



Original Research Article

## Knowledge Regarding Complications of Instrumental Delivery and Their Management among Final Year B.Sc. Nursing Students of a Selected Nursing College, Belgaum, Karnataka

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### ABSTRACT

**Background:** Ninety nine percent of maternal and newborn mortality occurs in the developing world, where more than 50 per cent of the deliveries are still conducted without the assistance of skilled health personnel. The main reason for high mortality and morbidity is that women do not have access to quality health services. The skilled attendant is not just a care provider who has been trained to perform skills, but she is the person to take prompt and emergency action. The health assistants need adequate knowledge and skill to deal with emergency and reduce maternal mortality rate.

**Objectives:** To assess the knowledge of Final year B.Sc. Nursing students regarding complications of instrumental delivery and their management by using structured knowledge questionnaire and to find the association between knowledge scores and selected demographic variables.

**Materials and methods:** The conceptual framework of the study was based on modified Dorothy Johnson's open system model (1990). The research approach used in this study was descriptive in nature. Descriptive design is adopted in the study. The study was conducted on 71 Final year B.Sc. Nursing students of a selected Nursing College, Belgaum, Karnataka. The sampling technique used in the present study was Convenience sampling technique.

**Results:** The result of the study showed that majority of the Final year B.Sc. Nursing students, 56 (79%) had average knowledge, 9 (13%) had poor knowledge and 6 (8%) had good knowledge. The obtained chi-square value for age was 0.5435, sex was 0, religion was 2.157 and source of information was 5.942. Hence, there was no significant association between the knowledge scores and selected demographic variables of Final year B.Sc. Nursing Students.

**Conclusion:** The findings of the study revealed that majority had average knowledge.

**Keywords:** Instrumental delivery, Knowledge, Final year B.Sc. Nursing students.

### INTRODUCTION

Pregnancy and childbirth are special events in a woman's life and also in the lives

of the families. This can be a time of great hope and joyful anticipation. [1]

Operative vaginal delivery or instrumental delivery refers to a delivery in

which the operator uses forceps or a vacuum device to assist the mother in the delivery of fetus to extra uterine life where the instrument is applied to the fetal head and then the operator uses traction to extract the fetus during the uterine contraction. [2]

Approximately 125 million women give birth each year. Half of these deliveries involve complications; over 500,000 women die every year (1600 per day) due to complications of pregnancy or childbirth. [3]

India has the largest number of births (27 million), maternal deaths (estimated at about 1, 17, 000) and neonatal deaths (1,098,000) per year in the world. There are several reasons for the high maternal mortality rate in India including non-availability of obstetricians and skilled birth attendants in rural areas. [4]

Karnataka has a maternal mortality rate of 178 deaths per 100,000 live births. It has the highest maternal mortality rate in southern Indian state, according to data from the National Family Health Survey and the government's Sample Registration System. Karnataka's maternal mortality rate is slightly below the national average of 212 deaths per 100,000 live births. [5] Maternal deaths are rising in Belgaum district; in 2011-12 there were 83 deaths while in 2012-13, it increased to 98. The reason is believed to be lack of experts in the general hospital and Community Health Centres. According to health officials, the deaths are due to negligence on part of women. [6]

The main reason for high mortality and morbidity is that women do not have access to quality health services. The skilled attendant is not just a care provider who has been trained to perform skills, but she is the person to take prompt and emergency action. The health assistants need adequate knowledge and skill to deal with emergency and reduce maternal mortality rate. [7]

The FDA released a warning that vacuum assisted delivery may result in fatal complications particularly subgaleal haematoma and intracranial haemorrhage including subdural, subarachnoid, intraventricular and intraparenchymal haemorrhage. [8]

Vacuum extraction fails more often than forceps deliveries. Sequential application of these interventions is highly controversial. The failure of forceps delivery should lead to a caesarean delivery. Overall, immediate maternal complications are more common for forceps deliveries than vacuum extraction deliveries. Vacuum extraction tends to reduce the number of episiotomies, first and second degree perineal lesions and damage to the anal sphincter. The rates of immediate neonatal mortality and morbidity are similar for forceps and vacuum extraction deliveries. [9]

Forceps delivery leads to maternal complications like haemorrhage, trauma or soft tissue injury in the perineum, vagina or cervix, dysuria or urinary retention, etc where postnatal morbidity is higher in any birth intervention. [10]

Vacuum extractor is less likely to achieve a successful vaginal delivery than the forceps. Cephalohematoma is more associated with ventouse delivery while facial and cranial injuries are more common with forceps delivery. Approximately 20% failure of the ventouse may arise which is more likely in the presence of excessive caput and also due to inexperienced health members. [10]

