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# Nurses as Frontliners in Covid-19 Pandemic: A Significant Contribution in Global Health

Pun KD

Healthcare system around the globe has been severely affected by the current pandemic of Coronavirus disease (Covid-19), after it was first detected in December, 2019.<sup>1</sup> When it first emerged, the uncertainties about the disease and human to human transmission of such a scale and magnitude caught the healthcare system by surprise. Nobody was prepared for the challenges that ensued. This led to uncountable and irreparable devastation. Around that time, 20 million nurses worldwide were preparing to celebrate the year 2020 as the International Year of Nurses and Midwives as declared by World Health Organization.<sup>2</sup> The health care system, which has more than 50% workforce constituting of nurses working at the frontline, required them of rapid action in battling the pandemic. The nurses around the world responded with overwhelming devotion and sincerity. They went far and beyond the fundamental of patient care in their response to Covid-19 pandemic. In handling the challenges of Covid-19 pandemic, they have justified the theme of Nursing Day of 2020: Nursing World to Health in the most forceful manner possible.

Nurses have proven that their roles and responsibilities are critical during the pandemic. In a situation where family and relatives are unable to visit and provide moral support to the patients due to fear of transmission of the disease, nurses not only are dispensing the clinical care to the patients but also are providing emotional support both for the patient and their loved ones. They have taken charge in taking care of patient's needs, providing reassurance, networking between patient and other health care providers and most importantly in giving hope at the time when they themselves needed it the most.<sup>3,4</sup> They are taking the 'holistic care', the core value of nursing to a new height, whether in daily routine work or emergency brought on by outbreaks of diseases.

Despite all their efforts, nurses face problems that hinder them from caring of infected patients. Shortage of staffs, limited resources, physical exhaustion working overtime due to pressure of increased number of patients and communication barriers could lead to nutritional problems, anxiety and fear of infection. Ultimately resulting in the severe form of "caring" fatigue- exhaustion in caring patients anymore; which can breakdown nurses strength in holistic care of any patient with or without infections.<sup>5</sup> In some cases the nurses simultaneously have to take care of their own emotional wellbeing which is at the receiving end due to separation from the family, witnessing the death of patients and sometimes threat to their safety from patients' family when the patients die.

Nurses' activities at the frontline of current pandemic are a powerful demonstration of the potential that nurse possess. The world should be assured by now that nurses are key players in addressing big health care challenges. Adequate assistance from the health care system and healthy work environment is necessary to empower them and make their effort effective in controlling the pandemic of Covid-19 or any other similar disaster in the future.

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# Preoperative Anxiety and Associated Factors among Elective Surgery Patients in Tertiary Care Hospital

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## ABSTRACT

### Background

Anxiety during the preoperative period is the most common problem with the number of postoperative complications. Some of the common post-operative complications include fear, fever, wound infection, embolism, and deep vein thrombosis. Associated factors responsible for preoperative anxiety depend on age, gender, occupation, marital status, education, the uncertainty of the exact day of surgery, post-operative pain's ability to understand the events that occur during surgical anesthesia. Lack of adequate and timely information to patients during pre-anesthetic consultation increases patient anxiety.

### Objective

To assess pre-operative anxiety and associated factors among preoperative patients.

### Method

A descriptive cross-sectional study was conducted among 206 preoperative patients selected by convenient sampling. State Trait Anxiety Inventory Scale (S-STAI) questionnaire was used to assess the level of anxiety among preoperative patients.

### Result

Findings of the study revealed that out of 206 respondents, 93 respondents (36.9%) had pre-operative anxiety. Majority 93 (45.1%) of respondents had mild anxiety, 36 (17.5%) of them had moderate anxiety and 77 (37.4%) had severe preoperative anxiety. There was significant association of age, gender, occupation, type of surgery and history of previous surgery with level of pre-operative anxiety ( $p < 0.05$ ).

### Conclusion

Age, gender, occupation, type of work and history of previous surgery were associated factors of preoperative anxiety. Therefore patient need to be assessed regularly for anxiety during the preoperative visit and appropriate anxiety reduction method should be introduced in hospital setting.

## KEY WORDS

Anxiety, Associated factors, Pre-operative patients



## INTRODUCTION

Anxiety is a normal reaction to stress. Preoperative anxiety is described as a vague, uneasy feeling, which is often nonspecific and unknown to individual.<sup>1</sup>

The incidence of preoperative anxiety varies according to the setting of surgery. It is around 60% - 80% in the western population.<sup>2</sup> In Nepal, 58.5% of respondents had pre-operative anxiety.<sup>3</sup> Higher levels of preoperative anxiety may be associated with life-threatening postoperative complications and increase the risk of postoperative mortality.

Raised anxiety levels have important clinical significance since they adversely impact upon intra- and post-operative outcomes such as pain. In anxious patients, larger doses of anesthetics are required to induce anesthesia and the anesthesia itself may be associated with autonomic fluctuations.<sup>4</sup> Thus anxiety causes a much longer hospital stay that directly impacts the cost of healthcare. Due to this, it is necessary to evaluate and reduce anxiety in all patients who undergo an anesthetic-surgical procedure. Nurses can help to relieve anxiety by offering emotional support and providing information on the disease, treatment plans, and rehabilitation.

Therefore, this study aimed to assess preoperative anxiety and associated factors among elective surgery patients in Dhulikhel Hospital.

## METHODS

Quantitative cross-sectional study was conducted from May, 2019 to October, 2019 in Kathmandu University Hospital (KUHH). The study included all the elective surgery patients from different wards and a total of 206 respondents were included by using convenient sampling method.

Ethical approval was obtained from Institutional Review Committee Kathmandu University School of Medical Sciences (IRC-KUSMS). Verbal informed consent from all respondents was obtained before data collection. Participation was voluntary. Confidentiality and anonymity were ensured by coding data collection sheets.

Questionnaire consisted of two parts: socio-demographic information and State Trait anxiety inventory Scale (S-STAI). The question was translated into Nepali language. Data was collected using face to face interview with preoperative patient who came for elective surgery.

S-STAI scale is a self report measuring that has two sub scales. Reliability and validity of the STAI are well reported (Cronbach's alpha = 0.86) and measurement of state anxiety is recommended in the preoperative period. The STAI has 20 statements allocated to each of the S-Anxiety and T-Anxiety subscales. Responses for the S-Anxiety scale assess the intensity of current feelings "at this moment": 1) not at all, 2) somewhat, 3) moderately so, and 4) very much

so. Responses for the T-Anxiety scale assess the frequency of feelings "in general": 1) almost never, 2) sometimes, 3) often, and 4) almost always. In the state portion of STAI (Y-1), ten statements express anxiety (item number 3, 4, 6, 7, 9, 12, 13, 14, 17 and 18) while the remaining 10 statements (item number 1, 2, 5, 8, 10, 11, 15, 16, 19 and 20) represent the relaxed and pleasant state of patient. A rating of four indicates the presence of high level of anxiety for ten S-Anxiety items and high rating indicates the absence of anxiety for the remaining ten S-Anxiety items. The scoring weights for the anxiety absence items are reversed.

The total score STAI ranges from a minimum of 20 to a maximum of 80; STAI scores are commonly classified as 'mild anxiety' (20-37), 'moderate anxiety' (38-44). And 'severe anxiety' (45-80).<sup>1,3,5</sup>

Pre-test Cronbach's value in present study is 0.904. Data collection tool was pre-tested in 10% (n=21) of the sample size and respondents were excluded from the main study.

The collected data were analyzed using SPSS statistic for window 16 version. The data was gathered through different techniques and has been complied for demographic variables to decide the distribution the prototype of patients into each level. Frequencies were calculated for level of anxiety among the patients. The distribution pattern is depicted through appropriate graphical methods; the results are inferred through statistical techniques like descriptive and inferential statistical methods like Mean, SD and 'chi'-square test.

## RESULTS

Out of 206 preoperative patients, 145 (70.5) respondents were female, the majority 60 (29.1) of respondents belongs to the age group of 19-30 years and the mean age was  $41.01 \pm 15.04$  SD.

Majority 182 (88.3) of respondents were married, nearly half 93 (47.1) of the respondents did not have formal education, more than half 59 (28.6) were newar. Likewise, 65 (31.6) of respondents were home maker. Regarding monthly income, more than half 129 (62.5) of respondents had Rs. 10,000-30,000 per month and 125 (60.7) of respondents were from nuclear family (table 1).

**Table 1. Socio-demographic characteristics of respondents (n=206)**

Variables	Frequency (%)
Age in years	19-30
	60 (29.1)
	31-40
	57 (27.7)
	41-50
	37 (18)
	51-60
	28 (13.6)
	61-70
	11 (5.3)
	Over 71
	13 (6.3)

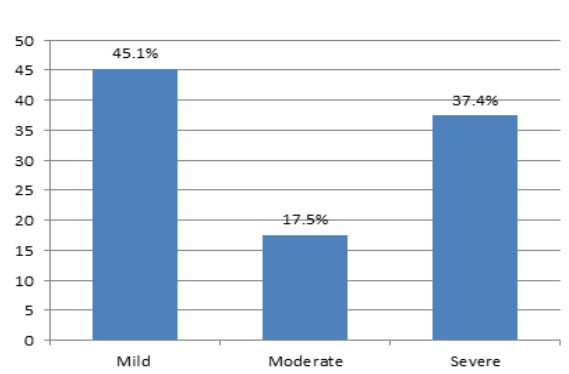
Mean age  $41.01 \pm 15.043$

Gender	Male	61 (29.6)
	Female	145 (70.4)
Marital status	Married	182 (88.3)
	Unmarried	22 (10.7)
	Widow	2 (1)
Educational level	Illiterate	79 (38.3)
	Informal Education	14 (8.8)
	Primary level	21 (10.2)
	Secondary level	28 (13.6)
	Higher Secondary level	36 (17.5)
	Bachelor or above level	28 (13.6)
Ethnicity	Newar	59 (28.6)
	Janajati	49 (23.80)
	Brahmin	46 (22.)
	Chhetri	44 (21.4)
	Damai	8 (3.9)
Occupation	Home maker	65 (31.6)
	Agriculture	58 (28.2)
	Service	35 (17)
	Business	23 (11.2)
	Unemployed	4 (1.9)
	Students	8 (3.9)
	Labour	13 (41.8)
Monthly income	10000-30000	129 (62.6)
	> 30000	77 (37.4)
Type of family	Nuclear	125 (60.7)
	Joint	72 (35)
	Extended	9 (4.4)

Among the surgery related characteristics, 125(60.7) of respondents had undergone intermediate grade of surgery. Nearly half 99 (48.1) of the participants had under gone gynecological surgery. The majority 154 (74.8) of the respondents does not have a history of previous surgery. The majority 205 (98.1) of respondents were found to have adequate family support (table 2).

**Table 2. Surgery related characteristics of the participants (n=206)**

Variables	Frequency (%)
Grade of Surgery	Minor 18 (8.7)
	Intermediate 125 (60.7)
	Major 63 (30.6)
Type of surgery	General Surgery 92 (44.7)
	Gynecology 99 (48.1)
	Orthopedic 11(5.3)
	EENT Surgery 4 (1.9)
History of previous surgery	Yes 52 (25.2)
	No 154 (74.8)
Family Support of the Respon- dents	Yes 205 (98.1)
	No 1(1.9)



**Fig. 1. Level of anxiety among the preoperative patients.**

**Table 3. Association between preoperative anxiety level and demographic variables (n =206)**

Variables	Mild		Moderate		Severe		p-value
	n	%	n	%	n	%	
Age							
< 41	46	38.3	20	16.6	54	45	0.004
≥ 41	47	54.7	16	18.6	23	26.7	
Gender							
Male	49	80.3	6	9.8	6	9.8	< 0.001
Female	44	30.3	30	20.7	71	49	
Marital Status							
Married	78	42.9	33	18.1	71	49	0.055
unmarried	15	62.5	3	12.5	6	25	
Education							
Illiterate	46	50	17	18.5	29	31.5	0.075
Literate	47	41.6	18	15.9	48	42.5	
Ethnicity							
Newar	27	45.8	13	22	19	32.2	0.340
Other than Newar	66	44.9	23	15.6	58	39.5	
Occupation							
Home maker	18	27.7	10	15.4	37	59.9	< 0.001
Service holder	75	53.2	26	18.4	40	28.4	
Monthly Income per month							
< 30000	56	43.4	22	17.1	51	39.5	0.237
≥ 30000	37	48.1	14	18.2	26	33.8	
Family type							
Nuclear	58	46.4	27	21.6	40	32	0.062
Joint	35	43.2	9	11.1	37	45.7	
Type of surgery							
Minor	7	38.9	.0	0	33	61.1	0.440
Intermediate	63	50.1	18	14.4	44	35.2	
Major	23	36.5	18	28.6	22	34.9	
Type of ward							
Gynaecological	10	10.1	24	24.2	66	65.7	< 0.001
General surgery	74	80.4	10	10.9	8	8.7	
Others (Ortho, ENT, Dental)	9	60	2	13.3	4	2.7	
History of previous surgery							
Yes	32	61.5	7	13.5	13	25.0	0.022
No	61	39.6	29	18.8	64	41.6	

Majority 93 (45.1) of respondents had mild anxiety, 36 (17.5) of them had moderate and 77 (37.4) had severe level of preoperative anxiety (fig. 1).

Preoperative anxiety level was significantly associated with age, gender, and occupation status, type of ward, and history of previous surgery of the respondents since  $p$ -value < 0.05 (0.004, < 0.001, < 0.001, < 0.001, 0.022 respectively) (table 3).

## DISCUSSION

The prevalence of preoperative anxiety in this study was 36.9% as suggested by STAI score of more than 44. This result was similar to the study conducted Northwest Ethiopia, (48.3%).<sup>6</sup> Surgical patient using similar tool which the overall prevalence of preoperative anxiety was lower than study done in Northwest Ethiopia and South Western Ethiopia (61%, 70.3%).<sup>1,7</sup>

The findings of study showed that 93 (45.1%) had mild level of anxiety. This finding is inconsistent with the study done in Ankara in which they reported that maximum of the patients had high level of anxiety.<sup>8</sup> In this study 37.4% had severe anxiety and 17.5% had moderate anxiety.

The findings of the study showed that age was found to be significantly associated with level of preoperative anxiety. Some previous studies support this findings.<sup>9-11</sup>

The findings of this study showed that female patients had severe level of preoperative anxiety. This was statistically significant ( $p < 0.001$ ). This association has also been demonstrated by previous similar studies.<sup>1,7,10-13</sup> This results could be because women are more sensitive to fearful events, and fluctuation of estrogen and progesterone hormone level. In addition, females express their anxiety more easily. Whereas other study found that gender was not a determinant of preoperative anxiety.<sup>14-16</sup>

Occupational status was a statistically significantly association with level of preoperative anxiety. This study

was supported by the study done in Ankara which indicated that housewives were found to be more anxious than employed and even retired people.<sup>4</sup>

In this study, the percentage of participants with severe anxiety level was found to be more among those having low income (< 30000). This may be due to financial crisis.

Gynecological surgery was found to be associated with severe anxiety levels (65.5%). High anxiety in gynecologic patients may be due to cancer and gender related anxiety. This research was consistent with research conducted in Northwest Ethiopia.<sup>9</sup>

Patients who had previous history of surgery had less anxiety than patients waiting for surgery for the first time, this was statistically significant. This finding was consistent with some other studies.<sup>5,10,15,16</sup> These results suggest that patient who had undergone surgery earlier were less anxious because they had less "fear of unknown" about surgery.

There are some limitations of this study that could be addressed by future research. Firstly, this study did not measure patients' anxiety level before admission. Secondly, comparison between preoperative and postoperative anxiety level among respondents were not done.

## CONCLUSION

All the respondents had preoperative anxiety, among them majority of them had mild, more than one third of respondents had severe and minority of them had moderate preoperative anxiety. Socio-demographic characteristics that were significantly associated with the preoperative anxiety were age, sex, occupation status, type of surgery and history of previous surgery. Patient needs to be assessed regularly for anxiety during the preoperative visit and appropriate anxiety reduction methods should be introduced.

