

## Original Research Article

# Is parental satisfaction important in a public hospital NICU

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## ABSTRACT

**Background:** NICU in public hospitals in developing countries face immense challenges in the form of overcrowding, less manpower and lack of equipment. Patient care is the prime responsibility of the health care workers. Parental satisfaction although an important part of health care is not given its due importance. There are very few studies analysing parental satisfaction of NICU babies in the developing countries including India. The objective of this cross-sectional study was to 1. Assess satisfaction regarding medical treatment 2. To assess satisfaction regarding General environment. Take suggestions regarding improvement in services.

**Methods:** A total of four hundred and fifty-nine parents were interviewed. They were parents of babies admitted in NICU, those coming for follow up in the well-baby clinic. Parents of babies who died or left against medical advice were interviewed at the time of leaving the hospital or telephonically later. Results were analysed statistically using the student chi square test.

**Results:** 92.6% of the respondents were satisfied with the medical services and 96.6% were satisfied with the general environment. Reasons for lack of satisfaction were analysed. Nuclear families, urban background, adverse outcome of the baby were the Key factors. Parents gave pertinent suggestions like improvement in cleanliness, more beds, increase in medical staff, better availability of medicines and blood products.

**Conclusions:** There is need to develop standardised protocols to analyse parental satisfaction. This will lead to better understanding of parental expectations and help to improve patient care.

**Keywords:** Parental satisfaction, NICU, Public hospital, Developing countries

## INTRODUCTION

NICU in public hospitals in India are typically overflowing with patients. Neonatal mortality as per 2018 UNICEF report is still 25.4 per 1000 live births.<sup>1</sup> One level III NICU may be the only good facility catering to Newborns in a couple of districts. The onus is on managing sick newborns referred from Government

facilities or referred from private hospitals where cost of treatment may be beyond the means of the parents. Parental satisfaction takes a back seat as the caregivers are stretched to their limit and managing the influx of babies becomes the prime responsibility.

Our NICU in GSVM Medical college caters to the city of Kanpur and adjoining districts. It is a level III NICU

with 11 B accreditation by the National Neonatology forum. It is a thirty-two bedded facility with about three thousand admissions per year. In this kind of scenario, we thought that getting a feedback from the parents would be helpful in making us look into this important aspect of care and help us in improving our services. This aspect of patient care has herethro not been looked into NICU's in the developing countries and more so in India. There are many studies on parent satisfaction in NICU's in Europe.<sup>2-5</sup> Many questionnaires have also been validated.<sup>5,6,14</sup> These have been used for improving neonatal services.

### Objective

To assess satisfaction regarding medical treatment. To assess satisfaction regarding General environment. Take suggestions regarding improvement in services.

### METHODS

This is a cross sectional study carried out in the NICU, Department of Pediatrics, GSVM Medical college, Kanpur from January 2018 to March 2018. This study was undertaken after permission from the ethics committee of the college. This was duly registered with the ICMR trial number CTRI/2018/01/011485. Sample size was calculated by taking the minimum sample size at 5% level of significance, using the formula:

$$N = 4pq \div d^2$$

where p = prevalence of level of patient satisfaction.

q=100-p, d=absolute precision =5%. Assuming the prevalence of patient satisfaction to be 50%, the minimum sample size was calculated to be 400. Interview of the parents was conducted by a medical social worker who was not involved in the care of the patients. A pretested format in which details of demographic status, weight, maturity of the baby, duration of stay in hospital along with pertinent questions regarding overall care, General environment, satisfaction from doctors, nurses, was asked. Signed informed consent was obtained from each participant before they participated in the study. Participants were informed of their rights to refuse participation in the study. The anonymity of participants was maintained, and assurance was given that all information would be treated in absolute confidence. Interview of some expired and LAMA patients was done telephonically as it was not possible to take a feed back at that point of time. The results were analysed statistically using the students chi square test. Software used was IBM Statistical package for social sciences (SPSS) Statistics for Windows, Version 22.0. (Armonk, NY)

### RESULTS

There were total of four hundred and fifty-nine parents who were interviewed. One hundred and forty-one of those whose children were admitted at that time.