There is a higher incidence of cephalohematoma, retinal haemorrhage and low Apgar scores at five minutes with the use of vacuum during delivery. Higher use of an alternative instrument after the failure of vacuum extraction contributed to the worse neonatal outcomes. [11]

Out of approximately 15,000 babies delivered with forceps, 0.12% had a seizure

at birth and 0.3% for the newborns delivered by vacuum or C-section. [12]

Instrumental vaginal delivery is a key element of essential obstetric care, scaling up its use in resource poor countries through training. Supply of appropriate equipment is likely to contribute significantly to reduced maternal and newborn morbidity/mortality. [13]

The major factor determining the safety of the instrument is the operator rather than the instrument. Skilled operator can use either method of the delivery. Encouraging operative vaginal deliveries may help to reduce the raised caesarean section rates. So, the art of instrumental delivery using either vacuum or forceps should be taught well to the health personnels. [14]

## MATERIALS AND METHODS

The present study was conducted to assess the knowledge regarding complications of instrumental delivery and

their management among Final year B.Sc. Nursing students of a selected Nursing College, Belgaum, Karnataka by using descriptive design with a descriptive approach. Non-probability convenience sampling technique was used to select the subjects. Structured knowledge questionnaire was used to collect the data. The tool used in the study consists of two parts:

Part-I: Information on demographic variables of the respondents containing 4 items: age, sex, religion and source of information.

Part-II: Structured knowledge questionnaire of 35 items related to complications of instrumental delivery and their management. For the 35 items related to complications of instrumental delivery and their management, each correct answer was awarded with a score of '1' and a score of '0' was awarded for the wrong answer. The data obtained was analyzed in terms of descriptive analysis and inferential statistics.

## RESULTS

### 1). Findings related to socio-demographic variables of Final year B.Sc. Nursing students:

Table 1: Frequency and percentage distribution of Final year B.Sc. Nursing students according to socio-demographic variables: n=71

Sl. No.	Socio demographic variables	frequency (f)	Percentage (%)
<b>1.</b>	<b>Age in years</b>		
	a. 19-20	2	2.81 (%)
	b. 21-22	69	97.19 (%)
	c. 23-24	0	0 (%)
	d. 25 and above	0	0 (%)
<b>2.</b>	<b>Sex</b>		
	a. Male	0	0 (%)
	b. Female	71	100 (%)
<b>3.</b>	<b>Religion</b>		
	a. Hindu	19	26.76 (%)
	b. Christian	51	71.83 (%)
	c. Muslim	1	1.41 (%)
	d. Others	0	0 (%)
<b>4.</b>	<b>Source of information</b>		
	a. Textbooks	37	52.12 (%)
	b. Teachers	10	14.08 (%)
	c. Hospital posting	23	32.39 (%)
	d. Others	1	1.41 (%)

Table 1 showed that majority of Final year B.Sc. Nursing students, 69 (97.19%) were in the age group of 21-22

years and 2 (2.81%) of them were in the age group of 19-20 years. Seventy one (100%) of the students was female. Majority of

them, 51 (71.83%) were Christian, 19 (26.76%) of them were Hindu and 1 (1.41%) of them were Muslim. Majority of the, 37 (52.12%) gained information from textbooks, 23 (32.39%) gained from hospital

posting, 10 (14.08%) gained from teachers and 1 (1.41%) gained from other sources.

**2). Findings on knowledge regarding complications of instrumental delivery and their management among Final year B.Sc. Nursing students:**

**Table 2: Frequency (f) and percentage (%) distribution of knowledge scores among Final year B.Sc. Nursing students. n=71**

Sl. No.	Knowledge score	Frequency(f)	Percentage(%)
1.	Good ( $\bar{X}+SD$ )	6	8%
2.	Average ( $\bar{X}-SD$ ) ( $\bar{X}+SD$ )	56	79%
3.	Poor ( $\bar{X}-SD$ )	9	13%

Table 2 revealed that majority of the students, 56 (79%) had average knowledge, 9 (13%) had poor knowledge and 6 (8%) had good knowledge.