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# Hysterectomy Patterns in a University Hospital, Kavre, Nepal: 2012 - 2016

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## ABSTRACT

### Background

Hysterectomy is the most frequently performed major gynecological surgery and uterine fibroid is the most common indication for the surgery.

### Objective

To assess the patterns of hysterectomy and to compare the length of hospital stay and cost of treatment between laparoscopic assisted and abdominal hysterectomy.

### Method

A retrospective review of women who underwent hysterectomies in the department of Obstetrics and Gynecology (January 2012 - December 2016) at Dhulikhel hospital was performed. Type of hysterectomy, age of the patients, duration of hospital stay, total treatment costs and indication for surgery were determined.

### Result

Five hundred and forty-one women underwent hysterectomies during the study period, which comprised 30% of total gynecological procedures. Before introduction of laparoscopic assisted vaginal hysterectomy, open hysterectomies were done in more than 60% women, which decreased to 42% in 2016. Laparoscopic hysterectomy was inclined to 22% and 40.5% in 2015 and 2016 respectively. The most common indications were fibroid uterus (30%) and abnormal uterine bleeding (25.6%). The mean days of hospital stay of patients in laparoscopic was significantly shorter when compared to open ( $3.3 \pm 1.7$  days versus  $7.2 \pm 1.9$  days) ( $p < 0.001$ ). Average cost for treatment was increased by 25% in laparoscopic hysterectomy compared with total abdominal and vaginal hysterectomy.

### Conclusion

An increased proportion of laparoscopic assisted hysterectomies in the department of obstetrics and gynecology were reported. Laparoscopic hysterectomy was shown to be expensive in direct costs; more benefits from evidences favors a laparoscopic approach over the abdominal approach.

## KEY WORDS

*Hysterectomy, Laparoscopic assisted vaginal hysterectomy, Patterns, Type of hysterectomies*

## INTRODUCTION

Hysterectomy is the surgical removal of the uterus. For certain conditions, it may also involve removal of the cervix, ovaries, fallopian tubes and other surrounding structures.<sup>1</sup> It is the second most common surgical procedure in gynecology, second only to cesarean section.<sup>2,3</sup> Hysterectomy varies between the countries ranging from 2.13-3.62/1000 in Germany to 5.4/1000 in United States.<sup>3</sup> In India, estimated incidence of hysterectomy, was 20.7/1000 woman with the mean age of 36 years.<sup>4</sup> In Nepal, hysterectomy was the most common gynecological surgery in a tertiary care hospital (59%).<sup>5</sup>

The most common indications of hysterectomy were uterine fibroid, utero-vaginal prolapsed (UVP), endometriosis and dysfunctional uterine bleeding.<sup>6,7</sup> Supreme Court in Nepal declared uterine prolapse a human rights issue in 2008, and in response, the government pledged support for hysterectomies free of charge.<sup>8</sup>

Vaginal hysterectomy (VH) and total abdominal hysterectomy (TAH) were the only surgical approaches for hysterectomy until 1989; then in the early 1990s, other laparoscopic techniques were developed; total laparoscopic hysterectomy (TLH), laparoscopically assisted vaginal hysterectomy (LAVH).<sup>3</sup> To date, a few comparative studies have been conducted in Nepal.<sup>9,10</sup> However, there has been no assessment of patterns of hysterectomy in Nepal to better understand the situation in the country.

The aim of this study was to assess the patterns of hysterectomy among patients who underwent hysterectomy in the department of obstetrics and gynecology at Dhulikhel hospital in Kavre, Nepal. Specific objectives were, to report on: i) types, pattern and indication of hysterectomies; ii) length of hospital stay and cost of treatment between LAVH, TAH and VH.

## METHODS

This was a retrospective cross-sectional study. After approval of Institutional Review Committee, Kathmandu University School of Medical Sciences, (IRC 77/18), study was conducted among all patients who underwent hysterectomy in the department of obstetrics and gynecology at Dhulikhel Hospital, Kathmandu University Hospital from January 2012 to December 2016.

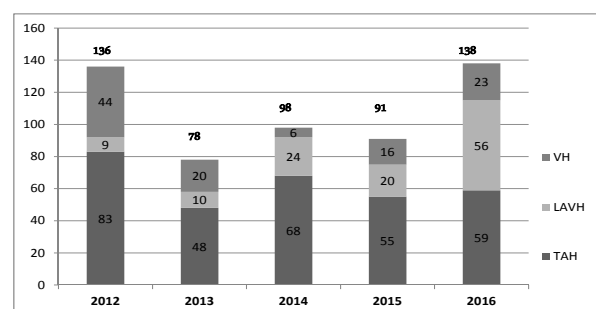
Data on patients' demographics: age, place from where they came, type and indications for hysterectomies were extracted from the operating theatre record in Microsoft Access by the principal investigator. A data collector, collected information on duration of hospital stay and total cost for the treatment from the medical records of all patients who underwent hysterectomy during the study period.

Data was sorted, coded, and entered into Microsoft Access and then to Statistical Package for the Social Sciences (SPSS) software version 19 for management and analysis. Numbers, mean and proportions were calculated to describe the clinical and demographic characteristics of all patients, such as age, district, indication and type of hysterectomy. Independent t-test was done for comparison of duration of hospital stay in patients with different types of surgery. P-value less than 0.05 was considered significant.

## RESULTS

Between January 2012 and December 2016, 541 patients underwent hysterectomies in the department of obstetrics and gynecology. The mean age of the patients was 45.5 years (range 41-50 years). The major age group of the women who underwent hysterectomies was 41-50 years (250, 50%) whereas 127 (23%) women were in age group of 31-40 years and 142 (26%) were above 50 years of age. Almost 60% of women came from Kavre district for the surgery, 15% from Bhaktapur, 7.7% from Sindhupalchowk, 6% from Kathmandu and 2.5% from Sindhuli.

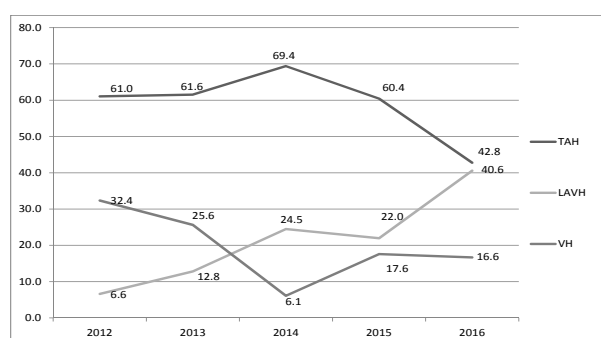
Hysterectomies comprised 30% of the total gynecological surgeries (1776) at Dhulikhel hospital during the study period. Figure 1 shows the type of hysterectomies performed. Among the total women who underwent hysterectomies, TAH, LAVH and VH were performed in 60%, 20% and 20% of women respectively (fig. 1). In 2012 and 2013, the proportion of TAH was 61% and 62% of all hysterectomies, respectively. The rate was decreased to 60% to 43% from 2015 to 2016. LAVH was started in 2011 at Dhulikhel hospital with the few number of cases at the beginning. There was a concomitant increase in LAVH from 22% to 41% in 2015 and 2016 respectively. Similarly, the rate of VH also decreased from 32 % to 17% over the years (fig. 2).



**Fig. 1. Type of hysterectomies among the patients who underwent hysterectomies at Dhulikhel hospital, Kave, Nepal: 2012 – 2016 (n=541)**

The most common indication for hysterectomy was fibroid uterus (30%) followed by abnormal uterine bleeding (27%) and utero-vaginal prolapse (21%). With the diagnosis of uterine cancers, 7% women underwent hysterectomies (Table 1).





TAH: total abdominal hysterectomy; LAVH: laparoscopic assisted vaginal hysterectomy; VH: vaginal hysterectomy; n: number

**Fig. 2.** Pattern of hysterectomies among the patients who underwent hysterectomies at Dhulikhel hospital, Kave, Nepal: 2012 – 2016 (n=541)

**Table 1.** Indications for the surgery among the patients who underwent hysterectomies at Dhulikhel hospital, Kave, Nepal: 2012 – 2016 (n=541)

Indication	TAH (%)	LAVH (%)	VH (%)
Fibroid uterus	87.6	11.1	1.3
Abnormal uterine bleeding	54.6	45.4	0
Utero-vaginal prolapse	0.8	12.4	86.8
Uterine cancer	72.5	27.5	0
Endometriosis	89.1	10.9	0
Inflammatory diseases of pelvic organs	55.2	44.8	0
Others	45.0	55.0	0

The mean days of hospital stay of women who underwent LAVH was significantly shorter when compared to TAH ( $3.3 \pm 1.7$  days versus  $7.2 \pm 1.9$  days), which was significant ( $p < 0.001$ ). The total cost of treatment was similar in women who underwent TAH and VH (32,000 – 33,000 rupees in an average) whereas the total cost of treatment were 40,000 rupees for the patients who underwent LAVH in an average (increased by 25%).

## DISCUSSION

This study showed that hysterectomy is the most common gynecological procedure performed by in 541 (30%) women in department of obstetrics and gynecology. The high rate of hysterectomy was also reported by several other studies.<sup>5,6</sup> This high rate of hysterectomy in our study can be explained by the fact that Nepal still has a huge burden of uterine prolapse (UP). The United Nations Population Fund (UNFPA) notes that 600,000 Nepali women suffer from UP.<sup>8</sup> It is still the second most common indication and constitutes a major bulk for hysterectomy in developing countries.<sup>11</sup>

The most common indications for hysterectomy were fibroid Uterus (30%), abnormal uterine bleeding (26.7%) and utero-vaginal prolapse (21%) in this study. Fibroid

uterus remains the most common indication for elective hysterectomy worldwide.<sup>3,12</sup>

The mean age of the women in our study was 45.5 years (range 41-50 years). Similar range of age was reported among the women who underwent hysterectomy in many studies.<sup>7,9,13</sup> In contrast, another study found that the mean age of the women who underwent hysterectomy was 61 years.<sup>14</sup>

Our study reported that there were an increased number of hysterectomies performed with laparoscopic assistance over the period of time (6.6 – 40.6%) with an associated decline in the proportion of abdominal/vaginal hysterectomies performed in between 2012 and 2016. Similar finding was reported in a study conducted in USA.<sup>13</sup> Morgan also reported that the proportion of hysterectomies performed laparoscopically increased 66.3% in 2013.<sup>11</sup> This high rate can be attributed to the fact that although LAVH is a recent innovation, there has been a rapid proliferation of its use.<sup>1,15</sup> A Cochrane database systematic review demonstrated that after laparoscopic hysterectomy, patients recovered more quickly, less postoperative morbidity shorter hospitalization, faster recovery and better short term quality of life measures.<sup>16,17</sup> However another study did not show any difference in post-surgery recovery, satisfaction with the outcome of the operation or quality of life four weeks postoperatively between TAH and LAVH.<sup>18</sup>

Hospital stay is a matter of concern for every patient and his or her family.<sup>9</sup> Longer duration of hospital stay is usually associated with financial burden, psychological stress.<sup>19</sup> In this study, the mean hospital stay of patients in LAVH was significantly shorter when compared to the patients with TAH and VH. Significant findings were reported in many other studies as well.<sup>14,17,20,21</sup>

The study showed that the cost of treatment for laparoscopic surgery was 25% higher than in TAH/VH. This can be explained by the fact that the high cost of the instruments needed for the laparoscopic surgery and the length of operating time needed, it is more expensive than a open methods.<sup>9</sup> A meta-analysis of 12 randomized controlled studies also reported that the total direct costs for laparoscopic hysterectomy were 6.1% higher than TAH. It concluded that the shorter hospital stay and decreased morbidity in the laparoscopic group compensates for the increased operating cost compared to TAH.<sup>15</sup> A study conducted in 600 hospitals in USA, provides clinical evidence in support of less invasive approaches to hysterectomy. In addition to other documented benefits, the lower incidence of surgical site infections (SSIs) and lower rates of associated complications and costs with these procedures than with open abdominal hysterectomy should be taken into account when weighing the risks and benefits of a surgical approach for patients undergoing hysterectomy.<sup>20</sup>

Our study has some strength. First, we used routinely collected data, thus the findings are likely to reflect the operational reality on the ground. Second, the data collector was well trained and supervised by the principal investigator, which ensured the quality of the data.

## CONCLUSION

In conclusion, our study showed an increased proportion of laparoscopic assisted hysterectomies in the department of obstetrics and gynecology. The most common indication for hysterectomy was fibroid uterus. Laparoscopic

hysterectomy was associated with shorter length of hospital stay in comparison to TAH and VH. Laparoscopic hysterectomy was shown to be expensive in direct costs; more benefits from evidences favors a laparoscopic approach over the abdominal approach.

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# Pain Assessment and Management by Nurses in Neonatal Intensive Care Unit

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## ABSTRACT

### Background

Nurses are present with the neonates twenty-four hours in the Neonatal Intensive Care Unit (NICU). Therefore, they are the prime persons to assess and manage pain of neonates during invasive procedures performed in the neonatal intensive care unit.

### Objective

To assess knowledge and perceptions of nurses on pain assessment and non-pharmacological pain management of neonates in the neonatal intensive care unit.

### Method

The study adopted a prospective cross-sectional study design. Data were collected using census survey method from the six teaching hospitals after taking permission from Institutional Review Committee (IRC) of study sites and from the respondents too. The study was carried out from February 2017 to December 2018. The 74 neonatal nurses who had more than two weeks of working experiences in the neonatal intensive care unit were included in the study. Structured and a semi-structured, self-administered questionnaire were used in order to collect the data. Descriptive statistics including frequency, percentage, mean and standard deviation were calculated to summarize the data.

### Result

Among 74 neonatal intensive care unit nurses, knowledge on neonatal pain mean and SD was  $23.6 \pm 4.3$  (score 0-60) perception of pain assessment was  $49.8 \pm 7.3$  (score 0-72) and perception of pain intervention in neonatal intensive care unit was  $18.4 \pm 2.6$  (score 0-24) respectively.

### Conclusion

Nurses' knowledge on pain assessment and non-pharmacological interventions in the neonatal intensive care unit is essential to prevent the neonates from the further damage caused by pain. The findings of this study suggest that in-service education regarding non-pharmacological pain alleviation in neonates should be conducted.

## KEY WORDS

*Neonatal intensive care unit, Non-pharmacological pain management, Pain assessment*

## INTRODUCTION

Newborns admitted to NICU are often submitted to painful procedures.<sup>1</sup> Pain perception in children is complex, and is often difficult to assess.<sup>2</sup> Most medical and nursing procedures still cause pain in children. Nurses need to know useful measures to control or relieve children's pain.<sup>3</sup>

Healthcare providers' observation is the common available sources of pain assessment.<sup>4</sup> Pain is known as the 5<sup>th</sup> vital sign.<sup>5</sup> Early exposure to repeated procedural pain is a main factor contributing to negative physiological cognitive, behavioral and psychological consequence in infants.<sup>6</sup> Pain management in the neonatal period should base on accurately identifying the presence of pain as the first step for its optimal management.<sup>7</sup> Non-pharmacological methods use for procedural pain in hospitalized neonates are-oral sucrose, kangaroo care, breast feeding, skin touch, swaddling, giving pacifier, positioning, music and arrangement of the environment.<sup>7-11</sup> They need to understand barriers that prevent the provision of optimal nonpharmacological pain management for neonates by nurses is considered as a vital importance in order to eliminate unnecessary pain experienced by neonates.<sup>12</sup> Nurses should assess pain and recognize the procedural pain in neonates, by apply different pain management methods and identify barriers for pain management and try to overcome there in order to break the gap between the knowledge and practice.<sup>12</sup>

Therefore, improving nurses' practice of procedural pain management is necessary and the use of non-pharmacological methods is mandatory.<sup>13</sup>

Published data were not found in the studies carried out in the similar topic in the study area. So, with the objective of assessing neonatal nurses' knowledge and perceptions related to pain assessment and non-pharmacological pain management in NICU was carried out.

