

## Nursing Support and Stress among Mothers of Hospitalized Children

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**Abstract:** The hospitalization of a child is a stressful experience for parents, especially mothers. Pediatric nurses are in a significant position to support mothers as they provide care to their hospitalized child. The study aim was to assess the nursing support provided to mothers of hospitalized children both in inpatient ward and ICU, and to investigate its relation to mothers' stress. This cross-sectional analytical study was carried on 362 mothers of children hospitalized in the inpatient pediatric ward (212) and in the ICU (150) of four general hospitals in Port-Said. Data were collected using a structured interview questionnaire that included the Nurses Parents Support Tool (NPST) and the Parental Stress Scale. The fieldwork lasted from September 2009 through August 2010. The results showed that the mothers in both groups received little nursing support, especially in ICUs ( $p < 0.001$ ). A statistically significant negative weak correlation ( $r = -0.20$ ,  $p < 0.05$ ) was found between the total scores of support and stress. The group (ward or ICU) and mother education were the independent positive predictors of the parental stress score, while the length of hospital stay was a negative predictor. In conclusion, the mothers of hospitalized children receive a low level of support from nurses, and consequently have high levels of stress. Nurses should be aware of the various approaches and types of nursing support that can relieve parent's stress and enhance their coping. Further research is recommended to develop and test culture sensitive tools to assess parents' stress in our community. [Amal Ahmed Khalil Morsy. **Nursing Support and Stress among Mothers of Hospitalized Children.** *J Am Sci* 2012;8(1s):135-141]. (ISSN: 1545-1003). <http://www.jofamericanscience.org>. 21

**Key words:** Nursing Support, Parental Stress, Hospitalized Children

### 1. Introduction

The hospitalization of a child is a stressful experience for parents, especially mothers. Parents experience tremendous challenges with changes in their parental role when their child is cared for by health care professionals in an unknown environment. Additionally, they often have to provide support to other family members, such as child's siblings and grandparents<sup>(1)</sup>. Parents in hospital settings encounter the challenges of facing boundaries, attempting to understand, coping with uncertainty and seeking reassurance from health care providers<sup>(2)</sup>.

The hospital environment in general and of the ICU in particular is a source of phobias and anxiety among the parents of the sick child<sup>(3)</sup>. The factors associated with this stress include the physical environment, physical appearance and behavior of the child, alterations in parental role, and staff/parent interactions<sup>(4)</sup>.

In order to cope with this stressful experience, parents, often mothers, need information about the child's condition, prognosis, treatment plan, and tests. Information information-centered dialogue with the healthcare providers supports parents in their care giving functions through fulfilling their understanding needs<sup>(5)</sup>. This helps them to successfully overcome challenges and in turn provide appropriate support to their children and fulfill their multiple roles within the family<sup>(6)</sup>.

Pediatric nurses are in a significant position to support mothers as they provide care to their sick child, as they are in regular contact with mother during the child's hospitalization<sup>(7)</sup>. This is achieved through education and support<sup>(8)</sup>. This support can be in the form of informational support through providing clear information to parents about the child's illness, and about parental rights and responsibilities during the child's hospitalization; emotional support through listening, and helping parents cope with the child's illness and its impact on other aspects of their lives; appraisal support by reinforcing the parental role with the child; and, instrumental support that includes assistance of any kind, such as financial, time, or environmental modifications<sup>(9)</sup>.

#### Aim of the study

This study aim was to assess the nursing support provided to mothers of hospitalized children both in inpatient ward and ICU, and to investigate its relation to mothers' stress.

### 2. Subjects and Methods

#### Design and setting:

A cross-sectional analytical study was used in carrying out the study in the inpatient pediatric ward and ICU affiliated to the Port-Said General Hospital, Port-Fouad General Hospital, El-Nasr General Hospital and El-Tadamon Hospital.

