

# Patient Endorsement Level Regarding Obstetric Anesthesia Assistance and Assessment of Its Service Quality in National Medical College, Nepal – “A Cross-sectional study”.

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## ABSTRACT

In recent years, healthcare performance statistics is an important criterion to determine hospital service quality which is completely relies on patient endorsement level. Still there have lots of endorsements or satisfaction assessment has been performed to assess several medical facilities. But in context of Nepal, in National Medical College and teaching hospital (NMCTH), there was lack of survey to evaluate patient satisfaction towards the anaesthesia services.

So, in this survey, we looked into the pre and post-operative concerns and patient endorsement level in a group of Nepalese obstetric patients undergoing anaesthesia for caesarean section (CS) in NMCTH, Birgunj, Nepal. The study was carried out in the month of March 2018 to February 2019; and we have collected the data from all Nepalese obstetric patients those who are undergoing elective or emergency CS. After analysis it was seen that patients were less satisfied in the aspect of “panic” and “discomfort”, which were interconnected with rigorous postoperative pain, general anaesthesia and evolving CS. So up gradation needed to manage pain and alleviating panic or fear and discomfort level with recommendation of follow-up the survey to assess the efficacy of enhancement measures. Further patient contentment survey can be considered in other patient groups.

**Key words – Survey, Endorsement, Anaesthesia, Panic, Discomfort, Pain.**

## Introduction

Patient contentment assessment provides an effective, valuable and quality of information source for improving healthcare. Patients' opinions indicate whether the genesis is on the right track and help us to design essential quality improvements. A traditional responsibility of working in operation theatre, a good anaesthetists always maintain provision of care in intensive care unit, high dependency unit and on overextend unit services for critically ill patients and as well as management of acute and chronic pain. Even the contentment and vindication in gynecological cases and conditions predominantly correlated with skills, procedure and take care of anesthetic unit. Overall satisfaction and opinion of a patient effectively helpful to improve hospital service with quality assurances<sup>1,2</sup>. It is not only question of hospital service, the negative maternity experience can affect the success of the breast feeding, postpartum leads to distress and extensive hospital stay for a patient<sup>3,4</sup>. A variety of patient satisfaction may be related factors including age, schooling and marital status, presumption, information provided, sensitive Support, duration of anesthesia, physical soreness, pre or post-operative complications with or without pain<sup>1,8,9</sup>. There are studies at maternal satisfaction from their prenatal experience, of course, is related to preclinical research however the studies regarding precaesarean section (CS) experience is insufficient<sup>5,6,10,11,12</sup>. From 2002, all the hospitals in annual basis going through patient satisfaction data survey in UK. Even in Germany, patient satisfaction data is mandatory since 2005 and plays an important part in the health quality management reports of Germany<sup>7,13,14,16</sup>. In a European study, it was found that most of the problems were involves the gap between information and decision making, and continuation of personal care by anesthetist<sup>15,17,18</sup>.

The goal of this cross sectional study is to evaluate the overall patient satisfaction and preoperative distress level in relation of obstetric anesthesia service in NMCTH, Birgunj, Nepal.

## Material and methods

The study was carried out in the National Medical College and teaching hospital (NMCTH), at Birgunj of Nepal. Within March 2018 to February 2019, we have collected the data from all Nepalese obstetric patients who meet with optional or emergency CS, those who were recruited into this assessment.

We have used a set of translated questionnaires adopted from the principle of German Heidelberg Pre-anaesthetic Questionnaire-HPQ<sup>14</sup>, with maximum agony or pain score within the postoperative 24 hours and an open question for other opinions. Before starting of study, written well-versed permission was obtained from the recruited patients. The HPQ contained considerable sections: a socio-demographic subdivision, from which, thirty-five (35) questions adopted and the replies given by patients were analyzed for each specialty as a whole and then by the evaluation of the responders. The answers were compared to detect whether a good and skilled anaesthetists and surgery expert had a deal about what key features should be. The recruited patients were interviewed personally within 24 hours postoperatively for completion of the questionnaire<sup>19, 20, 21</sup>.