## METHODS

This study adopted a prospective cross-sectional study design. Data were collected using census survey method from the six teaching hospitals after taking permission from Institutional Review Committee (IRC) of study sites and from the respondents too. The study was carried out from February 2017 to December 2018. The 74 neonatal nurses who had more than two weeks of working experiences in the NICU were included in the study. Data collection tool was prepared by extensive literature search. The tool was pre-tested among 10% NICU nurses of different hospitals, and those were not included in the study. Nurses were explained the study purpose and they were explained refusal to participate in the study of their choice. After obtaining written consent from participate in the study, self-administered questionnaire was given separately.

Nurses were assured of confidentiality and anonymity in the study. Nearly, 15-20 minutes was needed to complete the questionnaire. The data were collected in four parts. In the first phase, demographic variables of nurses (age, religion, marital status, qualification, experience in NICU and in-service education). In the second parts, question on knowledge on neonatal pain among NICU nurses. In the third parts, nurses' opinion survey scale was used on perception of pain assessment in the NICU. In the fourth parts, questionnaire on perception of pain intervention in the NICU. In this survey, the nurses were asked to think and indicate the degree to which each of the statements characterized. The highest score was 156 and the lowest is 26. Two open-ended questionnaires were asked on facilitating and hindering factors on assessment and non-pharmacological management of neonatal pain in NICU. SPSS version 16.0 was used for data analysis. Data were analyzed using descriptive statistical tests (frequency, mean and SD).

## RESULTS

Out of 74 respondents, three-fourth (75.6%) of the nurses was of age group < 25 years. Two-third of the respondents belongs to Hindu (89.1%) by religion, majority were of unmarried un-married (91.8%) maximum of them completed Proficiency in Certificate Level nursing (90.5 %) and working experiences of 2.3 years in NICU.

Nearly, more than half of the nurses assess pain in neonates (59.4%) and (86.4%) state that they do not have standards and routines to assess pain in neonates (Table 1). None of the respondents received in-service education related to pain assessment and non-pharmacological pain management in NICU.

**Table 1. Demographic Characteristics of Respondents (n=74)**

Characteristics	Number	Percentage
<b>Nurses Age</b>		
< 25	56	75.6
≥ 25	18	24.3
<b>Religion</b>		
Hindu	66	89.18
Others	8	10.8
<b>Marital status</b>		
Married	6	8.10
Unmarried	68	91.89
<b>Qualifications</b>		
Proficiency in Certificate Level	67	90.5
Bachelor	7	9.4
<b>Assess pain in neonates in NICU</b>		
Yes	44	59.45
No	30	40.54

Among the 74 neonatal nurses mean and standard deviation of knowledge on neonatal pain was 23.6+4.3, perception of pain assessment 49.8+7.3 and on perception of pain intervention was 18.45 + 2.6 (Table 2).

**Table 2. Knowledge and Perception on Neonatal Pain Assessment and Intervention among Nurses in the NICU (n=74)**

Characteristics	Mean + SD	Score
Knowledge on neonatal pain among neonatal nurses	23.6 + 4.3	0-60
Perception of pain assessment in the NICU by neonatal nurses	49.8+ 7.3	0-72
Nurses perception of pain intervention in the NICU	18.45 + 2.6	0-24

Nearly more than half (58.1%) of nurses practices non-pharmacological pain management and among non-pharmacological practices (38.4%) used expressed milk (Table 3).

**Table 3. Practice of Non-pharmacological Pain Management (n=74)**

Characteristics	Number	Percentage
<b>Practice of non-pharmacological pain management</b>		
Yes	43	58.10
No	31	41.89
<b>Types of non-pharmacological pain management (n=43)*</b>		
Expressed milk	25	38.46
Pacifier	13	20.00
KMC	10	15.38
Position	8	12.30
Sucking	6	9.23
Lapping and music	2	3.07
Stimulating and warm / comfort	1	1.53

\* Multiple responses

Out of 74 nurses, only 11 neonatal nurses responded to the question, on which slightly more than fifty percent (54.5%) said experiences, 45.5% which is slightly less than fifty percent said knowledge on pain assessment and management and (27.2%) state that in-services education as the facilitating factors for assessing and managing neonatal pain.

Out of 74 nurses, only 11 neonatal nurses who responded to the question, slightly more than one fourth of the respondents respond that lack of knowledge (27.2%), lack of staff (18.1%) and lack of experiences (13.6%), and work load (9.0%), as the hindering factors for assessing and managing neonatal pain in NICU (Table 4).

## DISCUSSION

In this study, knowledge on neonatal pain among NICU nurses was nearly one-third 23.6+4.3, out of 60 score.

**Table 4. Facilitating and Hindering Factors for Assessing and Managing Neonatal Pain in NICU (n=11)**

Characteristics	Number	Percentage
<b>Facilitating factors for assessing and managing neonatal pain in NICU</b>		
Experiences in NICU	6	54.54
Knowledge on pain assessment and management	5	45.45
In-service education on pain assessment and management	3	27.27
<b>Hindering factors for assessing and managing neonatal pain in NICU</b>		
Lack of knowledge on pain assessment and management	6	27.27
Lack of staff in NICU	4	18.18
Lack of experiences in NICU	3	13.63
Work load in NICU	2	9.09

\* Multiple responses

This finding was nearly consistent with the study findings conducted in Iran (13.5 out of 28).<sup>14</sup> In a study by Laura MS et al. most of the nurses had a good level of knowledge of pain management.<sup>15</sup> Country wise; nurses had different levels of knowledge on neonatal pain in the NICU.

This study revealed that slightly more than half of the respondents 58.1% practices non-pharmacological pain intervention for neonates during procedures. Nearly a similar type of study finding was found by Fariba et al. (4.22 out of 10 score).<sup>16</sup> In a study done in Turkey 74.9% and in one national survey done by Cong et al. was 79% which were very high as compare to this study.<sup>10,17</sup> The differences may be due to different context.

Types of non-pharmacological pain interventions done in this study was expressed breast milk (38.4%), (27.4%) pacifier (20.1%), (55.3%) KMC (15.3%) (75%) positioning (12.3%), non-nutritive sucking (9.2%) non-nutritive sucking and among others was (4.37%) respectively.<sup>10</sup> In different countries different type of non-pharmacological interventions were found to have used for procedural pain in neonates.

In this study, no one found to have received in-service education on non-pharmacological pain management. In Egypt 70.6% of nurses did not attend any in-service education.<sup>18</sup> In a study done by Collados et al. found that 47.9 % of the participants receive in-service education. There is much more differences in findings of different countries. The countries where nurses received in-service education on non-pharmacological pain management had a high practice level on pain management as compared to not receiving in-service education.

On one side, among the facilitating factors in the present study, experiences (54.5%) found greater followed by, knowledge on pain assessment and management (45.4%) and receiving in-service education (27.2%) respectively.

On the other side there were also some hindering factors in this study like knowledge on pain assessment and management (27.2%) and in a study done by Borgrteede SD also stated lack of knowledge in their study too.<sup>19</sup> This study (18.1%) stated that lack of staff was the another factors responsible for and was supported by Lui et al. and Namnabati et al. in their study too.<sup>20,21</sup> Lack of experiences in NICU (13.6%) in the present study is also aligned with a study done by Borgrteede et al.<sup>19</sup> Work load in NICU in the present study was( 9%) Lui et al., Namnabati et al. and Aziznejadroshan et al. concluded work load as hindering factors in their study too.<sup>20-22</sup>

## CONCLUSION

Present study finding also suggest that there is need of in-service education. In-service education not only enhance the knowledge, but also lead to optimal use of non-pharmacological pain management in neonates.

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# Knowledge, Attitude and Preference toward Mode of Delivery among Pregnant Women Attending Antenatal Clinic of Tertiary Level Hospital of Kathmandu

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## ABSTRACT

### Background

Childbirth generates the human race on earth. The most common natural delivery mode is vaginal delivery. The prevalence of vaginal delivery is declined because of increased preference for caesarean section.

### Objective

To investigate knowledge, attitude and preference towards the mode of delivery among pregnant women.

### Method

A descriptive cross-sectional study design was used with 384 pregnant women using consecutive sampling method. Data collection was done from November 2019 to February 2020 using semi-structured questionnaire. Data was analyzed using descriptive and inferential statistics.

### Result

Almost all pregnant women (91.4%) preferred vaginal delivery. The majority of pregnant women (79.4%) had adequate knowledge regarding the mode of delivery. A higher proportion of pregnant women (97.9%) had a positive attitude toward vaginal delivery. The knowledge of the mode of delivery was significantly influenced by occupation (p-value 0.022) and annual income (p-value 0.006). The attitude toward caesarean section was significantly affected by age (p-value < 0.001) and type of family (p-value < 0.001). The knowledge of pregnant women was related to attitude toward caesarean and vaginal delivery (p-value < 0.001).

### Conclusion

Most of the women had adequate knowledge of the mode of delivery. More women had a positive attitude toward vaginal delivery than a caesarean section and preferred vaginal delivery.

## KEY WORDS

*Attitude, Knowledge, Preference of Mode of Delivery, Pregnant Women*



## INTRODUCTION

Childbirth experience has always represented a very important event in women's lives. It is a unique and special moment and marked by the transformation of the woman in her new role of being a mother.<sup>1</sup> The childbirth process can expose women to many risks during pregnancy, delivery, and the postpartum period. One important decision during this process is the mode of delivery. The choice of delivery route is of great importance to the health of the mother as well as the child. This decision must be made by closely evaluating the mother and fetus throughout the pregnancy.<sup>2</sup> The childbirth mechanism is a natural process without the need for any intervention and has been carried for years. The most common and available natural delivery mode is vaginal delivery (VD). VD is the best mode in normal conditions. It occurs with as little intervention as possible and is also the ideal mode for the female physiological structure. However, VD is not possible in conditions such as head-pelvis incompatibility, malpresentation, fetal distress, and a large baby. VD may be risky for the mother or baby in those cases. So, the baby must be delivered by cesarean mode. But unfortunately, the prevalence of VD is declined in recent years because of increased preference for caesarean section (CS).<sup>3,4</sup>

An increasing birth by CS is an issue of public health concern in many countries. World Health Organization (WHO) recommended that the proportion of cesarean deliveries should remain between 10% and 15% with specific medical indications for every country.<sup>5</sup> However; the global CS rate increased steadily to 12.1% in 2000, and 21.1% in 2015.<sup>6</sup> Women often choose CS because of improved understanding of its safety and increase the right to self-decision regarding the mode of delivery. The main reason for choosing CS is fear and lack of sufficient knowledge about VD.<sup>7</sup> The CS is significantly increasing in government and private hospitals of Nepal. CS rate was 5% in 2011 and 9% in 2016.<sup>8</sup> Most women are accepting delayed childbearing, refuse to offer VD after a CS. Even health facilities do not want to take risk of VD after CS. There are limited studies and publications on Knowledge, attitude, and preference for a mode of delivery in the context of Nepal. Therefore, this study aimed to investigate pregnant women's knowledge, attitude, and preference for a mode of delivery.

## METHODS

A descriptive cross-sectional study was conducted. The study was conducted among pregnant women attending ANC OPD of a tertiary level hospital in Kathmandu from Nov 2019 to Feb 2020. The respondents were selected from ANC OPD. The sample size was 384. It was calculated by  $z^2pq/d^2$  in 95% CI where an allowable error was taken as 5% and 50% prevalence. The calculated sample was selected by a consecutive sampling method. The inclusion

criteria were pregnant women with 24-40 weeks of gestation, both primi and multigravida women. Pregnant women with known cases of medical and surgical such as chronic hypertension, diabetic mellitus, appendectomy, cholecystectomy, and twin pregnancy, mal-presentation such as breech were excluded from the study.

The self-constructed semi-structured questionnaires were prepared with help of existing related literature and the research team. It was divided into five parts. Part I consisted of information related to socio-demographic variables. Part II consisted of information related to obstetric variables. Part III consisted of information related to the reasons for preferring a mode of delivery. The response format of part I, II, III questions was in yes/no, open, and multiple responses. Part IV consisted of knowledge-related questions regarding VD and CS. Part V consisted of nineteen items related to positive and negative attitudes toward VD and CS. The responses format of attitude related questions was in Likert scale with five points; Strongly Agreed = 5, Agree = 4, No Idea = 3, Disagree = 2, Strongly Disagree = 1.

The interview method was used to collect data. It was conducted in a separate room by maintaining privacy. One respondent was given 15-20 minutes to collect information. The researchers collected data from 8-15 respondents in a day.

The content validity of English version instruments was maintained through consultation with research experts and subject experts. The Validated English version instrument was translated into the Nepali version by a Nepali linguist. The pretesting of Nepali version instruments was done among 10% of the sample size for its reliability. The reliability of the attitude-related instrument was calculated by Cronbach's Alpha and its value was 0.635 for statements of CS and 0.718 for statements of VD. Based on the pretesting, instruments were revised and modified to increase its clarity.

Formal permission was taken from the concerned authorities for study. Ethical approval was obtained from the Institutional Review Committee of the Nepalese Army Institute of Health Sciences (IRC-NAIHS #138/24/05/2018). The verbal and written informed consent was taken from each respondent before data collection. Confidentiality was maintained by not revealing the information received and using it only for study. None of the respondents were forced to participate in the study.

The collected data was edited, coded, and entered in Microsoft Excel. It was analyzed using descriptive statistics i.e. frequency, percentage, mean, and standard deviation. The association and correlation were analyzed using chi-square, and Pearson's correlation. The statistical significance was defined as a p-value < 0.05. The used statistical package was SPSS version 17. The cut-off point of knowledge level was 50% of the total possible score (Mid-value).<sup>9</sup> Less than 50% were categorized as

an inadequate level of knowledge and  $\geq 50\%$  was an adequate level of knowledge. Each respondent's attitude score was calculated. The respondents who obtained  $\leq 3$  and  $> 3$  scores in scale-out of five scores were considered as negative and positive attitudes toward caesarean and vaginal delivery respectively.

## RESULTS

Table 1 shows that the mean age of women was  $27.46 \pm 3.84$ . The majority of women (76.3%) were from urban area. More than half of women (55.2%) had higher secondary education. The majority of women (61.7%) were homemakers. Half of the women (52.1%) belonged to a joint family.

**Table 1. Socio-Demographic Variables of Pregnant Women (n=384)**

Variables	Number (n)	Percent (%)
Age		
≤25	129	33.6
26 - 30	166	43.2
≥31	89	23.2
Mean Age	27.46±3.84	
Address		
Urban	293	76.3
Rural	91	23.7
Educational Status		
No formal schooling	07	1.8
Primary and Secondary	82	21.4
Higher Secondary	212	55.2
Bachelor and above	83	21.6
Occupation		
Homemaker	237	61.7
Non Government employee	71	18.5
Government employee	50	13
Others (Student, Business)	26	6.8
Annual income		
≤ 250000	110	28.7
250001 - 400000	191	49.7
≥ 400001	83	21.6
Type of Family		
Nuclear Family	184	47.9
Joint Family	200	52.1

In table 2, less than half of women (43.0%) were the second gravida. Most of the women (88.6%) had 1-2 children. A majority (84.9%) of women's previous delivery was vaginal. The majority of the pregnancy (80.7%) was planned. A higher proportion of women (82.8%) wanted 2 or more children.