**Table 1: Determinants of health care.**

Determinants	Not Satisfied		Satisfied		P value
	number =32	percentage 6.9%	number=427	percentage 93%	
Residence					
Rural	6	18.75%	211	49.4%	0.0008
Urban	26	81.25	216	50.88 %	
Type of family					
Joint	7	21.8%	268	62.76%	<0.000
Nuclear	25	78.1%	159	37.23%	
Days in NICU					
<3	26	81.25%	93	21.77%	0.008
4-7	6	18.75%	147	34.42%	
8-14	0	0%	109	25.52%	
15-30	0	0%	70	16.39%	
>30	0	0%	8	1.8%	
Outcome					
Discharged	8	25%	253	59.25%	<0.000
LAMA	3	9.37%	24	5.62%	
Expired	15	46.8%	15	3.51%	
Admitted	6	18.75%	135	31.6%	
Brought from					
Private hospital	5	15.62%	115	26.93%	0.16
Government	27	84.37%	312	73.06	
Gender					
Male	21	68.62%	283	66.27%	0.94

Continued.

Determinants	Not Satisfied		Satisfied		P value
Female	11	34.37%	144	33.72%	0.033
<b>Maturity</b>					
Term baby	15	46.8%	280	65.5%	
Preterm baby	17	53.12%	147	34.42%	0.34
<b>Income</b>					
<5	5	15.6%	131	30.67%	
5-10	20	62.5%	192	44.96%	
10-20	6	18.75%	71	16.62%	
Income is in Indian Rupees- less than 5000 per month, 5-10 thousand, 10-20 thousand					

Table 2: Determinants of satisfaction with general environment.

Determinants	Not Satisfied		Satisfied		P value
	Number -15	Percentage-3.2%	Number-445	Percentage-96.9%	
<b>Type of family</b>					
Joint	3	20.00%	274	61.5 %	0.001
Nuclear	12	80.00%	171	38.5 %	
<b>Days in NICU</b>					
<3	10	66.66%	104	23.3%	<0.001
4-7	5	33.33%	151	33.93%	
8-14	0		109	24.49%	
15-30	0		71	15.95%	
>30	0		10	2.24%	
<b>Outcome</b>					
Discharged	1	6.66%	255	57.5%	<0.001
LAMA	5	33.33	29	6.51%	
Expired	4	26.6%	20	4.94%	
Admitted	5	33.3%	138	31.01%	
<b>Gender</b>					
Male	8	53.3%	296	66.51%	0.288
Female	7	46.6%	149	33.48%	
<b>Maturity</b>					
Term	9	60%	290	65.16%	0.679
Preterm	6	40%	155	34.83%	
<b>Residence</b>					
Urban	9	60.00%	232	52.13%	0.548
Rural	6	40.00%	213	47.36%	
<b>Income</b>			135		
<Rs 5000	4	26.66%	202	30.33%	0.939
Rs 5-10,000	8	53.3%	74	45.39%	
Rs10-20,000	3	20.00%	34	16.62%	
>20,000	0	0%	.	8.63%	

Two hundred and sixty parents were interviewed when they came in follow up clinic. Thirty-three parents who chose to take their child against medical advice. Twenty-five parents whose children died in the NICU.

Of the total no of parents interviewed to assess their response to the medical treatment four hundred and twenty-seven were satisfied with the treatment as compared to thirty-two who were not satisfied. We did a detailed demographic analysis of the factors influencing this opinion. Both the groups were similar as far as

religion, gender, consanguinity, income, referral from private or Government Hospital. (Table 1). However, patients coming from rural areas and from joint families were more satisfied as compared to their counterparts. Parents whose babies had a shorter stay were more likely to be unsatisfied as compared to those having a stay more than three days. Parents who had preterm baby also were more unsatisfied as compared to those who had a term baby. In the outcome those parents who left against medical advice or whose babies died were unsatisfied as compared to those whose babies were still admitted or had been discharged.