HPQ is scientifically structured and authenticated by large sample size investigation of 3 separate hospital patients with a broad spectrum of risk. The pre-anaesthetic questionnaire of HPQ is a valid pretest and cognitive method which was first time standardized<sup>23, 24</sup>. According the guideline of HPQ study, for an insufficient patient satisfaction, cut-off point 132 was taken as the first quartile of the total score. The total score is a level of satisfaction or endorsement which depends on five aspects, namely: 1. Treatment by personnel, 2. Information and waiting, 3. Fear, 4. Trust and atmosphere, and 5. Discomfort. Patient establishes a level of agreement with a 5-point Likert scale.

To study of patients' opinion and satisfaction on pain management, a third stage follow up pain assessment (S3) was also performed on postoperative day 2 or 3 (D2/3) according the same guideline<sup>25, 26, 27</sup>.

## Statistical analysis

SPSS software version 20 was used for statistical analysis. Univariate analysis was carried out between satisfaction values and for clinical and sociodemographic characteristics.

To assess the significance of difference between satisfaction values and qualitative variables, we used Mann-Whitney U test and the Kruskal Wallis. Linear association was determined by the Spearman's correlation coefficient. Statistically significant P-value would be considered less than 0.05.

## Results

We collected the data from the recruited 214 Nepalese post CS patients from which 12 subjects were excluded due to incomplete and missing data in the HPQ.

### Phase A. Demographic data Patient's

All the patients were married and maximum of them had history of deprived economical background with class eight to secondary level school education. Out of total patients, half of them were working women and the rest were housewives. . The median number was one for the past CS case done. Participant's gravidity or impregnation number was up to 1 to 6, (median number of 2) and equality range was 1 to 5 (including children born during admission) with a median of 1. In case of ASA, maximum of recruited patients were in group ASA-I (62.3%, n=126) whereas ASA- III was with only 4 patients (1.9%). The median operative time was 53 minutes (range 15-152 minutes). It was seen that CS under spinal cord Anesthesia (SA) (72.2%, N = 146) maximally performed, others were combined spinal epidural anesthesia (1.5%, n = 3), Epidural anesthesia (4.9%, n = 10) or General anesthesia (GA) (9.9%, n = 20). There were only total three (2) cases (1 %) which intraoperatively converted from regional anesthesia (RA) to general anesthesia (GA).

## Phase B. Overall patient endorsement

Satisfaction median score was 137 out of 188, ranging from 100 to 183

### Factors affecting overall satisfaction

**TABLE I:** Data and its Univariate study on the basis of clinical records, demographic characteristics and the postoperative HPQ total score.

From **TABLE- I**, it is clear that those who have previous experience with SA was related with higher HPQ score

Parameter	Category	n	HPQ total score		P value
			Median	Interquartile range	
Marital status	Single	8	134	130-138	0.524
	Married	185	139	129-149	
	Divorced	2	132	129-133	
Education level	Primary school	1	163	163-163	0.293
	Secondary school	142	137	127-148	
	Bachelors degree	53	140	131-149	
	Master degree	5	134.5	132-137	
Occupation	Housewife	105	139	129-149	0.254
	Working	99	136.5	128-145	
Urgency of operation	Emergency	123	136.5	127-146	0.149
	Elective	94	139	130-148	
Anaesthetic Method	GA	24	130.5	125-136	0.013
	RA	193	139	130- 148	
History of GA	no	144	136	129-143	0.861
	yes	74	138.5	128-149	
History of SA	no	138	135.5	126-145	0.025
	yes	78	140	131-149	
ASA	I	142	136	127-145	0.152
	II	67	141.5	131-152	
	III	5	152	138-166	
Alteration of anaesthetic technique	no	199	138	129-147	0.859
	yes	2	136	126-146	
Postop 24hrs max pain score	< 7	144	140.5	130-151	0.010
	≥ 7	63	134.5	128-141	

(median 140 vs. 135.5,  $p=0.025$ ) as well as higher value with the use of RA (median 139 vs. 130.5,  $p=0.013$ ).

Clinical variables	Total Score of Q.1 to Q.35		
	N	Correlation Coefficient	Significance (2- tailed)
Gravidity	193	0.065	0.23
Parity	193	0.089	0.172
Number of previous caesarean section	189	0.144	0.029
Operation time	202	-0.099	0.84
Postop 24hr max pain score	195	-0.153	0.020

**Table 2:** Spearman's correlation between clinical variables and HPQ total score

According to the data Table 2, it is observed that HPQ total score also positively correlated with the number of CS done before ( $p=0.029$ ). And likely, higher maximal pain score was statistically significantly linked with inferior satisfaction score.