**Table 2. Obstetrical Variables of Pregnant Women (n=384)**

Obstetric Variables	Number (n)	Percent (%)
First gravida	138	35.9
Second gravida	165	43.0
Third gravida	81	21.1
<b>Number of living children (n=246)</b>		
$\leq 0$	28	11.4
1-2	218	88.6
<b>Previous mode of delivery (n=218)</b>		
Vaginal	185	84.9
Caesarian	33	15.1
<b>Planned pregnancy</b>		
No	74	19.3
Yes	310	80.7
<b>Planning Number of children</b>		
up to 1	66	17.2
2 or more	318	82.8
<b>The duration of pregnancy</b>		
$\leq 30$ weeks	121	31.5
31-35 weeks	133	34.6
$\geq 36$ weeks	130	33.9

**Table 3. Knowledge of Pregnant Women regarding Caesarean Section and Vaginal Delivery (n=384)**

Statements	Correct n (%)	Incorrect n (%)
Blood loss in CS and VD is comparable*	129(33.6)	255(66.4)
Recovery period is longer in CS than VD	317(82.6)	67(17.4)
Postpartum infection is more frequent in CS than VD	277(72.1)	107(27.9)
Caesarian decreases risk of birth injury	212(55.2)	172(44.8)
Risk of maternal death is higher in CS than VD	172(44.8)	212(55.2)
Labour pain is less severe in CS than VD	211(54.9)	173(45.1)
Children who are born by CS are smarter than by VD*	154(40.1)	230(59.9)
CS is mandatory for breech presentation*	316(82.3)	68(17.7)
Neonatal respiratory distress less frequent in VD than CS	170(44.3)	214(55.7)
CS is mandatory after a CS*	267(69.5)	117(30.5)
VD has more damage to the urinary genital organs	297(77.3)	87(22.7)
Urinary and fecal incontinence are more in VD than CS	240(62.5)	144(37.5)
Anesthesia risk is more in CS than VD	307(79.9)	77(20.1)
CS needs longer hospital stay than VD	376(97.9)	08(02.1)
CS mothers need more care than VD	365(95.1)	19(04.9)
CS couple can return to sexual relation early then VD*	110(28.6)	274(71.4)
CS have less vaginal examination then VD	241(62.8)	143(37.2)

\*right answer

In table 3, presents the knowledge-based statements inquiring about the mode of delivery. The statements about CS needs a longer hospital stay, CS mothers need more care, the recovery period is longer in CS, CS is mandatory for breech presentation, and anesthesia risk is more in CS received the highest percentage of correct responses. The statements about CS couples can return to sexual relations early, blood loss in CS and VD is comparable and children who are born by CS are smarter had the highest incorrect responses.

**Table 4. Preference and Reason for Preferring Different Mode of Delivery**

Variables	Number (n)	Percent (%)
<b>Mode of delivery (n=384)</b>		
Vaginal	351	91.4
Caesarian	33	8.6
<b>Reasons for Preference of CS (n=33)*</b>		
Doctor's advice	22	66.7
Previous CS	28	84.8
Fear/pain of VD	09	27.3
Safety of baby	24	72.7
Only one child	06	18.2
<b>Reasons for Preference of VD(n=351)*</b>		
Cheap	125	35.6
Early recovery	312	88.9
Less hospital stay	284	80.9
Fear of operation	172	49
Previous experience	127	36.2
Early introduction of any kind of food	279	79.5
Family pressure	42	12
Early initiation of breastfeeding	275	78.3
Natural way of delivery	288	82.1

\*Multiple Responses

**Table 5. Level of Knowledge of Pregnant Women Regarding Caesarean Section and Vaginal Delivery**

Variables	Number (n)	Percent (%)
Inadequate	79	20.6
Adequate	305	79.4
<b>Total</b>	<b>384</b>	<b>100.0</b>

**Table 6. Pregnant Women's Attitude toward Caesarean Section and Vaginal Delivery (n=384)**

Statements	Strongly Agree n (%)	Agree n (%)	No idea n (%)	Disagree n (%)	Strongly Disagree n (%)
<b>Vaginal Delivery (VD)</b>					
Natural and acceptable mode of delivery	116 (30.2)	209 (54.4)	34 (8.9)	11 (2.9)	14 (3.6)

Able to see and feel a baby immediately if it is pleasure	130 (33.9)	211 (54.9)	20 (5.2)	14 (3.6)	09 (2.3)
Mother regains health status earlier	123 (32.0)	233 (60.7)	15 (3.9)	11 (2.9)	02 (0.5)
Creates a more affectionate mother-baby relations	136 (35.4)	208 (54.2)	23 (6)	08 (2.1)	09 (2.3)
In terms of outcome and quick recovery, it is more pleasant	93 (24.2)	194 (50.5)	69 (18.0)	17 (4.4)	11 (2.9)
VD impose woman's ability to give sexual pleasure	23 (6.0)	58 (15.1)	217 (56.5)	50 (13.0)	36 (9.4)
Introduce any kind of food to mother	128 (33.3)	194 (50.5)	30 (7.8)	24 (6.3)	08 (2.1)
Mother feels empowered emotionally	131 (34.1)	200 (52.1)	41 (10.7)	8 (2.1)	04 (1.0)
More frequently and easily contact with baby	111 (28.9)	213 (55.5)	40 (10.4)	12 (3.1)	08 (2.1)
Easy in establishing and continuation of breast feeding	177 (46.1)	170 (44.3)	18 (4.7)	09 (2.3)	10 (2.6)
<b>Caesarean Section(CS)</b>					
CS is preferable in scheduling a particular birth date and time	42 (10.9)	190 (49.5)	96 (25.0)	25 (6.5)	31 (8.1)
CS is safer for the mother than VD	51 (13.3)	96 (25.0)	83 (21.6)	121 (31.5)	33 (8.6)
CS is safer for the baby than VD	54 (14.1)	125 (32.6)	83 (21.4)	82 (21.4)	41 (10.7)
Woman who deliver by CS miss a opportunity of process of VD	102 (26.7)	181 (47.4)	64 (16.8)	26 (6.8)	09 (2.4)
CS is preferred by the sound economic background couple	36 (9.4)	59 (15.4)	65 (16.9)	137 (35.7)	87 (22.7)
CS is preferable as pain of VD is unpleasant.	69 (18.0)	149 (38.8)	55 (14.3)	78 (20.3)	33 (8.6)
Baby born by CS is healthier and intelligent	36 (9.4)	25 (6.5)	148 (38.5)	117 (30.5)	58 (15.1)
A woman's recovery is longer in CS	107 (27.9)	171 (44.5)	56 (14.6)	29 (7.6)	21 (5.5)
CS leaves a large scar	144 (37.5)	168 (43.8)	42 (10.9)	17 (4.4)	13 (3.4)



In table 4, a higher proportion of women (91.4%) preferred VD than CS. Women chose CS due to the previous CS (84.8%) followed by the safety of the baby (72.7%) and doctor's advice (66.7%). Women chose VD due to early recovery (88.9%), natural way of delivery (82.1%), less hospital stay (80.9%), early introduction of any kind of food (79.5%), and early initiation of breastfeeding (78.3%).

In table 5, the majority of women (79.4%) had an adequate level of knowledge on VD and CS.

In table 6, in terms of attitudes regarding VD, more than half of women agreed with a natural and acceptable mode of delivery, the mother can able to see and feel the baby immediately, mother regains health status earlier, creates a more affectionate mother-baby relations and mother contact with baby more frequently and easily. In terms of attitude regarding CS, less than half of them agreed with CS is preferable in scheduling a particular birth date and time, woman deliver by CS miss an opportunity of the process of VD, a woman's recovery is longer in CS and CS leaves a large scar.

**Table 7. Attitude of Pregnant Women toward Caesarean Section and Vaginal Delivery (n=384)**

Variables	Positive n (%)	Negative n (%)	Mean Score
Vaginal Delivery	376(97.9)	08(2.1)	75.0±12.5
Caesarean Section	298(77.6)	86(22.4)	58.4±14.1

In table 7, the positive attitude of women was higher in VD (97.9%) than CS (77.6%). The mean score of attitude toward VD (75.0±12.5) was higher than CS (58.4±14.1).

**Table 8. Association of Socio-Demographic Variables with Knowledge and Preferred Mode of Delivery (n=384)**

Variables	Knowledge Level			Preferred Mode of Delivery		
	Inade-quate n (%)	Ade-quate n (%)	p-value	Vagi-nal n (%)	Cae-sarean n (%)	p-value
<b>Age</b>						
≤ 25	31 (39.2)	98 (32.1)	0.418	124 (35.3)	05 (15.1)	0.013
26-30	33 (41.8)	133 (43.6)		144 (41.1)	22 (66.7)	
≥ 31	15 (19.0)	74 (24.3)		83 (23.6)	06 (18.2)	
<b>Address</b>						
Urban	60 (75.9)	233 (76.4)	0.934	267 (76.1)	26 (78.8)	0.725
Rural	19 (24.1)	72 (23.6)		84 (23.9)	07 (21.2)	
<b>Educational Status</b>						
Up to Secondary	18 (22.8)	71 (23.3)	0.284	87 (24.8)	02 (6.1)	0.012
Higher Second-ary	45 (56.9)	167 (54.8)		195 (55.6)	17 (51.5)	

Bachelors and above	16 (20.3)	67 (21.9)		69 (19.6)	14 (42.4)	
<b>Occupation</b>						
Homemaker	47 (59.5)	190 (62.3)	0.022	213 (60.7)	24 (72.7)	0.048
Government employee	16 (20.3)	34 (11.2)		70 (19.9)	01 (3.0)	
Non Govern-ment employee	09 (11.4)	62 (20.3)		47 (13.5)	03 (9.1)	
Others (Student, Business)	07 (8.8)	19 (6.2)		21 (5.9)	05 (15.2)	
<b>Annual income</b>						
≤ 250000	15 (19.0)	95 (31.1)	0.006	103 (29.3)	07 (21.2)	0.010
250001 - 400000	52 (65.8)	139 (45.6)		179 (51.0)	12 (36.4)	
> 400001	12 (15.2)	71 (23.3)		69 (19.7)	14 (42.4)	
<b>Type of Family</b>						
Nuclear Family	39 (49.4)	145 (47.5)	0.772	168 (47.9)	16 (48.5)	0.946
Joint Family	40 (50.6)	160 (52.5)		183 (52.1)	17 (51.5)	

In table 8, there was a statistically significant association of a mode of delivery with age (p-value 0.013) and educational status (p-value 0.012). The occupation was statistically significant associated with knowledge (p-value 0.022) and mode of delivery (p-value 0.048). The annual income was statistically significant associated with knowledge (p-value 0.006) and mode of delivery (p-value 0.010).

**Table 9. Association of Socio-Demographic Variables with Attitude of Cesarean Section and Vaginal Delivery (n=384)**

Variables	Attitude of CS			Attitude of VD		
	Nega-tive n (%)	Posi-tive n (%)	p-value	Nega-tive n (%)	Posi-tive n (%)	p-value
<b>Age</b>						
≤ 25	47 (54.7)	82 (27.5)	< 0.001	05 (62.5)	124 (32.9)	0.147
26-30	25 (29.1)	141 (47.3)		01 (12.5)	165 (43.9)	
≥ 31	14 (16.2)	75 (25.2)		02 (25.0)	87 (23.2)	
<b>Address</b>						
Urban	69 (80.2)	224 (75.2)	0.331	06 (75.0)	287 (76.3)	0.93
Rural	17 (19.8)	74 (24.8)		02 (25.0)	89 (23.7)	
<b>Type of Family</b>						
Nuclear Family	26 (30.2)	158 (53.1)	< 0.001	03 (37.5)	181 (48.1)	0.551
Joint Family	60 (69.8)	140 (46.9)		05 (62.5)	195 (51.9)	

In table 9, there was a statistically significant association of attitude toward CS with age ( $< 0.001$ ) and type of family ( $< 0.001$ ). The attitude of VD was not associated with socio-demographic variables ( $p$ -value  $> 0.05$ ).

**Table 10. Association between Obstetric Variables and Preference of Mode of Delivery (n=384)**

Variables	Preferred Mode of Delivery		
	Vaginal n (%)	Caesarean n (%)	p-value
<b>Gravida</b>			
1 <sup>st</sup>	132(37.6)	06(18.2)	0.009
2 <sup>nd</sup>	148(42.2)	17(51.5)	
3 <sup>rd</sup> or above	71(20.2)	10(30.3)	
<b>Number of living children (n=246)</b>			
None	26(11.9)	02(7.4)	0.713
1-2	193(88.1)	25(92.6)	
<b>Previous Mode of Delivery (n=218)</b>			
Vaginal	182(94.8)	03(11.5)	$< 0.001$
Caesarean	10(5.2)	23(88.5)	
<b>Planned pregnancy</b>			
No	64(18.2)	10(30.3)	0.093
Yes	287(81.8)	23(69.7)	
<b>Plan of Number of children</b>			
Up to 1	65(18.5)	01(3.0)	0.044
2 or more	286(81.5)	32(97.0)	

In table 10, the obstetric variables gravida, previous mode of delivery, and plan of the number of children were statistically significant associated with mode of delivery respectively ( $p$ -value 0.009,  $< 0.001$ , and 0.044).

In table 11, there was a significant correlation between knowledge and attitude of CS and VD at the level of 0.01.

**Table 11. Correlation between Knowledge and Attitude of Caesarean Section and Vaginal Delivery (n=384)**

	Attitude Score	Attitude Score of CS	Attitude Score of VD
Knowledge P (correlation) Score	0.243**	0.230**	0.186**
p-value	$< 0.001$	$< 0.001$	$< 0.001$

\*\*Correlation is significant at the 0.01 level (2-tailed).

## DISCUSSION

Delivery is the most important issue of human beings and all generations of the world. Labour pain is unique and the most feared aspect of normal pregnancy. With the advent of increasing CS, there is a debate as to whether a mother should be allowed to choose between the modes of delivery. This study tries to explore the knowledge of women regarding a VD and CS and their attitude and preference for the mode of delivery.

In this study, almost all women preferred VD (91.4%). This study finding is consistent with an earlier study in Turkey (92.5%), Ghana (97.0%), Northern Ghana (92%), Thailand (87.5%), Nepal (92.6%), Maharashtra (91.5%), United Arab Emirates (86.9%) and Ghana (93.3%).<sup>2,3,10-15</sup> The above findings provide strong evidence that most of the women from different countries preferred vaginal delivery. According to the traditional view of society, they considered VD as a natural and safer method of childbirth, and CS is considered as a deviation from the normal way of giving birth because of a higher rate of complications, prolonged bed rest, large scars and, costly as well.

The reasons for preferring VD in the present study were early recovery (88.9%), a natural way to deliver (82.1%), fear of operation (49.0%), and experience of previous delivery (36.2%) while previous studies regarding reasons to prefer a VD were a natural way of delivery (90%), fear of operation (80%), in India, easier and faster recovery (55.9%) in Turkey, natural way to deliver (64.7%) in Maharashtra, faster recovery (76%), the experience of previous delivery (84.1%) in Iran, and natural way to deliver (64.7%) in Ghana.<sup>1,2,13,16,17</sup> The reasons for preferring CS in this study were previous CS (84.8%), the safety of baby (72.7%), doctor's advice (66.7%), and fear birth pain of VD (27.3%) whereas previous studies regarding reasons to prefer a CS were physician advice (85.6%), and fear birth pains (16.8%) in Turkey, doctor's advice (26.7%), fair of labour pain (6.7%) in Ghana, fair of pain (91.1%), and fair of harming the fetus (89.3%) in Iran, doctor advice (7.4%), previous CS (2.9%), fair of labour pain (4.9%) and baby sake (4.7%) in Hyderabad.<sup>2,3,16,18</sup> The above findings conclude that women have a similar opinion regarding reasons for preferring VD and CS but the proportion of those are not match even though women are from different countries with different characteristics, educational and economic status, socio-cultural beliefs, and health care delivery system.

