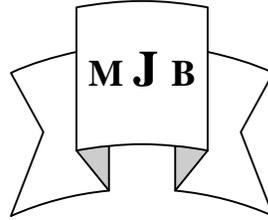


Psychological Stress of Companions (Care givers) of Children in the Pediatric Intensive Care Unit

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Abstract

Background: Admission of a child to the Pediatric Intensive Care Unit (PICU) can create high parental and other companions psychological problems. Many factors contribute in a negative way to this abnormality. Hospital Anxiety and Depression Scale (HADS) has been used to help physicians to identify these care givers at risk and address contributing factors.

Methods: The HADS has been administered to 42 care givers (26 in PICU and 16 as a control group in a general pediatric ward) in Babylon Gynecology and Children Teaching Hospital after their staying in hospital for 14 days. Factors which may have an effect on psychological status have been studied.

Results: Fifteen care givers (57.7%) show depression and anxiety in the range of (11-21) according to HADS compared to only 2 (12.5%) of the control group $p < 0.05$. All care givers think their patients are in pain and all complained of noise in the PICU as causes of their distress. Twenty four patients were under ventilator, fourteen care givers (93.3%) fall in the (11-21) range according to HADS..

Conclusion: Care givers in the PICU were at more risk of psychological stress compared to the control group and there are stressful factors playing a significant role in aggravating this abnormality.

الإجهاد النفسي للمرافقين في وحدة العناية المركزة للأطفال

الخلاصة

خلفية الدراسة: دخول المريض في وحدة العناية المركزة للأطفال يسبب مشاكل نفسية لدى المرافقين من الأمهات و غيرهم. توجد عوامل خاصة بهذه الوحدة تؤثر سلبا على نفسية هؤلاء المرافقين. تم استعمال مقياس خاص لفرز مثل هذه الحالات التي تكون تحت هذه الخطورة (هادز).

طريقة البحث: أخذت عينة من 42 مرافقا 26 كانوا في وحدة العناية المركزة للأطفال و 16 مرافقا اخذوا كعينة ضابطة من وحدات الأطفال العادية في مستشفى بابل للنسائية و الأطفال و الذي قد مر على بقائهم في المستشفى 14 يوما و تمت مقابلتهم حسب الاستمارة الخاصة (مقياس الكآبة و القلق النفسي في المستشفى) كما و درست العوامل المؤثرة.

النتائج: بينت الدراسة إن 57.7% من المرافقين قد ظهرت عليهم علامات القلق و الكآبة بنسبة معنوية عالية حسب الاستمارة الخاصة مقارنة بالعينة الضابطة التي أظهرت 12.5%.

كل المرافقين في عينة البحث يعتقدون أن مرضاهم يعانون من الآلام كما إن نسبة كبيرة منهم يشكون من آثار الضوضاء على حالتهم النفسية.

خمس و عشرون مريضا كانوا يتلقون التنفس الاصطناعي، أربعة عشر مرافقا لهؤلاء المرضى اظهروا علامات الضغط النفسي بصورة عالية.

الاستنتاج: المرافقون للمرضى الأطفال في وحدة العناية المركزة يعانون من أعراض الإجهاد النفسي بدرجة عالية مقارنة بالمرافقين في وحدات الأطفال الاعتيادية.

Introduction

Anxiety and depression are common psychological disorders among all ages and all societies, they reduce quality of life and from our medical interest they disturb doctor-patient relationship which is of extreme importance specially in the PICU(Pediatric Intensive Care Unit) setting. The intensive care unit is an emotional charged and highly stressful place. Sources of stress to caregivers in the PICU are many including noises from monitors, alarms of machines, staff noises, bright lights, frequent invasive procedures and deterioration of their child or other children in the unit. Studying emotions of care givers in PICU is important to define vulnerable individuals for early management and prevention. The Hospital Anxiety and Depression Scale (HADS) is a self-report rating scale. It is designed to measure anxiety and depression in in-patients and out-patients settings. It is not designed to diagnose psychiatric illnesses but it is a screening tool used to help physicians to study the behavior of patients or their care givers. There are 14 subscales 7 for each anxiety and depression. The sum of the 7 subscales ranges from 0-21 divided into 0-7(normal) 8-10(borderline abnormal) 11-21 (abnormal) for each abnormality [1]. Hospital Anxiety and Depression Scale has been used for this purpose and it has been found applicable for different nations [2, 3].

Acute stress has been studied on parents just on their admission to the PICU which can easily be managed , but cumulative stress can have a damaging effect which can last long after discharge from PICU. Depression clinical features should be present for 14 days according to ICD-10 classification(International

Statistical Classification of Diseases and Related Health Problems)[4]. In order to fulfill the criteria for definition. children and their parents in the PICU are subjected to different stressful situations ranging from laboratory tests to invasive procedures and this in itself leave them with an abnormal psychological outcome affecting their life long after discharge from the PICU[5]. Other scales have been used to assess parental stress in different research papers[6]

Even admission for a simple illness can create parental distress in some degree [7] which might be overlooked by an unworried physician.