### Phase C. Individual dimension of satisfaction

**Table 3:** Overall results for each dimension or criterion in HPQ questionnaires

Dimension	Mean total score divided by number of items
Trust and atmosphere	4.1
Panic or Fear	2.89
Discomfort	3.08
Treatment by personnel	3.93
Information and waiting	3.87

From **Table 3**, the result of different dimensions of HPQ questionnaires revealed that the score of 'Panic or Fear' and 'Discomfort' ranked lowest among the 5 dimensions.

**Table 4:** Panic or fear score according to sociodemographic and clinical variables

Parameter	Category	N	Fear score*		P value
			Median	Interquartile range	
Marital status	Single	8	17	13-18	0.629
	Married	186	17.5	13-19	
	Divorced	2	20	17-20	
Education level	Primary school	1	19	17-17	0.827
	Secondary school	142	17	12-19.5	
	Bachelors degree	54	17.5	13-19	
	Master degree	5	16	13-16	
Occupation	Housewife	104	17	13-20	0.367
	Working	98	17.5	13-19	
Urgency of operation	Emergency	121	17	13-18	0.026
	Elective	93	17.5	13-20	
Anaesthetic Method	GA	22	15	12-16	0.02
	RA	191	17	13-20	
History of GA	No	142	17.5	13-19	0.924
	Yes	73	17.5	12-20	
History of SA	No	138	16.5	12-18	<0.001
	Yes	80	18.5	15-21	
ASA	I	141	17	13-19.5	0.047
	II	66	15.5	12-14	
	III	5	22.5	18-22	
Conversion of anaesthetic technique	No	198	18	13-19	0.058
	yes	4	23	19-21	
Postop 24hrs max pain score	< 7	144	18	13-20	0.093
	≥ 7	62	17	12-18	

From **Table 4**, it is concluded, that **panic** or fear dimension in case of previous history of SA, current CS performed under SA, high ASA grading and elective operation were all shown to be coupled with a less fear (i.e. higher fear score).

**Table 5:** Spearman's correlation between clinical variables and fear score

Clinical variables	Fear Score		
	N	Correlation Coefficient	Significance(2- tailed)
Gravidity	193	0.135	0.041
Parity	193	0.220	0.001
Number of previous caesarean section	191	0.269	<0.001
Operation time	202	0.094	0.146
Postop 24hr max pain score	195	-0.113	0.088

On the other hand, increased number of previous CS, number of gravidity, and parity were related with less fear, though the association is weak in **Table 5**. Regarding discomfort, our assessment illustrate that rigorous postoperative pain was linked with augmented discomfort.

## Discussion

Still there was certain restriction in this study, we provided standard protocol to collect and analysis the data with minimum errors, because HPQ questionnaire used in this study was only validated in Germany and it had not been used in the obstetric patients in Nepal. So, for proper conversion into Nepali language and to construct an easy questionnaire, mild modification was done, therefore the Nepali version had not been validated<sup>20, 21, 22</sup>. But we can stare our data survey as a pilot study to abet future appraisal on pre and post anaesthetic services in hospitals of Nepal, because still without validation, the results of this study was generally coherent with previous satisfaction surveys.

In our study parameters which influence on endorsement, like panic or fear or phobia is explained as psychosocial stressors produce immunological dysregulation through the immune-brain loop, which acting through same surgical stress response pathways. It is clear from our survey, less panic was mediated with increasing past obstetric experience and elective CS, and this group of patients was mentally more prepared than the inexperienced emergency group. Psychological distress and anxiety preoperatively contribute to greater postoperative pain, delayed recovery, postoperative complications, and impaired wound healing as well as may influence normal breast feeding, lengthy hospital stay and increase the risk of postpartum mental distress.

In our study we used discomfort as another dimension, associated with severe postoperative pain (pain score  $\geq 7$ ), and high pain score was associated with lower overall total HPQ score ( $p=0.020$ ).