In the current study, two-thirds of women (79.4%) had adequate knowledge of the mode of delivery. This finding is similar to a study done in Saudi Arabia where 78.2% of women had adequate knowledge.<sup>19</sup> But, the finding of the present study is much higher as compared to study conducted in Nepal where 45.7% and 44.9% of women had good and medium knowledge respectively, in the United Arab Emirates where 21.6% women had adequate knowledge, in Birgunj, Nepal where 45.9% antenatal mother had adequate knowledge and in Maharashtra where only 26.2% of women had adequate knowledge.<sup>12,13,15,20</sup> This difference may be because of differences in time gap, study setting, nature of respondents, socio-cultural, educational and economic status, and health care system of institute. In the present study regarding knowledge on individual statement of mode of delivery, women received highest percentage of correct response on CS needs longer hospital stay (97.9%), CS mothers need more care (95.1%), recovery period is longer in CS (82.6%), CS is mandatory for breech presentation (82.3%), anesthesia risk is more in CS (79.9%),

VD has more damage to the urinary genital organs (77.3%), postpartum infection is more frequent in CS (72.1%), and CS is mandatory after a CS (69.5%) while study in India signifies that women received highest percentage of correct response on CS is associated with complications (89%), infection risk (89%) and maternal complications (88%) are greater in CS, prolonged bed rest required in CS (87%), and study in Baghdad indicates that women received highest percentage of correct responses on CS is mandatory in breech presentation (87.7%), maternal morbidity is more in CS (70.3%), babies born by CS are more intelligent than by VD (58.7%) and CS is mandatory after a CS (50.7%).<sup>1,5</sup> The study in the United Arab Emirates indicate that more than three-quarters (76.1%) perceived that CS is less painful than vaginal delivery, 83.2%, 81.2%, and 83.9% expected that bone fracture is impossible in CS delivery, respiratory disorders are less likely, and maternal hemorrhage is less likely to happen in CS compared to vaginal delivery, respectively. However, 62.4% of pregnant women were knowledgeable that greater maternal complications are associated with CS than vaginal delivery. More than half (59.2%) of the pregnant women were aware that CS delivery is reasonable in breech presentation. The above findings showed that the women share similar opinions on knowledge of individual statements of the mode of delivery but the proportion of those are not match even though they are from different countries with different nature, socio-cultural, educational, and economic status.<sup>15</sup>

Almost all women (93%) had a positive attitude toward the mode of delivery. A higher proportion of women (97.9%) had a positive attitude toward VD. This finding concurs with studies in India (90%), Punjab (89%), Nepal (93.4%) and Iran (96.5%).<sup>1,7,12,21</sup> The above results explain that most women had a positive attitude toward VD however they are from different countries with different natures and socio-cultural beliefs. But study conducted in Birjunj, Nepal where a lower proportion of antenatal mothers (43.5%) had a positive attitude than women in the present study (97.9%) toward VD. This might be due to the nature of the population, study place, socio-culture beliefs, study time, etc.<sup>20</sup> The overall mean attitude score of the present study toward VD (75.0±12.5) and CS (58.4±14.1) was higher than Hydrabad (21.99±3.126 VD, 8.78±4.47 CS), Iran (25.0±5.2 VD, 15.3±4.8 CS), and Birgunj, Nepal (35.0118±1.985 VD, 21.9765±3.203 CS).<sup>18,21</sup> Owing to the variation in study methodology, timing, nature of samples, and socio-culture differences, findings might have differed.

In the current study, more than half of women were agreed with statements of VD that VD is a natural and acceptable mode of delivery, women can able to see and feel the baby immediately, mother regains health status earlier, creates more affectionate mother-baby relations, it is more pleasant in terms of outcome and quick recovery, the mother feels empowered emotionally, and mother can contact with baby more frequently and easily while less

than half of them were agreed with statements of CS that CS is preferable in scheduling a particular birth date and time, woman delivers by CS miss an opportunity of the process of VD, woman's recovery is longer in CS and CS leaves a large scar. This finding was similar to the study done in India, Baghdad, Punjab, Hyderabad, and Iran.<sup>1,5,7,18,21</sup>

In this study, the knowledge was significantly affected by occupation (p-value 0.022) and annual income (p-value 0.006). The finding of the study in Nepal corresponds with this study in terms of family income (p-value < 0.001).<sup>12</sup> This result also concurs with a previous study in Zahedan, Iran where knowledge was significantly influenced by occupation (p-value < 0.05), in Iran, showed that knowledge was significantly affected by job (p-value < 0.03) and family income (p-value < 0.001) and study in Birgunj, Nepal where knowledge was significantly influenced by family income (p-value 0.020).<sup>20,22,23</sup>

In the present study, the women's preference for mode of delivery was significantly influenced by age (p-value 0.013), educational status (p-value 0.012), occupation (p-value 0.048), and annual income (p-value 0.010). The preference of a mode of delivery was also significantly influenced by obstetric variables; gravida (p-value 0.009), previous mode of delivery (p-value 0.001), planning a number of children (p-value 0.044). This study is agreed with a study done in the United Arab Emirates where preference for mode of delivery was significantly influenced by age (p-value < 0.001), occupation (p-value 0.004), gravida (p-value 0.001), and previous mode of delivery (p-value < 0.001).<sup>15</sup>

In this study, attitude toward CS was significantly affected by age (p-value < 0.001) and type of family (p-value < 0.001) but the attitude toward VD was not influenced by the socio-demographic variables (p-value > 0.05). The finding of this study is consistent with a study in Nepal in terms of the association between age and attitude toward CS (p-value 0.004).<sup>12</sup>

There was a correlation of knowledge on the mode of delivery with overall attitude score, attitude toward VD, and CS. There was a statistically significant association between knowledge and attitude toward CS and VD (p-value < 0.001). This finding is consistent with a study done in Iran (p-value < 0.001).<sup>21</sup> The relationship of knowledge and attitude toward CS in Baghdad (p-value 0.028), in Birgunj, Nepal (p-value 0.047), and Nepal (p-value 0.01) is consistent with this study.<sup>5,12,20</sup> But the relationship of knowledge and attitude toward VD in Baghdad (p-value 0.697) in Birgunj, Nepal (p-value 0.921) and in Nepal (p-value 0.88) is not consistent with this study.<sup>5,12,20</sup>

The study was hospital-based and conducted in only one tertiary level hospital. There was involvement of only pregnant women of different categories like primi, second and third gravida as a participant of this study.

## CONCLUSION

This study concluded that most of the women had adequate knowledge regarding the mode of delivery. The women had a higher positive attitude toward VD than CS. There was a relationship between knowledge and attitude of CS and VD. Knowledge regarding the mode of delivery was dependent on occupation and annual income. The preference of a mode of delivery is related to age, educational status, occupation, annual income, gravida, previous mode of delivery, and planning a number of children. The attitude toward CS was related to age and type of family.

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# Mixed Method Study on Compassion Satisfaction and Compassion Fatigue among Oncology Nurses of Cancer Hospitals in Bhaktapur

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## ABSTRACT

### Background

Repeated exposure to patient's traumatic experiences such as suffering, end-of-life care and death, nurses working in cancer hospitals may experience in compassion fatigue that can impact on their ability to carry out their role. Burnout and secondary trauma stress are two elements of compassion fatigue. Without support and intervention there may be degradation in quality care and high turnover of nurses.

### Objective

To assess the level of compassion satisfaction and compassion fatigue among oncology nurses of cancer hospitals in Bhaktapur.

### Method

A mixed method (Quan-qual) study was conducted. Descriptive study using questionnaires and in-depth interviews were done. Census (71) method for quantitative and 10% of collected sample were used for qualitative study. Data were analysed descriptively and thematically.

### Result

In the study, 60.6% of nurses were found to have high level compassion satisfaction whereas 69% of nurses experienced low level burnout. Regarding secondary trauma stress, 1.4% and 71.8% of nurses experienced high and average level of secondary trauma stress respectively. There were both positive and negative influences of working with cancer patients.

### Conclusion

Higher compassion satisfaction was found among nurses from Day Care Unit and who has more than nine years of experience as an oncology nurse. Burnout was seen higher among operation theatre nurses and higher level of secondary trauma stress was found among those working in haematology and chemotherapy unit. The nurses included feelings of satisfaction on spirit of team while the fatigue experiences were associated with expectation gap and challenges in exposure to patient's death.

## KEY WORDS

*Burnout, Compassion fatigue, Compassion satisfaction, Oncology nurses, Secondary trauma stress*

## INTRODUCTION

Compassion, a feeling of empathy for the distress of another, commonly gives rise to an active desire to alleviate another's suffering and is considered a cornerstone of the healthcare professions.<sup>1</sup> Caring for patients allows nurses and other healthcare professionals to feel a sense of well-being and fulfillment that energizes them and leads to retaining a high morale, thriving in the workplace, and the enthusiasm to continually meet patients' needs.<sup>2</sup> As evidenced by previous researches, oncology nurses are at high risk for compassion fatigue because of constant care of patients who are suffering, fighting for life and going through pain. Burnout and secondary trauma stress are its two elements. There have been plenty of researches in American and European countries but limited studies in context of Asia and especially in Nepal creates a need for exploring occupation related stress such as compassion fatigue among nurses who are the backbone of any health institutions. Compassion fatigue is preventable, but due to knowledge gap many oncology nurses have become victims resulting in decreased quality of care, high turnovers and shortage of oncology nurses. So this study is designed to assess the level of compassion fatigue as well the level of satisfaction while caring the cancer patients.

## METHODS

An Embedded Mixed method study was conducted in Bhaktapur Cancer Hospital and Kathmandu Cancer Center, Tathali, Bhaktapur. For quantitative, cross-sectional descriptive and for qualitative phenomenological study were done. In sampling technique, census for quantitative and 10% of collected sample were used for qualitative. Nurses who have worked in various units of cancer hospital for at least one year were included. Structured questionnaire was used for data collection. It consisted of 2 parts: I Socio-demographic and work related data (age, education level, marital status, years of clinical nursing, years of oncology nursing, work unit, counselling training) of nurses. II: Professional Quality of Life Scale Version 5 developed by B. Hudnall Stamm consisting of 3 subscales (compassion satisfaction, burnout and secondary trauma stress) was used.<sup>3</sup> Compassion fatigue has been measured by burnout and secondary trauma stress. It is a likert-scale ranging from 1 to 5. Each subscale has 10 items with the total score of 50. Test items 1, 4, 15, 17, 29 are reverse coded. The words help and helper was replaced by care and oncology nurse respectively as per the feasibility provided by the author. Score of 22 or less denotes low levels, a score of 23-41 indicates average levels, and 42 and above suggests high levels of compassion satisfaction (CS), burnout (BO) and secondary trauma stress (STS). The instrument for data collection was pretested to 10% of the total sample size i.e. 7 among the oncology nurses working in Bir Hospital. After getting ethical approval from NHRC, self-administered questionnaire was provided to the

respondents with written consent for quantitative study and then after for qualitative study through convenience sampling technique face to face key informant in-depth interview with guided questionnaire was used until data got saturated and audio recorded with the permission.

Data was analysed in SPSS version 21 for descriptive statistics (frequency percentage, mean and standard deviation) while thematic analysis was done for qualitative study was from July 2019 to October 2020.<sup>4</sup>

**Table 1. Socio-demographic and work-related information of the respondents (n=71)**

Characteristics	Frequency (f)	Percentage (%)
<b>Age (in completed years)</b>		
20 to 24	26	36.6
25 to 29	36	50.7
≥ 30	9	12.7
<b>Marital status</b>		
Married	32	45.1
Unmarried	39	54.9
<b>Education Level</b>		
Certificate	36	50.7
Bachelor	35	49.3
<b>Work Unit</b>		
Palliative	8	11.3
Haematological	10	14.1
Surgical	15	21.1
Day care	4	5.6
Emergency	10	14.1
Chemotherapy	12	16.9
Operation theatre	7	9.9
Radiotherapy	5	7.0
<b>Years of Clinical Nursing Experience</b>		
< 5 years	30	42.3
5 to 9 years	32	45.1
> 9 years	9	12.6
<b>Years of Oncology Nursing Experience</b>		
< 5 years	49	69.1
5 to 9 years	17	23.9
> 9 years	5	7.0
<b>Received training on counselling cancer patients</b>		
No	59	83.1
Yes	12	16.9

## RESULTS

In socio-demographic and work-related information (Table 1), more than half of respondents (50.7%) fell under the age group 25 to 29. Likewise, the respondents who had undergone bachelor level of education were almost equal to

those who passed the certificate level i.e. 49.3% and 50.7% respectively. In marital status, 54.9% were unmarried. The highest in number (21.1%) were working in surgical unit. Regarding the years of clinical nursing experience, 42.3% of respondents had less than five years of experience. The percentage of respondents with less than five years of oncology nursing experience was 69.1% while 16.9% of the total respondents had received training on counselling cancer patients (Table 1).

In the present study, more than half of the respondents (60.6%) presented with high level of compassion satisfaction, 69% of the total respondents depicted low level of burnout whereas 31% reported average level of burnout. Nearly three-fourth (71.8%) of the respondents

**Table 2.** Distribution of respondents according to the level of Compassion satisfaction, Burnout and Secondary trauma stress

Variables	Level					
	Low		Average		High	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Compassion Satisfaction (n=71)			28	39.4	43	60.6
Burnout (n=71)	49	69	22	31		
Secondary Trauma Stress (n=71)	19	26.8	51	71.8	1	1.4

**Table 3.** Distribution of level of compassion satisfaction, burnout and secondary trauma stress based on sociodemographic and work-related characteristics

Socio Demographic and Work-related Variables	Compassion Satisfaction n=71				Burnout n=71		Secondary Trauma Stress n=71			
	Average f (%)	High f (%)	Mean ± SD	Low f (%)	Average f (%)	Mean ± SD	Low f (%)	Average f (%)	High f (%)	Mean ± SD
Age (in completed years)										
20 to 24	8(30.8)	18(69.2)	42.7 ± 4.3	17(65.4)	9(34.6)	20.2 ± 4.3	8(30.8)	19(69.2)	0(0.0)	24.1 ± 4.8
25 to 29	18(50)	18(50)	41.7 ± 3.4	24(66.7)	12(33.3)	21.4 ± 4.9	9(25)	26(72.2)	1(2.8)	26.1 ± 5.7
≥ 30	2(22.2)	7(77.8)	43.8 ± 3.4	8(88.9)	1(11.1)	18 ± 2.5	2(22.2)	7(77.8)	0(0.0)	24.3 ± 7
Marital status										
Married	13(40.6)	19(59.4)	42.5 ± 3.4	23(71.9)	9(28.1)	19.9 ± 4.3	6(18.8)	26(81.2)	0(0.0)	26.1 ± 5.4
Unmarried	15(38.5)	24(61.5)	42.3 ± 4.2	26(66.7)	13(33.3)	21.2 ± 4.8	13(33.3)	25(64.1)	1(2.6)	26.1 ± 5.4
Level of Education										
Certificate Level	14(38.9)	22(61.1)	42.4 ± 4.2	24(66.7)	12(33.3)	20.2 ± 4.4	10(27.8)	26(72.2)	0(0.0)	24.8 ± 5.1
Bachelor Level	14(40.0)	21(60.0)	42.4 ± 3.5	25(71.4)	10(28.6)	21 ± 4.7	9(25.7)	25(71.4)	1(2.9)	25.7 ± 6
Work Unit										
Palliative	3(37.5)	5(62.5)	41.1 ± 5.9	5(62.5)	3(37.5)	20.3 ± 5.8	3(37.5)	5(62.5)	0(0.0)	25.5 ± 4.6
Haematological	3(30.0)	7(70.0)	42.9 ± 2.6	6(60.0)	4(40.0)	22 ± 4.6	1(10.0)	9(90.0)	0(0.0)	27.6 ± 5.5
Surgical	5(33.3)	10(66.7)	42.9 ± 2.8	13(86.7)	2(13.3)	18.1 ± 5.2	7(46.7)	7(46.7)	1(6.7)	21.9 ± 7.7
Day Care	0(0.00)	4(100.0)	45.5 ± 1.3	4(100.0)	0	16.3 ± 2.2	1(25.0)	3(75.0)	0(0.0)	25.3 ± 2.2
Emergency	3(30.0)	7(70.0)	44.4 ± 3.7	7(70.0)	3(30.0)	20.2 ± 3.2	3(30.0)	7(70.0)	0(0.0)	24.7 ± 4
Chemotherapy	6(50.0)	6(50.0)	41.6 ± 4.4	7(58.3)	5(41.7)	22.7 ± 3.6	1(8.3)	11(91.7)	0(0.0)	27.7 ± 4.8
Operation Theatre	5(71.4)	2(28.6)	39.7 ± 1.6	3(42.9)	4(57.1)	24.3 ± 2.7	2(28.6)	5(71.4)	0(0.0)	26.4 ± 4.2
Radiotherapy	3(60.0)	2(40.0)	41.2 ± 4.3	4(80.0)	1(20.0)	20 ± 2.6	1(20.0)	4(80.0)	0(0.0)	25 ± 4.4
Years of Clinical Nursing Experience										
< 5 years	13(43.3)	17(56.7)	42 ± 3.8	19(63.3)	11(36.7)	21.1 ± 4.5	9(30)	20(66.7)	1(3.3)	24.9 ± 5.9
5 to 9 years	13(40.6)	19(59.4)	42.2 ± 3.7	24(75)	8(25)	20.2 ± 4.7	10(31.2)	22(68.8)	0(0.0)	24.8 ± 5.4
> 9 years	2(22.2)	7(77.8)	44.3 ± 3.4	6(66.7)	3(33.3)	20.4 ± 4.5	0(0.0)	9(100)	0(0.0)	28.7 ± 4.1
Years of Oncology Nursing Experience										
< 5 years	21(42.9)	28(57.1)	42 ± 4	33(67.3)	16(32.7)	20.7 ± 4.7	14(28.6)	34(69.4)	1(2.0)	25 ± 5.6
5 to 9 years	6(35.3)	11(64.7)	43 ± 3	12(70.6)	5(29.4)	20.5 ± 4.4	5(29.4)	12(70.6)	0(0.0)	25.5 ± 5.7
> 9 years	1(20.0)	4(80.0)	44.8 ± 4	4(80.0)	1(20.0)	19.8 ± 5	0(0.0)	5(100.0)	0(0.0)	27.4 ± 4.2
Received training on counselling cancer patients										
No	23(39.0)	36(61.0)	42.2 ± 3.8	39(66.1)	20(33.9)	21.2 ± 4.4	14(23.7)	44(74.6)	1(1.7)	25.5 ± 5.5
Yes	5(41.7)	7(58.3)	43.5 ± 3.8	10(83.3)	2(16.7)	17.9 ± 4.4	5(41.7)	7(58.3)	0(0.0)	24.3 ± 5.9

exhibited average level of secondary trauma stress (Table 2).

