2] alberta.shkembi@yahoo.com, [3] gkuli-lito@hotmail.com, [4] rosa.laureta@yahoo.com

Abstract*— Hospitalization or inpatient care is the most restrictive form of treatment. Hospitalized children and their parents have to cope with a variety of stressors, which include factors directly relevant to the illness or injury such as physical discomfort, loss of autonomy, absence from school, the effects of medications and changes in family interactions. Anxiety is a natural human reaction and it serves an important biological function, it is an alarm system that is activated whenever we perceive danger or a threat. Anxiety is a normal part of childhood and every child goes through phases which are temporary and usually harmless. 50 children (6-12years), hospitalized for acute childhood diseases, were subject of anxieties' symptoms measure. 22% of children resulted with high anxiety levels, 64% resulted with moderate levels of anxiety, and 14% resulted with low levels of anxiety. The experience of being hospitalized for an illness is usually a traumatic and anxiety –producing one, particularly for children. Pediatricians and psychologists have become increasingly aware that illness and hospitalization can threaten a child's mental and emotional development. Psychological well-being of the young patients demands a good cooperation between medical staff and pediatric psychologist.

Keywords: Anxiety, Disease, Hospitalization, Children, Stressor.

I. INTRODUCTION

Anxiety is a natural emotion that is vital for survival in dangerous situations. It is a normal reaction to stress and new situations an individual faces, and can be beneficial in some of them when is in proportion with the gravity of the danger. While stress is a response to an external issue, anxiety is a response to stress. Anxiety is a complex response to real or perceived threats, it can involve cognitive, physical and behavioral changes. Real or perceived danger causes a rush of adrenaline, a hormone and chemical messenger in the brain, which triggers anxiety reactions in a response called "fight-or-flight" response, which prepare the body to fight the source of danger or flee from it.

Emotional feelings like fear or anxiety are processed in an area of the brain called "amygdala", which plays an essential role in managing emotional responses. When an individual perceive danger or is feeling stressed, anxious or frightened, the brain send signals to other body parts which prepare it to react "fight or flee." So it is obvious that anxiety can significantly affect the body and in long terms increases the risk of developing chronic physical conditions [1, 2, 3]. Respiratory system is the first system that inflict changes, breathing is rapid and shallow and cause symptoms like: dizziness, lightheadedness, tingling, weakness. Anxiety cause changes in heart rate and blood circulation too. An increased heart rate and blood flow carries more oxygen and nutrients to the muscles making easer the response flee or fight. Vasoconstriction causes hot flashes which in return the body sweats to cool down. Anxiety stimulates the response of immune system, however when prolonged it impairs natural immune response due to continues cortisol production. Anxiety inflicts digestion too and the individual experience nausea, diarrhea and loose of appetite. Long term complications include: depression, digestive issues, insomnia, chronic pain, impaired academic and work performance, deprived socialization, substance abuse and suicidal thoughts [4, 5, 6].

The amygdala is that part of the brain which is responsible for these reactions. When an individual feels stressed or afraid, the amygdala releases stress hormones that prepare the body to fight the threat or flee from danger. The frontal lobes are those parts of human brain where the individual rationalizes the situations and make decisions. When an individual senses a threat, the amygdala may automatically activate the "fight or flight" response, however the frontal lobes process the information to determine if the threat is real and what a logical reaction would be according to the circumstances. If a threat is not serious the frontal lobes take control and most people will respond with a more logical reaction. In an amygdala hijack an individual can not respond rationally to a threat, because the amygdala over-powers the frontal lobes, creating in consequence an exaggerated stress response [7, 8]. Amygdala hijack is a major contributor to pathological anxiety. While many people occasionally experience anxiety symptoms in daily life, people with anxiety disorder experience them at persistent or extreme levels. Pathological anxiety happens when the brain circuits involved in fear become over-sensitive and the individual experience excessive worry, hypervigilance, physical symptoms, and unusual behavioral responses to situations that others would not worry. Once anxiety reaches the state of a disorder, it interferes with daily function [9,10].

As children are vulnerable to stressful life-events, and admission to hospital is one of them, a study was conducted to measure the extend of anxiety symptoms in hospitalized

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children.

II. METHOD & MATERIAL

This is a descriptive and explorative study. In it are included 50 children of age 6-12years, hospitalized in the General Pediatric Ward in the University Hospital Center "Mother Teresa" in Tirana, during January 2022 – December 2022.