**Sample:**

The study sample consisted of 362 mothers of children hospitalized in the inpatient pediatric ward (212) and in the ICU (150) of the above mentioned settings. They were recruited consecutively with no set eligibility criteria, and to fulfill the required sample size. This was calculated to estimate a prevalence of a high nursing support of 20% or higher, with 1% standard error, at 95% confidence level taking into account an expected dropout rate of about 15%, and with a finite population correction using Epi-Info computer software package.

**Data collection tools:**

A structured interview questionnaire form composed of three parts was used to collect the data. The first part served to collect demographic of the parents such as age, education, job status, and crowding index. It also involved child's demographic (age, gender, number of siblings, and birth order) and disease (diagnosis, length of stay, previous hospitalization) data.

The second part was the Nurses Parents Support Tool (NPST). It is a 21-item questionnaire developed by *Miles et al. (1999)*<sup>(9)</sup> to assess the type of nursing support that parents receive during the hospitalization of their children in inpatient pediatric ward and ICU. The 21 items are classified into four subscales, namely information giving and communication support (9 items as for example "help me understand what is done to child", "tell me about changes in my child's condition," emotional support (3 items as for example "help me talk about feelings, worries, concerns," appraisal support (4 items as for example "make me feel important as parent," and instrumental support (5 items as for example "help me know names and roles of staff", "gave good care to my child." It is scored on a 5-point Likert scale ranging from 1 for "almost never" to 5 for "almost always, with higher scores indicating more support. The technique of translation-back-translation was used to translate the scale into Arabic while to maintain its validity<sup>(10)</sup>. Its reliability was assessed through measuring its internal consistency. Its Cronbach alpha coefficient was 0.80 in the original testing (*Miles et al., 1999*)<sup>(9)</sup>, and 0.93 in the present study pilot testing, indicating good reliability. In order to estimate the prevalence of high support, the scale was dichotomized into "low support" including the lowest three categories (1-3 or 60%), and "high" that includes the two highest categories (4-5 or >60%).

The third part of the tool consisted of the Parental Stress Scale<sup>(11)</sup>, a self-report 18-item scale intended to assess stress among parents of children with and without clinical problems. It includes items as "I am happy in my role as a parent; I sometimes

worry whether I am doing enough for my child." Parents are asked to rate each item on a five-point scale ranging from strongly disagree to strongly agree. These are scored 1 to 5 respectively, and the 8 positive items are reverse scored so that higher scores on the scale indicate greater stress. The tool has a good reliability as indicated by its Cronbach alpha coefficient, which was 0.80 in the original testing<sup>(11)</sup>, and 0.84 in the present study pilot testing. In order to estimate the prevalence of high stress, the scale was dichotomized as the support scale. It was also translated into Arabic using the same technique.

**Fieldwork:**

An official letter from the Faculty of Nursing, Port Said University was addressed to the General Directors of the specified hospitals, and permissions were obtained to conduct the study. The researcher interviewed each mother individually. The actual fieldwork was carried out over a period of 12 months starting in the first week of September 2009 through the last week of August 2010.

**Ethical considerations:**

The purpose of the study was explained to each child's mother before carrying out the study and her oral consent to participate in the study was obtained. Confidentiality of the data was ensured and the collection tools were anonymous. Professional help and support were provided to the mother as needed.

**Data analysis:**

Data entry and statistical analysis were done using SPSS 16.0 statistical software packages. Quantitative continuous data were compared using Mann-Whitney test instead of Student t-test for comparisons between the two groups as normal distribution of the data could not be assumed. Qualitative categorical variables were compared using chi-square test. To identify the predictors of stress scores multiple linear backward regression analysis was used after testing for normality using Kolmogorow-Smirnoff test, and analysis of variance for the full regression models was done. Statistical significance was considered at  $p$ -value <0.05.

**3. Results**

Table 1 shows some similarities of children's personal and disease characteristics in the ward and ICU samples regarding their gender, birth order, and diagnoses. However, statistically significant differences ( $p < 0.001$ ) were revealed in their age, length of stay, and history of previous hospitalization. It is evident that ICU children had higher mean age ( $8.8 \pm 7.6$  years), and a higher percentage of them had periods of hospital stay of 7 days or more (28.0%).