Table 3 shows, the respondents who were 30 years and older were 77.8% to experience high level of compassion satisfaction in comparison to other age groups; low level of burnout (88.9%) and average level of secondary trauma stress (77.8%). Higher percentage of unmarried (61.5%) had higher level of compassion of satisfaction, 71.9% married respondents exhibited low level of burnout and 81% experienced average level of secondary trauma stress whereas 64.1% of the unmarried experienced average level of secondary trauma stress. Similarly, the percentage of certificate level nurses that showed high level of compassion satisfaction was only slightly higher than those with bachelor level of education i.e. 61.1% and 60% respectively, 71.4% of bachelor level of education showed low level of burnout as well as average level of secondary trauma stress. Regarding work unit 100% of nurses working in Day Care unit experienced high level of compassion satisfaction, 57.1% of nurses working in Operation Theatre were found to be experiencing average level of burnout and majority of respondents working in haematology (90%) and chemotherapy unit (91.7%) experienced average level of secondary trauma stress followed by radiotherapy unit (80%). Those with more years of experience of oncology nursing were found to have high level of compassion satisfaction (80%), low level of burnout (80%) and average level of secondary trauma stress (100%). The higher percentage (80%) of respondents showed high level of compassion satisfaction, (83.3%) low level of burnout and, more than half (58.3%) experienced average level of secondary trauma stress disregarding the counselling training (Table 3).

### Themes emerged from open-ended questions

Majority statements were extracted from the descriptions and meaning were formulated from the significant statements. The formulated meaning was coded and then organized into categories and themes.

### Compassion Satisfaction

#### 1. Spirit of Team

*"It's quite easy and convenient to approach doctors. Usually they are talking good things about patients. Colleagues are of course nice, and it is impossible to work in ward without them. There is teamwork." (N7) (Smiling)*

2. *"Everyone supports me. I am a working student and I use to have exam timely. During such situation, other staffs replace or take over my duty. Their kindness and helpful nature make me feel good and it is adjustable." (N3)*

3. *"My colleagues are helpful in work and we share our experiences which motivates us while working together..... other.....we usually get leave in ward whenever we need and want. These kinds of facilities also motivate us to work ahhhh (long pause) something like this." (N5)*

#### 4. Interest to work

*"My home is nearby hospital. During my first year while I was still student, I used to do practical here and I wished I could work here. Seeing cancer patient's condition and knowing cancer, it is taking care of critical ill patient, my interest got developed to serve them as a nurse." (N2)*

*"This is the profession that I have chosen by myself. Therefore, I think my own interest in it is the main motivational factor for me." (N3)*

#### 5. Enhancement of knowledge

*"I am enjoying. I am satisfied with my job (laughing). My skill has been developed. There were many queries related to oncology and now I can identify little bit. Because of experience, it is being helpful to B.N students to gain knowledge about Oncology. Another thing is after coming here I got to know multi types of Cancer. We used to learn only about Lung Cancer, Cervix. I even got chance to know about consequences and complications of multi types of cancer. I have not seen prognosis of it that much, probably due to diagnose in delay stage or arriving in delay stage. I got a chance to learn different conditions of cancer and its management, especially palliative care and pain assessment during these past years." (N3)*

*In the beginning I was in Palliative. I did my 1<sup>st</sup> year in Palliative. There I learned about pain management and then I was sent to emergency (laughing). In emergency we give immediate treatment to the patient, during emergency condition patients usually complain about pain and during such situation we have an idea which medicine should be given. We do pain management. During SOB, Vomiting and if doctor is busy in ICU, we can manage and handle the situation. (N4)*

#### 6. Therapeutic Relationship

7. *"The behaviour and the treatment that a patients and visitors show to us before leaving hospital really motivate and inspire me. During their re-visit, they used to ask about me which makes me feel good. Some patient really searches me for opening vein since they feel that I can do it immediately. All these factors motivate me. The treatment and the behaviours of patients and visitors motivated us." (N4)*

#### 8. Happiness on patients' improvement

*"Seeing gradual improvement in patient's health condition, it makes us happy. They are also given antiemetic during their treatment. At the end before they were discharged, at least they will be able to take liquid foods. Seeing all these things I feel happy and satisfied." (N2)*

*"Usually when patients arrived here, they were critically ill, in excessive pain, foul smell and disparate and psychological tortured but during their discharge period we can see smile on their face and comfort due to improvement in their condition. Seeing all these things, it makes me happy." (N3)*



## Compassion Fatigue

### 1. Ethical Dilemma

*"Emergency ward and supportive ward are in same place here. Whenever we are busy in emergency, visitors from supportive call for help or ask us to visit them quickly. Because of this, sometimes we will not be able to give proper time in both wards. Patient usually in emergency wards are jumping and shaking due to pain and in such conditions, it will be impossible for us to look after patients from supportive ward. Wish we can avoid such situation (laughing). We wish we can focus only in one ward while working." (N4)*

### 2. Care Driven Factors

**Patient's unreasonable expectations:** *"Because of long term treatment from different hospitals with fully equipped and advance technology in abroad, some patients are already aware of the process of treatment and are over educated, over conscious and sensitive. Sometime their expectations would not match with our treatment process and system. Their numbers of questions and doubts would create stressful environment. It is also difficult to handle patient party since they are more conscious." (N1)*

*"Whatever counselling we used to give, only 20% out of 100% used to accept that their patients are going to expire. Rest of 80% would not accept it even though they know that their patients are going to pass away. They used to be expecting still." (N6)*

**Skeptical family members:** *"Stress given by patient, talking repeatedly about unnecessary issues, clarifying same things repetitively to number of patient's relatives, stress us while doing work." (N5)*

*"Serious patients are kept in Medical Intensive Care Unit (MICU) and lots of them are not ready to accept and cope with the situation. Some party visit here being drunk and threaten us and bring gang saying that they will take action against us. In such situation, we locked ourselves inside nurse room. We are not that much harmed physically but yah mentally we are." (N6)*

**3. Issues with Work-Life Balance:** *"As a human being seeing their pain sometime, we feel sad too. Sometimes we fail through medication counselling for having repeatedly palliative case. During that time, we considered as failure and feel bad too. Headaches, stressful, mood off are common symptoms after failing to satisfy our patients. Those painful expressions of patients usually vivid in our mind even after going back to home. Dealing with such painful memories is not forgettable sometime. It vivid in our mind and cause headache." (N1)*

### 4. Inadequate Administrative Support

*"Our counter is not opened for 24 hours. In such case if one patient is expired and at the same time there is another patient in emergency, instead of making arrangement*

*for that emergency patient, I need to make calculation of patient who is expired and party going home. Financial activities like adding fund or money in deposit and going here and there, which is not my work/duty. There is financial department and admission department which need to handle all these things. Involving in these things is just a burden for me. It is not nurse's duty/responsibility to handle money matters. This is just absolute work burden." (N3)*

*"If hospital management is well managed then hospital will be good. Even visitor has similar complaints. Because of inadequate management, we are regarded as bad in visitors' eyes while dealing with it. We are trying our best to convince visitors but because of mismanaged by management, our image is being taken negatively." (N7)*

### 5. Exposure to Patients Death/ Painful Situations

*"I was emotionally attached with one of my patients, when she was expired, I was in NICU and I received phone call and I went to see her. During that time, I really felt crying. That day I was just thinking about her all the time and could not concentrate in other things, even it hampered my home activities." (Getting emotional) (N4)*

*"Seeing the condition (critical condition) of patients from supportive ward make us feel bad and some even expire make the situation worst. Wish we don't have to see such situation." (N7)*

*"Patient whose treatment processing period is above 1 month then it impacts more. "Will I survive?" question mostly pressurize us emotionally." (N1)*

*"During symptomatic management process when we fail to manage patient's symptom, when patients get frustration with our questions related to their diseases and when we failed to do anything regardless of numbers of tries in such conditions we feel frustration." (N2)*

## DISCUSSION

### Mean score of compassion satisfaction, burnout and secondary trauma stress

The result of the study indicates that the mean score of compassion satisfaction is 42.4 which is similar to the findings of research done in Pennsylvania (41.2) and USA (40.3) but is higher than result of the study conducted in New Zealand (35.3) and China (31.8).<sup>5-8</sup>

In the present study, mean burnout score is 20.6 which is similar to study done in China (21.1), Philadelphia (19.5) and USA (19.2) but slightly lower than of New Zealand (23.5) and Pennsylvania (23.3).<sup>5,7-9</sup> Quantitative finding of the present study is also complemented through the qualitative study i.e. majority of the respondents had verbalized better teamwork and supportive working environment. These findings are also supported by the study of Dasan et al.<sup>10</sup>

Similarly, the mean secondary trauma stress score is 25.3 which is similar with the study done in New Zealand (23.4), China (21.3) but significantly higher than the one done in USA (12.3).<sup>5,7,8</sup> This result could be the oncology nurses in Nepal are deprived of trainings on psychological adjustment to deal with traumatic experiences of patients and to alleviate death-related grief.

#### **Level of compassion satisfaction, burnout and secondary trauma stress**

More than half (60.6%) of the oncology nurses in current study scored high for compassion satisfaction which is similar to the study conducted among the oncology nurses of Canada and USA.<sup>11</sup> They mentioned that they were satisfied with the opportunities of learning and the support provided by their colleagues and doctors. However, this finding is higher than that of researches done in Seoul, Korea (28.1%) and Busan, Korea (25.7%).<sup>12</sup>

Regarding level of burnout, 69% of respondents are classified to have exhibited low level of burnout. Results of level of burnout obtained in study conducted in Portugal and the study in Korea show slightly more than half of the nurses to have experienced average level of burnout in each country which is higher than the findings of our study.<sup>12,13</sup>

Nearly three-fourth (71.8%) of the respondents have exhibited average level of secondary trauma stress which is significantly higher than the result obtained in the study done in USA (47%), Canada (48%) and South Carolina, USA (41.7%).<sup>11,14</sup> Qualitative data suggests, the common factors like repetitive exposure to the patient's dead and painful situations, Unappreciative behaviour of management, inadequate administrative support in dealing with various aggressive behaviour of patients' parties were some examples that could cause secondary traumatic stress in respondents.

#### **Distribution of level of compassion satisfaction, burnout and secondary trauma stress based on socio-demographic and work-related characteristics**

In the present study, with the increase in years of clinical nursing experience, mean compassion satisfaction score has increased as in the study done in Seoul, Korea and China. Likewise, the mean compassion satisfaction score has increased with the increase in experience of oncology nursing as in the result of study conducted in Seoul, Korea, however the findings of research conducted in China suggest that with increase in years of oncology nursing, mean compassion satisfaction decreases.<sup>5,12</sup> In the present qualitative study, interviewees revealed that major cause behind compassion satisfaction is enthusiasm arisen by cooperation and support among co-workers. In addition to this emotional bond of trust, caring and respect with patients, happiness on improvement of patients' health condition, desire for related clinical knowledge and interest on own area of working made them satisfied on their profession.

More than three-fifth of respondents with bachelor as well as certificate level of education depicted low level of burnout which is lower than the result obtained in a research conducted among nurses of Canada and USA, where half of them experienced low level of burnout and the remaining half experienced average level burnout.<sup>8</sup> Likewise, mean score of those who did not receive counselling training is slightly higher (17.9) than those who received training (21.2) and this is supported by the study done in China in which those who received training scored 20.4 whereas the rest scored 22.1.<sup>5</sup>

In this study, mean secondary trauma stress of those with bachelor level and certificate level of education is 25.7 and 24.8 respectively which is higher than the result shown in study done in China.<sup>5</sup> Likewise, respondents working in haematology unit scored 27.6 while those working in chemotherapy unit scored 27.7 which are the highest score among all the work units and is similar to the result obtained in Seoul, Korea.<sup>12</sup> Study also showed with the increase in clinical nursing experience, mean secondary trauma stress has decreased slightly as in result obtained in Seoul Korea.<sup>12</sup> While with the increase in years of oncology nursing experience, secondary trauma stress mean score increased unlike the result shown in China.<sup>5</sup> The increase in secondary trauma stress could be possibly because they had been exposed to more of their patients' traumatic experiences and such persistent exposure might impose heavy emotional burden. Failure with number of tries and exposure with death and pain also increases their stress level. Nurses often described experiencing an imbalance in their work-life balance which impact in the stress level and it is supported by study Mullen.<sup>15</sup>

## **CONCLUSION**

More than half of the respondents showed high level of compassion satisfaction. Highest mean score of compassion satisfaction, burnout and secondary trauma stress were among those respondents working in day care, operation theatre and chemotherapy unit, respectively. With the increase in years of clinical experience also depicted highest secondary trauma stress mean score. Compassion satisfaction experienced by nurses included feelings of satisfaction in spirit of team, interest to work, enhancement of knowledge, therapeutic relationship and obtaining happiness from helping patients and their improvement. Compassion fatigue were the result of issues with work-life balance, inadequate administrative support, exposure to patient's death, expectation gap and care driven factors.

#### **Recommendations**

It is necessary to provide frequent training, recreational activities, adequate administrative support and counselling on dealing with traumatic experiences for the psychological adjustment and awareness regarding positive as well as negative influence of working with cancer patients among oncology nurses.

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# Relationship between Perceived Social Support and Fear of Childbirth among Pregnant Women in Nepal

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## ABSTRACT

### Background

The global prevalence of fear of childbirth is 14% whereas in Asian studies it was 25%. Fear of childbirth is an important issue during pregnancy and social factors have an effective role in its creation.

### Objective

To assess the relationship between perceived social support and fear of childbirth among pregnant women visiting antenatal clinic of Dhulikhel Hospital.

### Method

Analytical cross-sectional study was conducted in Dhulikhel Hospital, Kavre, Nepal. A total of 322 respondents were selected using systematic random sampling. Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess perceived social support and Wijma Delivery Expectancy/Experience Questionnaire-A (WDEQ-A) was used to identify the prevalence of fear of childbirth. Descriptive and inferential statistics were used in statistical analysis.

### Result

The mean score of MSPSS and WDEQ-A were 73.05 and 56.98 respectively. The prevalence of fear of childbirth was 16.9% overall, with 12.8% as severe fear (score  $\geq 85$ ) and 4.1% as clinical fear (score  $\geq 100$ ). Multivariate analysis revealed that perceived social support was protective factor for fear of childbirth ( $\beta = -0.57$ , 95% CI:  $-1.02$  to  $-0.11$ ;  $p = 0.01$ ). Fear of childbirth had significant association with complications during current pregnancy and complications during last childbirth.