The instruments administrated in the study are:

1) Epidemiological data extracted from clinical records: gender, diagnosis, hospitalization period.
2) Anxiety was identified by State Trait Anxiety Inventory of Children STAIC for self-report of anxiety of the child. STAIC contains 20 situations which define how the child feels in general. The answer to this situations are built according to Likert scale which has three options: never, sometimes, often. The options are equivalent to scores: never=0, sometimes=1, often=3. Anxiety is divided in three levels according to the scores into: Low level of anxiety, Moderate level of anxiety, and high level of anxiety.

III. RESULTS

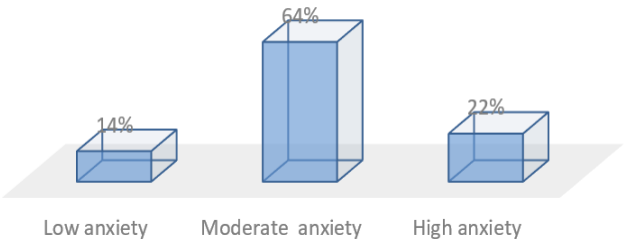
Of the 50 children included in the study 26(52%) were females and 24(48%) were males. 11(22%) of children resulted with high levels of anxiety, 32(64%) of children resulted with moderate levels of anxiety and 7(14%) of children resulted with low levels of anxiety.

Explanation to the following graphics

1. Low levels of anxiety 0-13 scores
2. Moderate levels of anxiety 14-28 score
3. High levels of anxiety 29-40 score

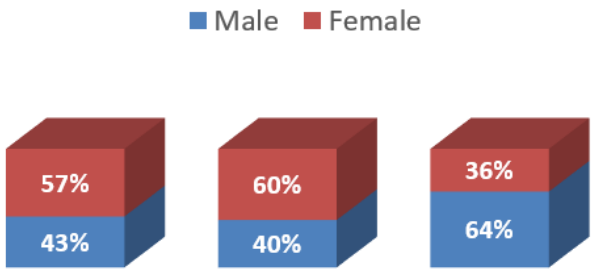
Table 1. Data of anxiety levels in the studied group

	Frequency	Percent	Cumulative percent
1	7	14	14
2	32	64	78
3	11	22	100
Total	50	100	



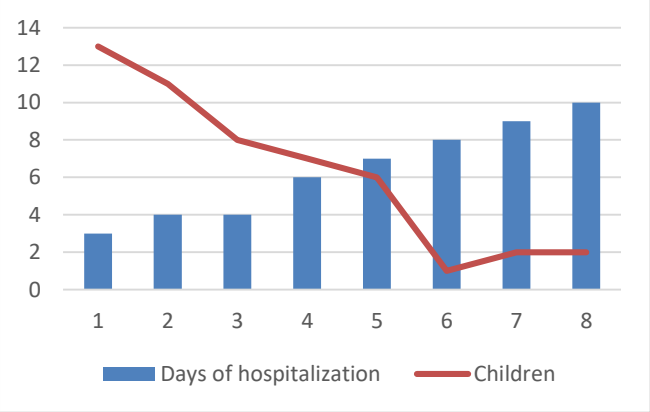
Graph 1. Anxiety levels in studied group

Males predominated in the high level anxiety group with 64% of cases. While females predominated in the moderate and low anxiety level group with 60% and 57% respectively.



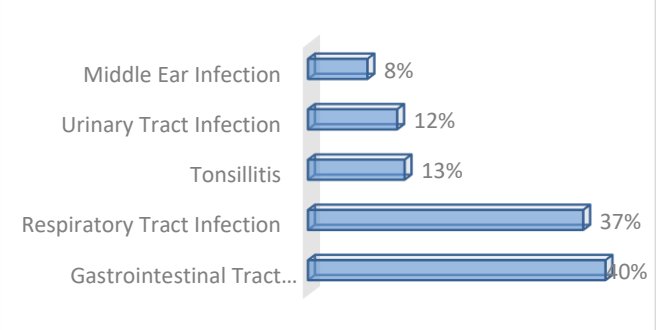
Graph 2. Gender distribution to levels of anxiety

Hospitalization period ranges from 3 days to 10 days. The median time of hospitalization was 4.34 days.