The aim of the study is to determine whether PICU admission of children is associated with a greater psychiatric morbidity in care givers as compared with general pediatric ward admission and to study contributing factors.

Methods

A prospective cohort study was performed over 10 months from August 2009 through October 2010 in the Pediatric Intensive Care Unit (PICU) which has been constructed recently in a small space in the original building of Babylon Gynecology and Children Teaching Hospital. It is a 10 bed unit staffed mainly by male nurses with no official parental bed spaces but patients' companions are left to stay with their patients. Almost all admissions are from the emergency and pediatric wards and some of them were referred from other governorates. Neonates are also admitted in a separate room as there is no NICU (Neonatal Intensive Care Unit) in the hospital at the time of the study. The number of patients in the PICU during the study period was 533; twenty six of them fulfilled the criteria of staying in PICU for 14 days. All care givers were

interviewed after getting their verbal consent by a pediatric consultant according to HADS(Hospital Anxiety and Depression Scale).Sixteen care givers were taken as a control group in the general pediatric ward matched for the same period of hospital stay. According to HADS, a score of 0-7 was considered normal, 8-10=Borderline abnormal, 11-21=Abnormal. Factors thought to have an effect on

psychological status of care givers were recorded.

Data analysis was performed according to ANOVA t-test

Results

Among 533 PICU admissions, 26 patients fulfilled the inclusion criteria of staying in hospital for 14 days, all caregivers were interviewed.

Table 1 (Care givers' characteristics)

Care giver	Number	%
Mother	14	53.8
Grand mother	10	38.5
Others	2	7.7
Education		
illiterate	10	38.5
Primary school	7	26.9
Intermediary school	7	26.9
University	2	7.7

Table 2 Type of disease and Fate of patients

Type of disease		
Neurological	9	34.6
Respiratory	5	19.2
Cardiovascular	3	11.5
Neuromuscular	4	15.4
Congenital anomalies	2	7.7
Infection (Tetanus 2,septicemia 1)	3	11.5
Fate of patient		
Discharged well	12	46.2
Transferred	1	3.8
Died	10	38.5
Still in PICU	3	11.5

Factors which affect the care givers in the PICU have been studied and related to their anxiety and depression in the range of(11-21) which demonstrates the

obvious abnormality excluding the borderline degree.The number of obvious depression and anxiety was 15 as it appears in table (3).

Table 3 Effect of factors on psychological status of children care givers.

Factors	Yes	%	No	%	A&D 11-21(HADS)	%
Noise	25/26	96.2	1	0.8	14/15	93.3
Patient in pain	26/26	100	-	-	14/15	93.3
Prognosis	7/26	26.9	19/26	73.1	4/15 11/15	26.7 73.3
Ventilated	25/26	96.2	1/26	3.8	14/15	93.3
Holiday	13/26	50	13/26	50	8/15	53.3
Previous admission	6/26	23.1	20	76.9	3/15	20
How long to stay	0	0	26	100	15	100
Age					10	75
<40	17/26				5	25
>40	9/26					
Hours of sleep<5	15/26				10	75
>5	11/26				5	25

Twenty six care givers in the PICU and 16 care givers in the general ward were taken as a control to study the

psychological status of caregivers inflicted by the PICU setting

Table(4) Anxiety and depression in care givers in (PICU) and control group comparing the obvious abnormal on HADS(11-21).

Group	Ab A&D 11-21	%	P
Caregivers PICU	15/26	57.7	<0.05
Control	2/16	12.5	

Note:AB.A(Abnormal Anxiety) AB.D(Abnormal Depression)

Discussion

The study has been carried out in the PICU where parents or caregivers were left to stay with their patients day and night but without a private accommodation which is in a way a modified unit with parent bed spaces, a method used to lessen the stress on care givers[8]. In the obvious form of anxiety

and depression(HADS 11-21) fifteen care givers in the studied group are represented(57.7%) compared to 2 care givers (12.5%) in the control group (P<0.05).These findings are in agreement with other studies [9,10,11]. Noises were a major cause of stress affecting 96.2% of caregivers. In a study constructed to assess the level of noise in

a PICU found the limit was exceeding the accepted WHO recommendations [12]. All care givers were worried that their children are suffering from pain which goes with a study done in neonatal intensive care units in the United Kingdom [13]. All caregivers do not know for how long are they going to be in the unit and all of them got high grading on HADS. Conflicts arise in medical care if the patients stay for a long time in hospital affects psychological state of parents [14]. Although caregivers are left to stay with their children in the PICU still the level of stress is high which may be due to a hidden stress built over the years due to different stressful situations inflicted on these caregivers as part of the general disturbed situation of the country. Stress can be minimized if parental needs are met and their worries are addressed [15,16]

Child being ventilated and less hours of sleep have an effect on the psychological status of caregivers as in table (3).

Conclusion

Care givers in the PICU were subjected to a higher level of stress than control. They are subjected to a number of avoidable stressful factors. (HADS) can be applied on our patients after being translated to Arabic language.

Recommendations

Expanding the existing PICU to accommodate for parental spaces. Parental worries should be discussed. Noises can be reduced by ear plugs or head phones.

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