On the other hand, more children in the inpatient pediatric ward had a history of previous hospitalization (40.1%).

Concerning the family characteristics, Table 2 demonstrates a close similarity between the two groups in most of their characteristics. In both groups, the majority of the mothers were 25 years age or older, with intermediate education, and not working. Also, the majority of the fathers were working and having intermediate education. The only differences of statistical significance were in mothers' age ( $p < 0.001$ ), crowding index ( $p = 0.02$ ), and family size ( $p = 0.001$ ). As the table shows, mothers in the ward group had higher mean age, and a higher mean family size. However, these differences were minimal when the means are compared. The group had also more families with a crowding index of 2 or higher.

Table 3 shows generally low levels of support received by mothers in both groups. However, the support was higher among mothers in the ward group in all the tested domains and in total score ( $p < 0.001$ ). It can be noticed that the highest support in both groups was related to appraisal, whereas the lowest was the instrumental support. As regards stress, the

table indicates statistically significantly higher mean percent score among mothers in the ICU group ( $75.7 \pm 3.9$ ) compared with the ward group ( $57.1 \pm 3.1$ ). Overall, less than one-fourth of mothers in the ward had high level of stress, compared to about three-fourth in the ICU group.

The relations between parental stress and nursing support (Table 4) show generally higher percentages of mothers with low stress among those with higher levels of support. This was revealed in both groups. However, only the relation with the support related to appraisal in the ward group reached statistical significance ( $p = 0.009$ ). Moreover, a statistically significant negative weak correlation ( $r = -0.20$ ,  $p < 0.05$ ) was found between the total scores of support and stress (not shown in the table).

In regression analysis (Table 5), the group and mother education were the independent positive predictors of the parental stress score, with only the group being statistically significant. Meanwhile, the length of hospital stay was a negative predictor. The beta coefficients demonstrate that being in the ICU group increases the stress score by about 20. The model explains 89% of the variation in stress score.

**Table 1:** Children's personal and disease characteristics in the ward and ICU samples

	Group				X <sup>2</sup> Test	p-value
	Ward (n=212)		ICU (n=150)			
	No.	%	No.	%		
Age (years):						
<6	175	82.5	99	66.0	13.07	<0.001*
6+	37	17.5	51	34.0		
Range	1.0-15.0		1.0-15.0			
Mean±SD	3.2±3.2		5.4±3.9			
Sex:						
Male	111	52.4	85	56.7	0.66	0.42
Female	101	47.6	65	43.3		
Birth order:						
1	71	33.5	55	36.7	2.65	0.27
2	69	32.5	56	37.3		
3+	72	34.0	39	26.0		
Diagnosis:						
Acute illness	181	85.4	136	90.7	2.26	0.13
Chronic condition	31	14.6	14	9.3		
Length of stay (days):						
1-2	69	32.5	52	34.7	39.68	<0.001*
3-6	131	61.8	56	37.3		
7+	12	5.7	42	28.0		
Previous hospitalization:	85	40.1	16	10.7	37.82	<0.001*