Graph 3. Hospitalization period

The most common clinical diagnosis resulted Gastrointestinal Tract Infections in 40% of children, followed by Respiratory Tract Infections in 37% of children, Tonsillitis in 13% children, Urinary Tract Infections in 12% of children, and Middle Ear Infections in 8% of children.



Graph 4. Clinical diagnosis

IV. DISCUSSION

Disease and hospitalization are the most stressful events a child would face in his life. Hospitalization or inpatient care is the most restrictive form of treatment. Even with the most contemporary medical care, which provides a safe and healing environment to the little patient, the experience of illness and hospitalization itself exacerbate emotions and increase feelings of depression and anxiety. Illness is a major

stressor in children life, various symptoms of the disease put the body into a state of continuous stress, which may include fatigue, pain, immobility. Due to cognitive and emotional limitations and dependence on others, children are particularly vulnerable to these stressors. So the extent of negative reactions to illness in children is related to their level of development.

Despite concern to the nature of the disease and its consequences, hospitalized children and their parents have to cope with a variety of stressors which include loss of autonomy, absence from school, the effects of medications and changes in family interactions. Aspects related to the hospital which can provoke fear and anxiety include unfamiliar and strange surrounding, hospital noises, hospital bed, equipment, hospital rules and visiting hours, separation from family and friends, and unusual often painful medical procedures, specially fear from injection needle and fear to death.

It has been reported that children show a variety of negative behavioral and emotional reactions at some point during a stay in hospital. These range from temporary distress to chronic depression and include agitated behavior, anxiety, withdrawal, enuresis, phobia, sleep disturbances, and appetite problems [11,12,13]. Most often these negative emotional effects subsided in the weeks soon after discharge, however in some children these reactions lasted after they left hospital [14,15]. A longer duration of hospitalization increases the likelihood of negative reactions, as it is associated with factors such as more serious health conditions and higher levels of medical interventions. Previous medical experiences or hospitalizations have a greater influence to the occurrence of these negative reactions [16].

The occurrence of negative reactions in hospitalized children is related to the age and the level of developmental [17,18]. Young children are more prone to report anxiety and exhibit greater behavioral distress in medical situations then older children. Each developmental period has vulnerabilities that influence how stressors are perceived and how responses are manifested [19]. Younger and less cognitively developed children are less likely to understand the cause of pain, are less likely to understand medical procedures and hospitalization, are less likely to seek out information about impending medical procedures, but are more likely than older children to have frightening and guilty misconceptions regarding hospitalization [20,21,22]. Younger children are likely to exhibit more symptoms to distress when pain and illness occur, have more externally oriented locus of control beliefs about illness and engage in fewer coping behaviors during medical procedures [23].

Knowledge of the disease has an effect on the anxiety of the children. One of the reasons why children get frightened and experience negative feelings is the fear of the unknown. So getting the child ready enough for the hospitalization and for near-future medical procedures or other events helps reducing anxiety. Preparation helps the child feeling as he has gained control over the situation, consequently fear is considerably abated. Fear gets stronger when the child does not know or can not understand what is happening and why it is happening. Even very young children have the ability to achieve a sophisticated level of understanding of their illness, provided the information is given in a manner and form that is relevant to their level of understanding [24,25].

A crucial factor in children's response to medical events is the reaction of the parents. Parents often perceive their own anxiety as greater than that of the child. The anxiety of the parents might not always be obvious, even when it is extreme. When a parent expresses negative reactions to child's illness or hospitalization it likely impacts the coping ability of their child. Parents behavior with a more emotive emphasis has been linked to children's poorer responses to the stress of hospitalization [26,27,28].

Even though at the general pediatric ward are admitted moderately ill children, suffering from common acute infections disease of childhood, which have a relatively short time of hospitalization (4.34 days), most of the children (64%) manifested moderate levels of anxiety and a considerably number (22%) manifested high levels of anxiety (Graph.1). There were not found significant changes between genders (male and female). The number of males was slightly greater in the group with high levels of anxiety, the same was in the group with low levels of anxiety whereas most of the females were in the group with moderate levels of anxiety.