To explain discomfort we included several sub factors like pain, skin itching, muscle weakness, tiredness, sore throat, thirst, nausea and vomiting cold and shivering. By using pharmacological or non-pharmacological protocols these repulsive symptoms could be handled, for example, we can provide effective warming device preoperatively to ease cold and shivering or can use prophylactic antiemetic or can ensure euvolemia and pain free to decrease nausea and vomiting etc.

A good anaesthetist should possess top three priorities to maintain - knowledge, patient, and team work. These three aspects make the patients more satisfied and confident. As a fourth most important attribute, competence helps to make an important decision quickly with minimal facilities for a good anaesthetist. It is clear that, the results and findings of the patients with same type past operative experience would have less uncertainty about the procedure and would usually be more mentally prepared and for that reason, patients with history of SA, had SA for current CS and those with good postoperative pain control were more satisfied with the anaesthesia service<sup>28, 29</sup>. Even preceding CS number was also related to the positive patient satisfaction because the CS range was in between 0 to 4. So it is clear that gravidity and past operation history were associated with less fear in case of patients with increasing number of parities. In this context, patient grievances could be reduced by providing satisfactory information about upcoming methods in different types of conversation before delivery. Overall, the during the peri-CS period, the patients would be more mentally prepared for the procedures<sup>30, 31, 32</sup>.

Neuraxial anesthesia and analgesia techniques include spinal, epidural and combined spinal epidural. A proper smooth Central neuraxial technique depends on three basic factors like - instruction and delay, treatment by skilled professionals, and panic. Overall these factors reflect on the positive satisfaction level of a post-operative patient<sup>33, 34, 35</sup>. In central neuraxial anaesthesia waking patients can communicate more easily with professionals and feelings of panic and uncertainty throughout the process can be solved. RA is the most preferable and common technique used for purpose of CS, nowadays because RA have very less anaesthesia related mortality level, best post-operative pain with neuraxial opioids, neonate exposed minimal anaesthetic effects and even it nullify the risk of aspiration or difficult airway seen in GA. So it is clear that, GA is only necessary in a case of absolute necessary, other than RA should be performed whenever possible for CS purpose<sup>36, 37</sup>.

Procedural review was showed a single dose of intravenous dex'amethason can reduce postoperative pain without any further increase of infection or delayed wound healing. It could also decrease the incidence of postoperative nausea and vomiting. The postoperative pain management could be improvised by using and introducing dex'amethason into the pain regime with further pain study to evaluate its effectiveness<sup>38</sup>.

Postoperative severe pain associated with discomfort within the first 24 hours which have a negative impact on overall satisfaction. After implementation of NMCTH (a procedure specific pain management programme or PSPMP, which was introduced in 2015)<sup>19, 20, 21</sup>, the 2nd follow-up assessment (S2) validated more than 52% diminution in patients with severe pain and a positive increase in patient satisfaction. concurrently with this review, we ran the third follow up pain assessment (S3), which showed no significant raise in patients with severe pain but significant increase in D2/3 patient dissatisfaction as compared to the last survey (S2) (0.6% in S2 rose to 1.5% in S3).

In case of S3, the factors like percentage of re-evaluation (60.3% in S2 vs 21.1% in S3), preoperative patients properly receiving instruction or not (65.2% in S2 vs 34.8% in S3), and post-operative pain scoring (81.6% in S2 vs. 61.2% in S3) which are influencing patient satisfaction considerably decrease down. It was surprise for us, that prolonged operating time as well as intraoperative alteration of RA to GA did not affect patient endorsement because, the patients is well informed of the reasons for conversion of RA to GA and long procedure, they will generally accepted the decision.

Therefore, apart from designing an effective analgesic regimen, good collaboration between anaesthetists, pain nurses, obstetricians and obstetric ward nurses is required for a holistic pain management program.

## Conclusion

Communication Skills can be a significant and major field which requires improving for good anaesthetist and definitely the staff service needed to upgrade according to the satisfaction requirement of patients by time to time. To improve the level of satisfaction of maternity patients, integrative teamwork between the anaesthetists and obstetric needed.

This cross sectional study showed that there is major area where have some scope to develop and progress in our obstetric anaesthesia service. Proper way of adjustment in postoperative pain management, alleviation of panic or fear as well as discomfort, increase in pain evaluation and re-evaluation and provision of patient information brochures are amendable factors that may improve the outcome of obstetric anaesthesia service in the hospital.

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