(\*) Statistically significant at  $p < 0.05$

**Table 2:** Family characteristics of children in the ward and ICU samples

	Group				X <sup>2</sup> Test	p-value
	Ward (n=212)		ICU (n=150)			
	No.	%	No.	%		
Mother age:						
<25	37	17.5	51	34.0	13.07	<0.001*
25+	175	82.5	99	66.0		
Mean±SD	29.3±6.2		26.6±5.5			
Mother education:					7.56	0.06
Illiterate	34	16.0	15	10.0		
Basic	34	16.0	14	9.3		
Intermediate	119	56.1	97	64.7		
High	25	11.8	24	16.0		
Current marital status:					0.36	0.55
Married	199	93.9	143	95.3		
Divorced/widow	13	6.1	7	4.7		
Mother job status:					0.03	0.87
Housewife	161	75.9	115	76.7		
Working	51	24.1	35	23.3		
Father education:					3.20	0.36
Illiterate	49	23.1	29	19.3		
Basic	26	12.3	12	8.0		
Intermediate	111	52.4	91	60.7		
High	26	12.3	18	12.0		
Father job status:					0.80	0.37
Housewife	13	6.1	6	4.0		
Working	199	93.9	144	96.0		
Crowding index:					5.49	0.02*
<2	56	26.4	57	38.0		
2+	156	73.6	93	62.0		
Family size:					10.81	0.001*
<4	41	19.3	52	34.7		
4+	171	80.7	98	65.3		
Range	3-10		3-8			
Mean±SD	4.5±1.1		4.1±1.1			

(\*) Statistically significant at p&lt;0.05

**Table 3:** Nursing support and stress among mothers of children in the ward and ICU samples

	Group				Mann Whitney Test	p-value
	Ward (n=212)		ICU (n=150)			
	No.	%	No.	%		
Support scores (max=5) related to:						
Emotions	3.3±0.4		3.1±0.3		27.58	<0.001*
Information	3.3±0.4		3.2±0.3		6.57	0.01*
Appraisal	3.4±0.4		3.1±0.3		44.31	<0.001*
Instrumental	2.8±0.3		2.8±0.2		4.12	0.04*
Total support:					X <sup>2</sup> =10.29	0.001*
High	41	19.3	11	7.3		
Low	171	80.7	139	92.7		
Score (mean±SD)	3.2±0.3		3.1±0.2		4.842	<0.001*
Total parental stress (max=5):					X <sup>2</sup> =92.23	<0.001*
High	49	23.1	111	74.0		
Low	163	76.9	39	26.0		
Score (mean±SD)	2.9±3.1		3.8±0.2		51.13	<0.001*

(\*) Statistically significant at p&lt;0.05

**Table 4:** Relation between parental stress and nursing support among mothers of children in the ward and ICU samples

	Parental stress				X <sup>2</sup> Test	p-value
	high		low			
	No.	%	No.	%		
<b>Ward</b>						
Had high support related to:						
Emotions	13	26.5	53	32.5	0.63	0.43
Information	12	24.5	52	31.9	0.98	0.32
Appraisal	12	24.5	74	45.4	6.83	0.009*
Total support:						
High	9	18.4	32	19.6		
Low	40	81.6	131	80.4	0.04	0.84
<b>ICU</b>						
Had high support related to:						
Emotions	15	13.5	4	10.3	Fisher	0.78
Information	19	17.1	2	5.1	3.45	0.06
Appraisal	18	16.2	4	10.3	0.82	0.37
Total support:						
High	9	8.1	2	5.1		
Low	102	91.9	37	94.9	Fisher	0.73

(\*) Statistically significant at  $p < 0.05$

**Table 5:** Best fitting multiple linear regression model for practice score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
Constant	36.87	.68		53.92	<0.001	35.52	38.21
Hospital stay (days)	-.08	.03	-.05	-2.48	0.013	-.15	-.02
Mother education (reference: illiterate)	1.00	.53	.03	1.90	0.058	-.04	2.04
Group (reference: ward)	19.748	.38	.95	51.60	<0.001	18.99	20.49

r-square = 0.89

Model ANOVA:  $F = 958.48$ ,  $p < 0.001$

Variables entered and excluded: child age, sex, order, mother age, job, support score

#### 4. Discussion

This study findings show that the mothers of hospitalized patients receive suboptimal nursing support; this is particularly evident among those in ICUs compared with those in the wards although they experience higher level of stress. This stress is influenced only by the setting, either the ICU or the ward, as well as the length of hospital stay.