Anxiety disorders are common psychological disorders experienced by youth with reported rates of 10-20% in the general population and primary care settings. Interviews are the most common method for assessing anxiety disorders in youth. Numerous interview schedules have been developed and tested. Semi-structured interviews for the assessment of anxiety disorders in children and adolescents provide a structured interviewing format, while also allowing for elaboration from informants as judged appropriate by a diagnostician [29,30]. One of the most widely used methods for assessing youth anxiety is a self-report inventory. Numerous self-report inventories exist including: The State-Trait Anxiety Inventory for Children (STAIC), which is used in this study. The STAIC consist of two separate 20-items inventories: the state scale, designed to assess present state and situation-specific anxiety and the trait scale, designed to assess stability in anxiety across situations. Findings suggest that this measure is useful as a general screening instrument for anxiety. Self-reports allow for a cost-effective examination of anxiety symptomatology, however results with children must be interpreted with caution. These measures may not individualize specific fears for a child, preventing so individualization of treatment. Younger children may be not capable of understanding the questions posed on them or their corresponding response scale. Furthermore anxious children may respond in a socially desirable manner due to the fear of negative evaluation [31,32]. Considering the negative impact which

illness and hospitalization have on the emotional status of the children a high index of suspicion should be maintained towards the manifestation of anxiety symptoms in hospitalized children. An appropriate approach help children coping with the stressor and recovering medically and emotionally too.

V. CONCLUSION

The experience of being hospitalized for an illness is usually a traumatic and anxiety –producing one, particularly for children. Common hospital stressors include fear of injury, fear of needles and pain, loss of control, separation from family and friends and fear of death. Pediatricians and psychologists have become increasingly aware that illness and hospitalization can threaten a child's mental and emotional development. Psychological well-being of the young patients demands a good cooperation between medical staff and pediatric psychologist.

Compliance with ethical standards

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Disclosure of conflict of interest

Authors declare no conflict of interest.

Statement of ethical approval

The present research work does not contain any studies performed on animals/humans subjects by any of the authors.

Statement of informed consent

Informed Consent was taken from the parents of hospitalized children included in the study, for the interview and for using the data of their medical records, providing anonymity.

REFERENCES

[1]. Panksepp J. A critical role for "affective neuroscience" in resolving what is basic about basic emotions. *Psychol Rev.* 1992; 99:554–560. [PubMed] [Google Scholar]

[2]. Craig KJ., Brown KJ., Baum A. Environmental factors in the etiology of anxiety. In: Bloom FE, Kupfer DJ, eds. *Psychopharmacology: the Fourth Generation of Progress. New York, NY: Raven Press;* 1995:1325–1339. [Google Scholar]

[3]. Barlow DH. Unraveling the mysteries of anxiety and its disorders from the perspective of emotion theory. *Am Psychol.* 2000;55:1247–1263. [PubMed] [Google Scholar]

[4]. Bakshi VP., Shelton SE., Kalin NH. Neurobiological correlates of defensive behaviors. In: Mayer EA, Sapers CB, eds. *Progress in Brain Research. Vol 122. Amsterdam, The Netherlands: Elsevier Science BV;* 2000:105–115. [PubMed] [Google Scholar]

[5]. Blanchard DC., Hynd AL., Minke KA., Monemoto T., Blanchard RJ. Human defensive behaviors to threat scenarios show parallels to fear- and anxiety-related defense patterns of non-human mammals. *Neurosci Biobehav Rev.* 2001;25:761–770. [PubMed] [Google Scholar]

[6]. Panksepp J. The sources of fear and anxiety in the brain. In: Panksepp J, ed. *Affective Neuroscience. New York, NY: Oxford University Press;* 1998:206

[7]. LeDoux J. Emotion circuits in the brain. *Annu Rev Neurosci.* 2000;23:155–184. [PubMed] [Google Scholar]–222. [Google Scholar]

[8]. LeDoux J. The amygdala and emotion: a view through fear. In: Aggleton JP, ed. *The Amygdala. Oxford, UK: Oxford University Press;* 2000:289–310. [Google Scholar]

[9]. P.C. Kendall et al. On the physiological symaptom constellation in youth with generalized anxiety disorder (GAD) J Anxiety Disorder (2003)

[10]. Barrios BA, Hartmann DB. Fears and anxieties. Marsh EJ, Terdal LG, eds. *Behavioral Assessment of Childhood Disorders*. 2nd ed. New York, NY: Guilford; 1988. 196-264.

[11]. Connolly, D., Mc Clowry,S., Hayman, L., Mahony, L. & Artman,M. (2004).Posttraumatic stress disorder in children after cardiac surgery. The Journal of Pediatrics, 144, 480-4.