### Conclusion

This study concluded that there is a negative significant association between perceived social support and fear of childbirth. Therefore, health care professionals should not only focus on medical intervention but also need to focus on social aspects during pregnancy to reduce its consequences.

## KEY WORDS

*Fear of childbirth, MSPSS, Perceived social support, WDEQ-A*

## INTRODUCTION

Childbirth as a biological process is represented by various physiological factors, some of which might be perceived as unknowable or uncontrollable by pregnant women. For some, this situation is psychologically complicated and might result in increased feelings of insecurity, anxiety, and intense childbirth-related fear.<sup>1</sup> Women's fears that are associated with pregnancy and childbirth can be explained by different factors- pain, obstetric injury, and behavior of healthcare staff.<sup>2</sup> If fear becomes paralyzing and terrifying, it can get physically and emotionally disabling and give rise to specific pathologies such as "tokophobia".<sup>3</sup> Fear may overshadow the entire pregnancy; complicate labor, lead to difficulties in mother-infant relationship, and postpartum depression.<sup>4</sup>

According to the conceptual framework for action on social determinants of health published by World Health Organization (WHO), psychological stressors, anxiety, depression, and social support are among the social determinants of health.<sup>5</sup> During pregnancy, women not only experience physiologic and hormonal changes but also they are psychologically surrounded by the concept that they may not be able to handle the upcoming new circumstances. Therefore, they are in great need of social support to be enabled to overcome the circumstances.<sup>6</sup> The probability of mental disorders and adverse outcomes of pregnancy may increase in mothers with poor social support.<sup>7</sup>

This study aimed to assess the relationship between perceived social support and FOC among pregnant women in the hospital setting which will provide baseline data for estimating the prevalence of FOC and also helps in visualizing the importance of social support during pregnancy.

## METHODS

An analytical cross sectional study was undertaken at Dhulikhel Hospital, Kathmandu University Hospital (DH, KUH) among 322 pregnant women from 4<sup>th</sup> November 2019 to 16<sup>th</sup> December 2019.

Sample size was calculated by applying the formula,  $n = Z\alpha^2 PQ/d^2$ , i.e  $n = (1.96^2 * 0.24 * 0.76)/(0.05)^2$ , where p was 24% based on previous Australian study, d= maximum tolerable error.<sup>8</sup> Then adding 15% attrition rate, final sample size was 322. Systematic random sampling was used for the selection of woman. Total pregnant women of 3rd trimester visiting Antenatal OPD of Dhulikhel Hospital in the past consecutive 3 months were 1,929 in the year of 2019. Hence, pregnant women visiting the OPD in six weeks were 964. After calculation of Kth item, sampling interval was found to be three.

Women of gestational age of  $\geq 28$  weeks, able to read and write Nepali Language, and those who understand the tool were included in study whereas women undergoing

elective cesarean section and minors (< 18 years) were excluded from study.

The researcher self-introduced to participants and explained the purposes of conducting the study. After voluntary written and verbal consent, participants were taken to a separate area near antenatal OPD which was free from the crowd in order to maintain privacy. The method of data collection was self-reported. Secondary data (obstetric history) was obtained from the participant's antenatal cards. Pretesting was conducted among 10% of total sample for the reliability of the instrument. Respondents of pretesting were excluded from the main study. Three different instruments were used for data collection. First section consisted socio-demographic information including obstetric characteristics. Second section consisted Multidimensional Scale of Perceived Social Support (MSPSS) which was used for the measurement of perceived social support.<sup>9</sup> The MSPSS is a 12-items tool that evaluates perceived social support in the three dimensions of the family, friends and specific individual (husband or close one). This tool is scored based on seven-point Likert scale where the minimum and maximum obtained scores are 12 and 84 respectively. Higher scores represent higher social support and vice versa. Third section consisted Wijma Delivery Expectancy/Experience Questionnaire-A (W-DEQ A) used for measurement of FOC.<sup>10</sup> W-DEQ A contains 33 items that are rated on a six-point Likert which ranges from 0 to 165. FOC is defined as W-DEQ A sum score  $\geq 85$  as severe and W-DEQ  $\geq 100$  as clinical FOC. Permission was obtained from the tool developer via email. For the validation of tool Linguistic accuracy and content validity was performed whereas the Cronbach's alpha was used to calculate the reliability. The reliability of the MSPSS tool was found to be 0.9 and W-DEQ A was 0.7.

Ethical approval was obtained from the Institution Review Committee (IRC), KUSMS, and Post Graduate (PG) Committee, Kathmandu University School of Medical Sciences (KUSMS) respectively. Permission was received from the head of the department of obstetrics and gynecology ward. Researcher herself entered the data in statistical Package for Social Science (SPSS version 23.0). Bivariate and multivariate linear regression analysis was used to determine the association between the variables.

## RESULTS

Though the sample size was 322, two of them were not able to complete the questionnaire. So, the data were obtained from 320 samples.

The mean and SD of MSPSS was  $73.05 \pm 13.40$ ; the scores of support by a significant other (Husband or close one), family and friends were  $26.26 \pm 3.22$ ,  $24.84 \pm 5.15$ , and  $21.95 \pm 7.66$  respectively. Among the participants, 12.8% of respondents had a severe FOC whereas 4.1% of them had clinical FOC. The mean W-DEQ A score was  $56.98 \pm 25.20$ .



**Table 1.** Description of socio-demographic characteristics of pregnant women (n=320)

Characteristics	Frequency (n)	Percentage (%)
<b>Completed age (years)</b>		
Mean and SD (25.53±3.96)		
<b>Current residence</b>		
Urban	224	70
Rural	96	30
<b>Level of education</b>		
Basic education	66	20.6
Secondary education	118	36.9
Higher education	136	42.5
<b>Marital status</b>		
Married	320	100
<b>Occupation</b>		
House maker	165	51.6
Service	78	24.4
Business	44	13.7
Agriculture	28	8.7
Other	5	1.6
<b>Family structure</b>		
Nuclear	42	13.1
Joint	267	83.4
Extended	11	3.4
<b>Economic status</b>		
High class	11	3.4
Medium	294	91.9
Low class	15	4.7
<b>Habit of drinking alcohol</b>		
No	306	95.6
Yes	14	4.4
<b>Habit of smoking</b>		
No	315	98.4
Yes	5	1.6
<b>Preferred mode of delivery</b>		
Natural childbirth	310	96.9
Cesarean section	10	3.1
<b>Planned pregnancy</b>		
Yes	240	75
No	80	25

Table 3 shows an association between perceived social support and fear of childbirth among pregnant women. There is statistically significant association between perceived social support and fear of childbirth in both multivariate and bivariate analysis.

Table 4 shows an association between Socio-demographic characteristics and fear of childbirth by bivariate and multivariate linear regression analysis. In bivariate analysis,

**Table 2.** Description of obstetric characteristics of pregnant women (n=320)

Characteristics	Frequency (n)	Percentage (%)
<b>Completed Gestational Age</b>		
Mean and SD (33.20±3.7)		
<b>Complications in current pregnancy</b>		
No	254	79.4
Yes	66	20.6
<b>Gravida</b>		
Primigravida	219	68.4
Multigravida	101	31.6
<b>History of spontaneous abortion (n=101)</b>		
No	83	82.2
Yes	18	17.8
<b>History of induced abortion (n=101)</b>		
No	85	84.2
Yes	16	15.8
<b>Parity</b>		
Nulliparous	233	72.8
Parous	87	27.2
<b>History of stillbirth (n=87)</b>		
No	85	97.7
Yes	2	2.3
<b>Complications during last childbirth (n=87)</b>		
No	76	87.4
Yes	11	12.6

**Table 3.** Association between Perceived Social Support and Fear of Childbirth of Pregnant Women (n=320)

Variable	Bivariate		Multivariate	
	Beta (95% CI)	p-value	Beta (95% CI)	p-value
Perceived social support	-0.6(-0.8-(-0.4))	<0.01*	-0.5(-0.9-(-0.1))	0.01*

°Confidence Interval, \*statistically significant difference for p-value < 0.05, all the Socio-demographic and obstetric variables were adjusted

there is statistically significant association between preferred mode of delivery, planned pregnancy, and FOC. In multivariate analysis, there was no association between Socio-demographic characteristics and FOC.

Table 5 shows an association between obstetric characteristics and fear of childbirth by bivariate and multivariate linear regression analysis. In bivariate analysis, there is statistically significant association between complications during the current pregnancy, complications during the last childbirth, and fear of childbirth. In multivariate analysis, there is statistically significant association between complications during current pregnancy, complications during last childbirth, and fear of childbirth.

**Table 4.** Association between fear of childbirth and socio-demographic characteristics of pregnant women (n=320)

Characteristics	Bivariate		Multivariate	
	Beta (95% CI)	p-value	Beta (95% CI)	p-value
Age	0.1(-0.5-0.8)	0.708	0.4(-1.8-1.0)	0.539
<b>Current residence</b>				
Rural	Ref		Ref	
Urban	3.9(-2.1-9.9)	0.206	-2.2(-14.6-10.2)	0.729
<b>Educational level</b>				
Basic education	Ref		Ref	
Secondary education	-1.1(-8.7-6.5)	0.776	3.0(-10.2-16.3)	0.652
Higher education	-0.7(-8.2-6.7)	0.843	-6.8(-21.6-7.9)	0.358
<b>Occupation</b>				
Housemaker	Ref		Ref	
Service	-3.3(-12.8-6.1)	0.487	-6.1(-25.1-12.7)	0.516
Business	-0.3(-7.2-6.5)	0.923	-13.9(-36.4-8.4)	0.217
Others	3.7(-4.7-12.2)	0.382	6.3(-8.1-20.8)	0.386
<b>Family structure</b>				
Nuclear	Ref		Ref	
Joint	1.9(-6.3-10.2)	0.635	-7.8(-21.3-6.3)	0.281
Extended	-4.9(-21.7-11.9)	0.568	-2.7(-54.6-9.2)	0.161
<b>Economic status</b>				
High class	Ref		Ref	
Medium	-1.0(16.3-14.2)	0.895	-51.3(-145.3-42.6)	0.279
Low class	4.9(14.8-24.6)	0.627	-78.1(-184.0-27.7)	0.145
<b>Habit of drinking alcohol</b>				
No	Ref		Ref	
Yes	5.1(-18.6-8.5)	0.463	-5.6(-31.3-20.1)	0.665
<b>Habit of smoking</b>				
No	Ref		Ref	
Yes	-4.4(-26.8-17.9)	0.696	7.9(-38.3-54.1)	0.734
<b>Preferred mode of delivery</b>				
Natural childbirth	Ref		Ref	
Cesarean section	25.3(9.5-41.0)	0.002*	14.9(-4.1-34.0)	0.124
<b>Planned pregnancy</b>				
Yes	Ref		Ref	
No	9.6(3.3-15.9)	0.003*	-1.8(-14.8-11.2)	0.786

<sup>c</sup>Confidence Interval, \*statistically significant difference for p-value <0.05, all the Socio-demographic and obstetric variables were adjusted in multivariate analysis

## DISCUSSION

The present study found that 42.5% of women have higher education however; amazingly it was found that more than 50% of Nepalese women were indulged in household

**Table 5.** Association between fear of childbirth and obstetric characteristics of pregnant women (n=320)

Characteristics	Bivariate		Multivariate	
	Beta (95% CI)	p-value	Beta (95% CI)	p-value
Completed gestational age	0.2(-0.5-0.9)	0.572	-0.7(-2.4-0.9)	0.379
<b>Complications in current pregnancy</b>				
No	Ref			
Yes	21.4(14.9-27.8)	<0.01*	Ref	
<b>Gravida</b>				
Primigravida	Ref		15.0(1.6-28.4)	0.029*
Multigravida	0.4(-5.6-6.3)	0.903	-	-
<b>Spontaneous abortion</b>				
No	Ref		Ref	
Yes	-6.2(-20.2-7.8)	0.385	-1.7(-19.1-15.6)	0.845
<b>Induced abortion</b>				
No	Ref		Ref	
Yes	0.3(-14.4-15.1)	0.967	-0.9(-22.8-20.9)	0.931
<b>Parity</b>				
Nulliparous	Ref			
Parous	1.3(-4.9-7.6)	0.675	-	-
<b>Stillbirth</b>				
No	Ref		Ref	
Yes	3.6(-35.1-42.3)	0.824	-20.1(-63-22.7)	0.351
<b>Complications during last childbirth</b>				
No	Ref		Ref	
Yes	35.8(20.2-51.5)	<0.01*	31.0(14.5-47.6)	<0.001*

<sup>c</sup>Confidence Interval, \*statistically significant difference for p-value < 0.05, all the variable were adjusted in multivariate analysis, gravida and parity were collinear with other variables

activities only and confined themselves as housewives. Nepalese culture is such where women are assigned the duty of caretaker of household works after marriage and they are bounded within the household works which might be the main reason behind less participation of Nepalese women in different other sectors of economy/business. Primiparous mothers were found to have higher ANC visits than multiparous mothers. This is supported by previous study which showed significant reduction of ANC visits with increasing parity.<sup>11</sup>

The mean score of perceived social support in the present study was 73.05, which is lower than the study conducted in Iran i.e 77.90.<sup>12</sup> However, the mean score in the present study is higher than the study conducted in China, Tehran and Alborz city of Iran.<sup>13-15</sup> Among the dimensions of perceived social support the highest score was by spouse/close one, which is similar to previous studies.<sup>16,17</sup> One possible reason for the higher perception of spouse

support in pregnant women could be that husband pay more attention to their wife due to psychological and mental changes during pregnancy.

In present study, almost 17% of participants had FOC which was similar to the result of a meta-analysis of 13 studies conducted between 2010 and 2016 resulted in 17% of FOC.<sup>18</sup> Similarly, by region, it revealed that in Asian studies the level of FOC was 25% which is higher than this study.<sup>18</sup> More studies need to be conducted in the Asian region in a larger population for generalization.

The present study shows that perceived social support was a protective factor for FOC which is similar to the finding of a different study showing that lack of social support increases the risk of FOC.<sup>12,19</sup> However, the study conducted by Haines et al. refuted such relationship and shows no connection between social support and FOC.<sup>20</sup> Although social support was not significant with FOC in some studies, identifying and providing social support during pregnancy helps in the prevention of FOC.

Several studies have shown that FOC often underlies a mother's request for caesarean section which supports the finding of present study.<sup>21,22</sup> The study conducted in Egypt reported that the causes of requesting CS were fear of normal delivery, less physical damage and less risk for mother and baby.<sup>23</sup> The result of the present study revealed that women who had unplanned pregnancy had higher FOC in bivariate analysis. However, the finding was contrasting with the study conducted by Forough et al. which reported a significant association between planned pregnancy and FOC even after adjusting the variables.<sup>24</sup>

The present study shows an association between complications during present and last childbirth with FOC which is similar to the study conducted in Ethiopia.<sup>25</sup> The main reason behind this might be due to lack of adequate counseling, incomplete information and inappropriate

communication methods used during process of conveying information relating to disease condition leading towards the higher FOC.

With a better understanding of the potential effect of fear of childbirth during and after pregnancy, the nursing professionals can provide a supportive environment to women during the antenatal visit. The limitations of the study are data is as this is cross-sectional study, it does not allow for investigation of cause and effect relationship of potential risk of FOC during pregnancy, at the time of labour and after childbirth.

## CONCLUSION

There was a significant association between perceived social support and fear of childbirth in bivariate and multivariate analysis. Complications during current pregnancy and complications during last childbirth were significantly associated with FOC in multivariate analysis.

The strength of current study was standard valid tools were used to assess perceived social support and FOC and multivariate linear regression was used to control the confounding variables. Identifying and providing continuous social support by husband, family and friends are vital during pregnancy to reduce FOC. Early identification of FOC will allow health care professionals to provide appropriate intervention which would lead to decrease consequences of FOC in both mother and child. Further research should be conducted to by including psychosocial characteristics of women in different setting.