The nursing support provided to the mothers in the present study was low in all its four aspects. However, the least support the instrumental one, and this was in both groups. This is expected since this type of support may involve aspects that the nurse is not able to provide such as assistance concerning financial problems or environmental modifications, which are key elements of instrumental support as defined by *Heaney and Israel (2008)*<sup>(12)</sup>. Yet, this support category is of considerable importance and was shown to have a positive impact on children's overall health<sup>(13)</sup>.

The study findings also demonstrated that the mothers of children in the ICUs received significantly less support compared with those in the wards. This paradoxical finding may be unexpected given the higher need for support among ICU group mothers. It might be explained by the differences in the two settings, where the encounters between the mothers and the nurses may be limited due to restrictions in time and access to these units. Moreover, the nurses in ICUs might have less time to provide to the mothers, compared with those in the wards. In agreement with these explanations, *Negarandeh et al. (2005)*<sup>(14)</sup> reported that nurses identified limited communication, risk, and insufficient time to interact with patients and families as barriers to being parental advocate and building the nurses-patient relationship.

Overall, the total mean support score was significantly higher among mothers in the ward group, although the difference is small. Meanwhile, the support score was low in both, in the middle area

of the scale (around 3), indicating that they get the support "sometimes." This mean score is close to that reported by *Al-Akour et al. (2012)*<sup>(13)</sup> in a study in Jordan, where the perception of Jordanian mothers to nursing support was 3.23. However, our mean is clearly lower compared with the finding of an Iranian study that described the quality of nurse-parent support in parents of hospitalized children using the same tool as in the present study<sup>(6)</sup>. They reported an overall mean of  $4.1 \pm 0.7$ .

Concerning mothers' stress, the current study revealed significantly higher levels among mothers in the ICU group compared with the ward group. The mean among them near the "severe" category of the scale (approximately 4), while in the ward group it was near the "moderate" category (approximately 3). This is quite plausible given the limited time mothers spend with their children hospitalized in the ICUs compared with those in the ward. Added to this is the mostly critical health status of these children. In line with this, recent studies attributed the higher stress among mothers of NICU children to the change in their parental roles since they feel separated from their child most of the time<sup>(16-18)</sup>.

In agreement with these foregoing present study results, *Cater et al. (2005)*<sup>(19)</sup> found that the NICU parents demonstrated significantly greater anxiety levels than the non-NICU parents. This was shown regardless of their similar demographic characteristics, which is also in congruence with the results of the multiple regression analysis of the current study, which demonstrated that the group affiliation (ICU) was the main predictor of the mothers' stress score, while none of the mothers or children characteristics had a significant influence on stress score. Similar findings were also reported in other similar studies<sup>(20, 21)</sup>.

The present study has also demonstrated that the length of hospital stay was a negative predictor of the mothers' stress score. This is quite plausible since a longer stay may lead to more adaptation to the situation as well as the hospital environment. Moreover, in premature children treated in ICUs, their health status usually improves from admission to subsequent days, which might give some relief to their mothers. In line with this, studies reported the noticeable influence of the infants' condition on parental stress<sup>(17, 22)</sup>.

An unexpected finding revealed by the present study is the lack of association between mothers' stress and the nursing support they received. This might be due to the generally low levels of support provided to them, which would not allow the identification of such an association. Nonetheless, the finding is incongruent with *Chourasia et al. (2012)*<sup>(23)</sup> who showed that counseling the mothers of NICU

admitted children with regards to infant's environment and condition was significantly effective in reducing their stress levels.

### Conclusion and Recommendations

The study findings lead to the conclusion that the mothers of hospitalized children in both ICUs and wards receive a low level of support from nurses, and consequently have high levels of stress. This is particularly evident in ICUs. Nurses should be aware of the various approaches and types of nursing support that can relieve parent's stress and enhance their coping, with subsequent positive impact on their quality of life and their care of their children. Nonetheless, the study limitations should be taken into account in interpreting the results of this study. These are mainly related to the use of scales which although standardized, have not been tested in our community. This is of importance in such culture sensitive matters as parental stress and support. Therefore, further research is recommended to develop and test similar tools in our community.

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