[12]. Papaqkostas,K., Moraitis, D.,Lancaster, J& Mc Cormick, M.S.(2003). Depressive symptoms in children after Tonsillectomy. International Journal of Pediatric Otorinolaryngology, 67, 127-32.

[13]. Peterson, L. & Mori. (1988) Preparation for hospitalization in D.K. Routh (Ed.). Handbook of Pediatric Psychology (pp. 460-91). New York: Guilford Press.

[14]. Quinton, D. & Rutter, M. (1976). Early hospital admission and later disturbances of behavior: an attempted replication of Douglas' findings. Developmental Medicine and Child Neurology, 18, 447-59.

[15]. Thompson, R.H. & Vernon, D.T.A. (1993) Research on children's behavior after hospitalization: a review and synthesis. Developmental and Behavioral Pediatrics, 14, 28-35.

[16]. Yap. J.N. (1988). The effects of hospitalization and surgery on children: a critical review. Journal of Applied Developmental Psychology, 9, 349-58.

[17]. Dahlquist, L.M., Power, T.G., Cox, C.N. & Fernbah, D.J. (1994). Parenting and child distress during cancer procedures: a multi dimensional assessment. Children's Health Care, 23, 149-66.

[18]. Melamed, B.G. & Ridley- Johnson, R.(1988). Psychological preparation of families for hospitalization. Developmental and Behavioral Pediatrics, 9, 96-102.

[19]. Vessey, J.A.(2003). Children's psychological response to hospitalization. Annual Review of Nursing Research, 21, 173-201.

[20]. Bush, J.P. (1987). Pain in children: a review of the literature from a developmental perspective. Psychology and Health, 1, 215-36.

[21]. Eiser, C. & Patterson, D. (1984). Children's perceptions of hospital: a preliminary study. International Journal of Nursing Studies, 21, 45-50.

[22]. Peterson, L. & Toler, S.M. (1986). An information seeking disposition in child surgery patients. Health Psychology: 5, 343-58.

[23]. Redpath, C.C. & Rogers, M.C. (1984). Healthy young children's concepts of hospitals, medical personnel, operations and illness. Journal of Pediatric Psychology, 9, 29-40.

[24]. Rudolph, K.D, Dennig, M.D. & Weisz, J.R. (1995). Determinants and consequences of children's coping in the medical setting: conceptualization, review, and critique. Psychological Bulletin, 118, 328-57.
[25]. Sanger, M.S., Sandler, H.K. & Perrin, E.C. (1988). Concepts of illness and perception of control in healthy children with chronic illnesses. Journal of Developmental and Behavioral Pediatrics, 9, 252-6.
[26]. Ogilvie, L. (1990). Hospitalization of children for surgery: the parent's view. Children's Health Care. 19, 49-56.
[27]. DuHamel, K.N., Manne, S., Nereo, N. et al (2004). Cognitive processing among mothers of children undergoing bone marrow / stem cell transplation. Psychosomatic Medicine. 66, 92-103.
[28]. Melnyk, B.M. & Feinstein, N.F. (2001). Mediating functions of maternal anxiety and participation in care on young children's post hospital adjustment. Research in Nursing and Health, 24, 18-26.
[29]. Costello, E., Mustillo, S., Keeler, G., & Angold, A. (2004). Prevalence of psychiatric disorders in children and adolescents. In B. Levine, J. Petrila, & K. Hennessey (Eds), *Mental health services: A public health perspective* (pp.111–128). New York: Oxford University Press.
[30]. Frick, P. J., Silverthorn, P., & Evans, C. (1994). Assessment of childhood anxiety using structured interviews: Patterns of agreement among informants and association with maternal anxiety. *Psychological Assessment, 6*, 372–379.
[31]. March, J. S. & Sullivan, K. (1999). Test-retest reliability of the Multidimensional Anxiety Scale for Children. *Journal of Anxiety Disorders, 13*, 349–358.
[32]. Seligman, L. D., Ollendick, T. H., Langley, A. K., & Baldacci, H. B. (2004). The utility of measures of child and adolescent anxiety: A meta-analytic review of the Revised Children's Anxiety Scale, the State-Trait Anxiety Inventory for Children, and the Child Behavior Checklist. *Journal of Clinical Child and Adolescent Psychology, 33*, 557–565.