**Table 3: Satisfaction in relation to outcome.**

	Admitted N=141	N-141 %	Discharged n- 260	N-260 %	Lama n-33	N-33 %	Expi red n-25	N-25 %	P value
<b>Satisfied with care</b>									
Yes	135	95.7	253	97.3	24	72.7	15	60	<0.001
No	6	4.3	7	2.7	9	27.3	10	40	
<b>Satisfied with environment</b>									
Yes	140	99.3	255	98.1	29	87.9	20	80	<0.001
No	1	0.7	5	2	4	12.1	5	20	
<b>Satisfied with Drs.</b>									
Yes	141	100	260	100	33	100	25	100	<0.001
No	0	0	0	0	0	0	0	0	
<b>Satisfied with nurses</b>									
Yes	140	99.3	203	78.1	29	87.9	24	96	<0.001
No	1	0.7	57	21.9	4	12.1	1	4	
<b>Were you kept informed</b>									
Yes	138	97.8	260	100	33	100	25	100	<0.001
No	3	2.2	0	0	0	0	0	0	

In the analysis of the results of satisfaction with the general environment four hundred and forty-four were satisfied as compared to fifteen who were not. There was no relationship with religion, gender, place of residence urban or rural, family income, referral place, or maturity of the baby (Table 2). Only those from nuclear families, those who had a short stay and those whose babies had died or those who had left against medical advice were unsatisfied.

**Table 4: Suggestions from parents (n=254).**

Suggestions/problems	No.	Percentage
<b>More beds</b>	23	9.05
<b>Faster admission process</b>	19	7.48
<b>More doctors</b>	31	12.20
<b>More staff</b>	27	10.62
<b>More time to see baby</b>	7	2.75
<b>More space for babies</b>	13	5.11
<b>More availability of medicine and facilities</b>	33	5.11
<b>Improve cleanliness</b>	39	15.35
<b>Washroom for attendants</b>	28	11.02
<b>Accommodation for attendants</b>	32	12.59
<b>Easy availability of blood products</b>	02	0.78

There was total satisfaction with the doctors and a high level of satisfaction with the nursing staff across all groups. There was similarly unanimity over being informed about the condition of the baby. (Table 3) In the list of suggestions given by the parents more cleanliness, better amenities like washrooms, accommodation, more doctors and increase in number of beds, easy availability

of medicines and blood products was mentioned (Table 4).

## DISCUSSION

It was heartening to note that 92.6% of parents were satisfied with the medical services and 96.6% were satisfied with the general environment. Typically, the general impression amongst most people is that large majority of patients are unsatisfied with government hospitals. And private hospitals provide better care. In our study inspite of constraints of space and equipment we were able to satisfy a large majority of parents. In comparison to a study carried out by Sankar et al in Delhi the level of satisfaction ranged from 70.2 % for services offered by the health care system to 80 % for the competence for the health staff.<sup>9</sup> Analyzing the reasons for lack of satisfaction, nuclear families, urban background, adverse outcome of the baby were the Key factors. It is understandable to be unsatisfied if you have an adverse outcome of your baby. Good communication is the key to parental satisfaction.<sup>10,11,13,17</sup> Majority of parents were satisfied with our interaction. This study gives us an insight about the perception parents have about our unit. However, because of obvious reasons we have not been able to interview sufficient number of parents whose babies died or those who left against medical advice. This group would have changed the percentages to some extent but the overall result would be the same. There is need to develop a standardized evaluation tool to evaluate parental satisfaction as is practiced in many western hospitals, so that parents feel involved in the care of their babies and their input will help to improve the standard of care in the NICU.<sup>16,18</sup>

In retrospect analyzing the limitations of this study we feel that this should be on going and not limited to a short

period. Interviewing patients who have left the hospital due to lack of satisfaction or death of the child is very sensitive and one telephone or a hasty interview at the time of leaving the hospital may not give the real picture.