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# Childbirth Expectations of Pregnant Women Attending Antenatal Outpatient Department of Dhulikhel Hospital

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## ABSTRACT

### Background

Maternal childbirth expectations play an important role in determining women's response to her childbirth experiences. The expectation of the mother pertaining to the childbirth experiences is an important consideration with unmet expectations often leading to a state of lower satisfaction.

### Objective

To assess the childbirth expectations of pregnant women.

### Method

An analytical cross-sectional study was conducted using systematic random sampling technique to collect data from 426 pregnant women of the third trimester of attending the antenatal care outpatient department of Dhulikhel hospital. Childbirth Expectations Questionnaire was used to collect data. The data collection period was from November 2019 to January 2020. The data was analyzed using descriptive and inferential statistics.

### Result

The results of study indicated the total mean score for the Childbirth Expectations Questionnaire was 118.96 (SD= 8.1). Pregnant women had higher childbirth expectations of pain coping ability (31.99±5.230) and nursing support (31.81±3.325) than support from significant other (29.79±2.673) and use of medical intervention (25.36±3.510). The findings of the study showed that, there was no statistically significant association of socio-demographic and obstetrics characteristics with a total score of Childbirth Expectations Questionnaire in multivariate linear regression analysis.

### Conclusion

The study concluded that pregnant women had higher childbirth expectations of pain coping ability and nursing support than support from significant others and use of medical intervention. It is suggested that nurses providing antenatal care should involve family members in antenatal care and pay close attention to the childbirth expectation of pregnant women to promote positive childbirth experiences.

## KEY WORDS

*Childbirth, Expectations, Pregnancy*

## INTRODUCTION

Maternal childbirth expectations play an important role in determining women's response to her childbirth experience. During pregnancy, pregnant women have relatively long period to develop expectations for the childbirth experience.<sup>1</sup> Forming expectations for major life events can help one prepare mentally or physically for the experience.<sup>2</sup> The kinds of expectations vary among women, as does how realistic they are; some expectations may help women to cope with labor while others may cause anxiety and decrease her ability to cope.<sup>3</sup> Identifying women's expectations, wishes, needs, and fears empowers the health care providers to achieve a common target of a positive birth experience.<sup>4</sup>

Expectations play role in how women respond and adapt to motherhood. The dissonance between expectation and birth experience can lead to damaging the women's self-confidence as a mother and to playing a role in the risk of postpartum depression.<sup>5</sup> The study of expectations in pregnant women is gaining more interest from a biopsychosocial approach because of its consequences on pregnant women's well-being.<sup>6</sup> Recent studies estimated the prevalence of negative childbirth experiences as being between 7-16%. Moreover, some women develop post-traumatic stress disorder after their childbirth.<sup>7</sup> The study done in Jordan indicated that 66% of the women expected overall childbirth experience to be frightening and 78% expected childbirth experience to be painful.<sup>8</sup>

There are no published studies to the researcher knowledge on childbirth expectations of pregnant women in the context of Nepal. Therefore, this is significant area that needs to assess pregnant women's expectations of childbirth because the existence of disparity between expectations and the actual experience of childbirth can affect women's perception and feelings which may produces adverse emotional outcomes like disappointment, fear, and guilt. Care providing during childbirth can be planned and provided based on findings of what women expect about childbirth.

## METHODS

Analytical cross-sectional study design was conducted at Antenatal Care (ANC) Outpatient Department (OPD) of Dhulikhel hospital from November 2019 to January 2020. Sample size was 426. It was calculated by  $z_{1-\alpha/2}^2 s^2 / E^2$  in 95% Confident Interval where allowable error was 10% and 8.96 standard deviation. Systematic random sampling technique was used to select the sample. Total pregnant women of 3<sup>rd</sup> trimester visiting Antenatal OPD of Dhulikhel hospital in the past consecutive 3 months was 1,929 in the year of 2019. Hence, pregnant women visiting the OPD in 2 months was 1286. After calculation of  $k^{\text{th}}$  item, sampling interval was found to be 3. Inclusion criteria were pregnant women age between 18-35 years, third trimester pregnancy with singleton pregnancy and women who

could read, write and understand the questionnaire. High risk pregnancy such as twin pregnancy, pregnancy-induced hypertension, gestational diabetes and other complications were excluded from the study.

The study instrument includes socio-demographic, obstetrics and Childbirth Expectations questionnaire (CEQ). The CEQ that we used was developed by Gupton et al and permission was obtained. It is a self-report structured questionnaire consisting of 35 items rated on a 5-point Likert type scale. There are four scales: coping with pain, nursing support, support from partner/coach and intervention. Scores for the total CEQ can range from 35-175, with higher scores indicating a more positive profile of childbirth expectations.

The content validity of the instruments was maintained through consultation with experts in the field of midwifery and maternal health, English and Nepali. Pre-test was done in 10% of sample size for reliability of the instruments. The reliability co-efficient of instruments was  $r=0.700$ . To calculate reliability Cronbach's alpha was used. On the basis of expert suggestions and pretesting, instruments were modified to increase its clarity.

Ethical approval was obtained from Institutional Review Committee (IRC), KUSMS, and Postgraduate committee of Kathmandu University School of Medical Sciences (KUSMS). Permission was obtained from head of the obstetrics and gynecological department of Dhulikhel Hospital. Informed written consent was obtained from each participant. Confidentiality was maintained by giving individual code to each respondent and data collection was done in separate place near ANC outpatient department to maintain privacy.

Data were analyzed with IBM SPSS version 23.0. An analysis of descriptive statistics was used to illustrate the demographic and other selected characteristics of the respondents. Bivariate and multivariate linear regression was used to analyze the association of socio-demographic and obstetric characteristics of pregnant women with childbirth expectations.

## RESULTS

Table 1 showed that majority of pregnant women found to be residing in urban area. Half of pregnant women had secondary education and half of pregnant women were homemaker. Most of the women belonged to medium class.

Table 2 showed that half of women were primigravida. Most of the women expected normal delivery. The majority of pregnant women reported that current pregnancy was intended. More than three fourth of pregnant women had received information regarding childbirth during antenatal contact. The majority of women expected to give childbirth at hospital and more than half of women expected the female doctor to attend their childbirth.

**Table 1.** Socio-demographic characteristics of pregnant women (n=426)

Characteristics	Frequency (n)	Percentage (%)
<b>Age (in years)</b>		
Mean (SD)	25.47 ± 4.091	
<b>Residence area</b>		
Urban	358	84.0
Rural	68	16.0
<b>Level of education</b>		
Basic education(1-8)	78	18.3
Secondary education (9-12)	213	50.0
Higher education(>12)	135	31.7
<b>Occupation</b>		
Homemaker	252	59.2
Services	95	22.3
Business	55	12.9
Other activities	24	5.6
<b>Economic status</b>		
High	14	3.3
Medium	402	94.4
low	10	2.3

**Table 2.** Obstetric characteristics of pregnant women (n=426)

Characteristics	Frequency (n)	Percentage (%)
<b>Completed weeks of gestation</b>		
Mean (SD)	33.29±4.059	
<b>Gravida</b>		
Primigravida	243	57.0
Multigravida	183	43.0
<b>Number of antenatal contacts</b>		
Mean(SD)	6.43±1.949	
<b>Expected mode of delivery</b>		
Natural childbirth	419	98.1
Caesarean section	7	1.6
<b>Type of pregnancy</b>		
Intended	376	88.3
Unintended	50	11.7
<b>Information received regarding childbirth during antenatal contact</b>		
Yes	335	78.6
No	91	21.4
<b>Expected place to have childbirth</b>		
Home	8	1.9
Health Post	18	4.2
Hospital	400	93.9
<b>Expected health worker to attend childbirth</b>		
Nurse/Midwife	197	46.2
Female doctor	221	51.9
Traditional birth attendant	8	1.9

Table 3 shows that the total mean score for the CEQ was 118.96 (SD= 8.1). Pregnant women had relatively higher mean scores on the sub-scales pain coping (31.99±5.230) and nursing support (31.81±3.325) than those on the other two subscales of significant others (29.79±2.673) and intervention(25.36±3.510).

**Table 3.** Mean score and standard deviation of childbirth expectations of pregnant women

Sub-scale	Number of items	Mean ± SD
Pain coping	11	31.99±5.23
Nursing Support	8	31.81±3.32
Significant other (husband)	7	29.79±2.67
Medical intervention	9	25.36±3.51
Total score of CEQ	35	118.99±8.1

Table 4 showed statistically significant association of age and occupation with childbirth expectations of pregnant women in bivariate analysis. With every increase of 1 year in the age of women, the childbirth expectations of pregnant women increases by 0.3 (95% CI: 0.2-0.5,  $p < 0.01$ ) unit. Women whose occupation were services had 2.7(95% CI: 0.8-4.6;  $p < 0.01$ ) unit higher expectations of childbirth than homemaker women. In multivariate analysis, there is no statistically significant association between age, residence area, level of education, occupation, economic status and childbirth expectations of pregnant women.

**Table 4.** Association between socio-demographic characteristics and childbirth expectations of pregnant women

Characteristics	Bivariate		Multivariate	
	Beta (95% CI)	p-value	Beta (95%CI)	p-value
Age	0.3(0.2-0.5)	<0.01*	0.3(-0.01-0.7)	0.056
<b>Residence area</b>				
Urban	Ref		Ref	
Rural	-1.8(3.9-0.2)	0.84	-2.9(-6.5-0.6)	0.094
<b>Level of education</b>				
Basic education	Ref		Ref	
Secondary education	0.9(1.2-2.9)	0.411	-0.4(-3.7-2.8)	0.789
Higher education	2.0(-0.2-4.3)	0.079	0.4(-3.8-4.6)	0.850
<b>Occupation</b>				
Homemaker	Ref		Ref	
Services	2.7(0.8-4.6)	<0.01*	-0.5(-4.5-3.5)	0.801
Business	0.04(-2.3-2.4)	0.969	-2.9(-6.8-1.0)	0.146
Others	1.5(-1.8-4.9)	0.374	-0.5(-6.7-5.7)	0.871
<b>Economic status</b>				
High	Ref		Ref	
Medium	-1.4(-5.7-2.9)	0.537	6.2(-4.4-17.0)	0.251
Low	-1.3(-7.9-5.3)	0.702	7.9(-4.2-20.2)	0.197

CI: Confidence Interval, Ref: Reference, \*: statistically significant association for p-value < 0.05. All the socio-demographic and obstetrics variable were adjusted

Table 5 showed that there is a statistically significant association between gravid, number of antenatal contacts, information received regarding childbirth and childbirth expectations of pregnant women in bivariate analysis. In multivariate analysis, there is no statistically significant association between obstetric characteristics and childbirth expectations of pregnant women. Gravid and expected health workers to attend childbirth were collinear therefore, removed from multivariate analysis.

**Table 5. Association between obstetric characteristics and childbirth expectations of pregnant women**

Characteristics	Bivariate		Multivariate	
	Beta (95% CI)	p-value	Beta (95%CI)	p-value
<b>Completed weeks of gestation</b>	-0.1(-0.2-0.1)	0.502	-0.1(-0.3-0.1)	0.510
<b>Gravida</b>				
Primigravida	Ref			
Multigravida	1.9(0.4-3.5)	0.013*	-	-
<b>Number of antenatal contacts</b>	0.4(0.04-0.8)	0.030*	0.4(-0.2-1.1)	0.204
<b>Expected mode of delivery</b>				
Natural childbirth	Ref		Ref	
Caesarean section	-1.4(-7.5-4.6)	0.646	-4.8(-15.1-5.3)	0.349
<b>Type of pregnancy</b>				
Intended	Ref		Ref	
Unintended	-0.9(-3.3-1.5)	0.454	0.3(-3.3-4.1)	0.832
<b>Information received regarding childbirth during antenatal contact</b>				
No	Ref		Ref	
Yes	2.0(0.2-3.9)	0.033*	-2.3(-11.7-7.0)	0.622
<b>Expected place to have childbirth</b>				
Home	Ref		Ref	
Health Post	-1.8(-8.5-4.9)	0.599	2.5(-11.6-16.8)	0.720 0.712
Hospital	2.4(-3.2-8.1)	0.397	2.2(-9.9-14.5)	
<b>Expected health worker to attend childbirth</b>				
Nurse	Ref	Ref		
Female doctor	1.2(-0.3-2.7)	0.125	-	-
Traditional birth attendant	-0.6(-6.3-5.1)	0.839		

CI: Confidence Interval, Ref: Reference, \*: statistically significant association for p-value <0.05. All the socio-demographic and obstetrics variable were adjusted

## DISCUSSION

### Childbirth expectations of pregnant women

Among the study participants, most of the pregnant women (98.1%) were expected natural birth which was slightly higher than the study conducted in Tamil Nadu, India (94%) and a study conducted in China (93%).<sup>10,11</sup> Among the study participants, more than half of pregnant women (51.9%) were expected their childbirth to be attended by a female doctor which was contrast to the study done in

India (91%).<sup>10</sup> This study findings revealed that 51.9% of pregnant women expected their childbirth to be attended by female doctor which was higher compare to the nurse (46.2). It could be due to pregnant women believe doctors are experts and experienced.

Among the study participants, the mean scores of CEQ were  $118.96 \pm 8.10$  (range 35-175) which was higher than ( $109.89 \pm 8.96$ ) study conducted in China.<sup>11</sup> It could be due to different socio-culture background of the study population. In this study, women had higher mean scores on the sub-scales for pain coping ( $31.99 \pm 5.23$ ) and nursing support ( $31.81 \pm 3.32$ ) than significant other's support ( $29.79 \pm 2.67$ ) and medical intervention ( $25.36 \pm 3.51$ ) whereas a study undertaken in China indicated that women had relatively higher mean scores on the sub-scales for significant other's and nursing support than those on the other two sub-scale of coping with pain and medical intervention.<sup>11</sup> In contrast, study conducted by Arwa Oweis and Lubra Abushaikh in several PHCs in Jordan reported that women expected inadequate nursing and midwifery support during childbirth.<sup>8</sup>

### Association of socio-demographic characteristics and childbirth expectations of pregnant women.

This study finding revealed that there was a significant association between age and childbirth expectations of pregnant women in a bivariate analysis which was inconsistent with the study conducted by Bi-Chin et al.<sup>12</sup> This study finding showed younger women had lower childbirth expectation. It may be due to adolescent mothers have a tendency to be passive in preparing for childbirth and the childbirth process is considered a stressful and painful experience. This causes adolescent mothers who are not sure in preparing for childbirth to have low childbirth expectations.<sup>13</sup>

This study findings showed there was no significant association between level of education and childbirth expectations of pregnant women which were similar of the study conducted by Bi-Chin et al.<sup>12</sup> However, the finding was contrasting with the study conducted in India.<sup>10</sup> In this study, there was no association between economic status and childbirth expectations of pregnant women which were similar to study undertaken in Indian and Taiwan.<sup>10,12</sup>

### Association between obstetric characteristics and childbirth expectations of pregnant women

The study finding showed no significant association between the type of pregnancy and childbirth expectations of pregnant women which were inconsistency with a study undertaken in Spain indicated pregnant women who had planned their pregnancy had higher childbirth expectation than women whose pregnancy were unplanned.<sup>6</sup> In this study information received regarding childbirth had a significant association with childbirth expectations of pregnant women by a bivariate analysis which was inconsistent with the study done by Bi-Chin et al.<sup>12</sup>

The study was conducted in antenatal care OPD thus results may not be representative of other locations. Questionnaire for this study was self-reported and therefore women who could read, write, and understand the questionnaire were only included in this study that limits the generalizations of the finding to the women who could not read, write and understand the questionnaire.

This study was based on quantitative analysis. It would be interesting to support these results with qualitative study that would help to interpret the analysis of result framed. This result would be more interesting to support if the women of all different trimester of pregnancy were taken as participants.

## CONCLUSION

Pregnant women had higher childbirth expectations of support from nurses and their ability to cope with pain

than support from significant others and the use of medical interventions. The findings of the study showed there was no statistically significant association of socio-demographic and obstetrics characteristics with a total score of CEQ in multivariate linear regression analysis.

The nurses should include the finding of this study into antenatal care to develop positive and realistic childbirth expectations.

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