**3). Data describing association between knowledge scores and selected demographic variables of Final year B.Sc. Nursing Students:**

**Table 3: Association between the knowledge scores of the subjects with selected demographic variables. n=71**

Sl. No.	Variables	Good	Average	Poor	Chi-square ( $\chi^2$ )	
					Calculated Value	Tabulated Value
<b>1.</b>	<b>Age in years</b>					
	a. 19-20	0	2	0	0.5435	12.592
	b. 21-22	6	54	9		NS
	c. 23-24	0	0	0		
	d. 25 and above	0	0	0		
<b>2.</b>	<b>Sex</b>					
	a. Male	0	0	0	0	5.991
	b. Female	6	56	9		NS
<b>3.</b>	<b>Religion</b>					
	a. Hindu	1	17	1	2.157	12.592
	b. Christian	5	38	8		NS
	c. Muslim	0	1	0		
	d. Others	0	0	0		
<b>4.</b>	<b>Source of information</b>					
	a. Textbooks	2	32	3	5.9429	12.592
	b. Teachers	0	8	2		NS
	c. Hospital posting	4	15	4		
	d. Others	0	1	0		

NS: Non significant

Table 3 revealed that the calculated chi-square value for age, sex, religion and source of information was less than the chi-square table value. Hence, there was no significant association between the knowledge and age, sex, religion, source of information of the Final year B.Sc. Nursing students.

**DISCUSSION**

The findings of the study have been discussed under the following headings:

**1. Findings related to socio-demographic variables of Final year B.Sc. Nursing students.**

**Age:**

The present study revealed that majority of Final year B.Sc. Nursing students, 69 (97.19%) were in the age group of 21-22 years and 2 (2.81%) of them were in the age group of 19-20 years.

The present study is contradictory to the study conducted by Nimbargi RM among the staff nurses where maximum of

them were in the age group of 31-35 years (38%).<sup>[15]</sup>

**Sex:**

The present study revealed that 71 (100%) of the Final year B.Sc. Nursing students were female.

**Religion:**

Majority of the Final year B.Sc. Nursing students, 51 (71.83%) were Christian, 19 (26.76%) of them were Hindu and 1 (1.41%) of them were Muslim.

The present study is contradictory to the study conducted by Nimbargi RM among the staff nurses where majority, 25 (50%) of them were Hindu.<sup>[15]</sup>

**Source of information:**

Majority of the Final year B.Sc. Nursing students, 37 (52.12%) gained information from textbooks, 23 (32.39%) gained from hospital posting, 10 (14.08%) gained from teachers and 1 (1.41%) gained from other sources.

The present study is contradictory to the study conducted by Nimbargi RM among the staff nurses where majority, 22(44%) of them gained information from Internet.<sup>[15]</sup>

**2. Findings on knowledge regarding complications of instrumental delivery and their management among Final year B.Sc. Nursing students.**

Findings on knowledge regarding complications of instrumental delivery and their management among Final year B.Sc. Nursing students revealed that majority of the students, 56 (79%) had average knowledge, 9 (13%) had poor knowledge and 6 (8%) had good knowledge.

The present study is supported by the study conducted by Nimbargi RM to assess the effectiveness of structured teaching programme on knowledge regarding complications of instrumental delivery and their management among staff nurses working in maternity units of selected

hospitals at Bagalkot. The findings showed that majority of staff nurses (24%) had average knowledge, 70 % had inadequate knowledge and only 6% had adequate knowledge.<sup>[15]</sup>

**3. Data describing association between knowledge scores and selected demographic variables of 4<sup>th</sup> year B.Sc. Nursing Students.**

The obtained chi-square value for all the selected demographic variables such as age ( $\chi^2=0.5435$ ,  $df=6$ ), sex ( $\chi^2=0$ ,  $df=2$ ), religion ( $\chi^2=2.157$ ,  $df=6$ ) and source of information ( $\chi^2=5.9429$ ,  $df=6$ ) was less than the table value which showed that there was no significant association between the knowledge scores and selected demographic variables of Final year B.Sc. Nursing Students.

The present study is contradictory to the study conducted by Nimbargi RM among the staff nurses where there was significant association between the knowledge scores and selected demographic variables.<sup>[15]</sup>

**CONCLUSION**

Based on the findings of the study, the following conclusions were drawn:

1. Majority of Final year B.Sc. Nursing students, 69 (97.19%) were in the age group of 21-22 years and 2 (2.81%) of them were in the age group of 19-20 years.
2. Seventy one (100%) of the Final year B.Sc. Nursing students were female.
3. Majority of the Final year B.Sc. Nursing students, 51 (71.83%) were Christian, 19 (26.76%) of them were Hindu and 1 (1.41%) of them were Muslim.
4. Majority of the Final year B.Sc. Nursing students, 37 (52.12%) gained information from textbooks, 23 (32.39%) gained from hospital



posting, 10 (14.08%) gained from teachers and 1 (1.41%) gained from other sources.

5. There was no significant association between the knowledge scores and demographic variables like age, sex, religion, source of information of the Final year B.Sc. Nursing students.

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