## CONCLUSION

Patient satisfaction is an important aspect of medical treatment. There are very few studies in the developing countries and none in NICU'S to assess the satisfaction of parents. In spite of overcrowding and constraints of staff and equipment a large majority of parents were satisfied with the medical treatment and general environment. They gave good suggestions regarding improvement in infrastructure and increase in number of medical personnel. There is need to develop standard protocols to assess parental satisfaction.

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## REFERENCES

- Joshi M. Neonatal Mortality Rate in India in 2018: Much room for improvement <https://qrius.com/neonatal-mortality-rate-in-india-2018>. Accessed on 10 April, 2021.
- Blackington SM, McLauchlan T. Continuous quality improvement in the neonatal intensive care unit: evaluating parent satisfaction. *Nurs Care Qual.* 1995;9(4):78-85.
- McCormick MC, Escobar GJ, Zheng Z, Richardson DK. Factors influencing parental satisfaction with neonatal intensive care among the families of moderately premature infants. *Pediatrics.* 2008;121(6):1111-8.
- Latour JM, Duivenvoorden HJ, Hazelzet JA, van Goudoever JB. Development and validation of a neonatal intensive care parent satisfaction instrument. *Pediatr Crit Care Med.* 2012;13(5):554-9.
- Moumtzoglou A, Dafogianni C, Karra V, Michailidou D, Lazarou P, Bartsocas C. Development and application of a questionnaire for assessing parent satisfaction with care. *Int J Qual Health Care.* 2000;12(4):331-7.
- Moumtzoglou A, Dafogianni C, Karra V, Michailidou D, Lazarou P, Bartsocas C. Development and application of a questionnaire for assessing parent satisfaction with care. *Int J Qual Health Care.* 2000;12(4):331-76.
- Capdevila Cogul E, Sánchez Pozón L, Riba García M, Moríña Soler D, et al. Assessment of parental satisfaction in a neonatal unit. *An Pediatr (Barc).* 2012;77(1):12-21.
- Blackington SM, McLauchlan T. Continuous quality improvement in the neonatal intensive care unit: evaluating parent satisfaction. *J Nurs Care Qual.* 1995;9(4):78-85.
- Bernardo G, Svelto M, Giordano M, Sordino D, Riccitelli M. Supporting parents in taking care of their infants admitted to a neonatal intensive care unit: a prospective cohort pilot study. *Italian Journal of Pediatrics volume.* 2017;43(3).
- Sankar V. Parental Satisfaction of Traditional System of Neonatal Intensive Care Unit Services in a Public Sector Hospital in North India. *South African Journal of Child Health.* 2017;11(1):54-7.
- Jeanette M. Conner and Eugene C. Nelson. Neonatal Intensive Care: Satisfaction Measured From a Parent's Perspective. *Pediatrics.* 1999;103(E1):336-34.
- Yee W, Sue S. Communicating with parents of high-risk infants in neonatal intensive care. *Paediatr Child Health.* 2006;11(5):291-4.
- Nguyen ATB, Nguyen NTK, Phan PH, van Eeuwijk P, Fink G. Parental satisfaction with quality of neonatal care in different level hospitals: evidence from Vietnam. *BMC Health Serv Res.* 2020;20(1):238.
- Lake ET, Smith JG, Staiger DO, Schoenauer KM, Rogowski JA. Measuring Parent Satisfaction With Care in Neonatal Intensive Care Units: The EMPATHIC-NICU-USA Questionnaire. *Front Pediatr.* 2020;8:541573.
- Cheldelin LV, Dunham S, Stewart V. NICU patient satisfaction: how you measure counts. *J Perinatol.* 2013;33(4):324-6.
- Butt ML, McGrath JM, Samra HA, Gupta R. An integrative review of parent satisfaction with care provided in the neonatal intensive care unit. *J Obstet Gynecol Neonatal Nurs.* 2013;42(1):105-20.
- Weiss S, Goldlust E, Vaucher YE. Improving parent satisfaction: an intervention to increase neonatal parent-provider communication. *J Perinatol.* 2010;30(6):425-30.
- Conner JM, Nelson EC. Neonatal intensive care: satisfaction measured from a parent's perspective. *Pediatrics.* 1999;103(1):336-49.

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