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Knowledge and practice level of staff nurses regarding AVD (Assisted Vaginal Delivery) in selected hospital at Bangalore, Karnataka.

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ABSTRACT:

Background: In some vaginal delivery additional assistance is employed to assist vaginal delivery by using forceps or vacuum extraction applied to the baby's head. Assisted vaginal delivery may occur when the second stage of labor is prolonged or when the baby appears to be distress and delivery time needs to be accelerated.

Aim: The aim of the study was to assess the knowledge and practice level of staff nurses regarding AVD (Assisted Vaginal Delivery).

Objectives: 1. To determine the knowledge of staff nurses regarding assisted vaginal delivery. **2.** To determine the self reported practice of nurses in implementing assisted vaginal delivery. **3.** To find out the relationship between knowledge and practice of staff nurses in implementing assisted vaginal delivery. **4.** To find out the association between the knowledge score of staff nurses and selected baseline variables. **5.** To find out the association between the practice of staff nurses and selected baseline variables.

Methodology: 60 staff nurses from Bhagath hospital were selected by using non probability purposive sampling technique.

Conclusion: Majority of the staff nurses (53.33%) had good knowledge and 41.66% of them have satisfactory knowledge. Majority of the subjects, 60% of them have satisfactory knowledge regarding AVD. The majority of the subjects (78.33%) were having very good practice of AVD. There was a weak positive relationship between knowledge and practice of staff nurses regarding implementation of AVD.

Keywords: Knowledge, Practice, Staff Nurses, Assisted Vaginal Delivery, Hospital.

INTRODUCTION:

It was not long ago that childbirth was commonly viewed as one of life's most dreaded experiences by woman. Going back to 18 th century, the maternal death rate was an alarming 12% .More over complications such as dehydration, hemorrhage; convulsion and infection were an accepted part of the birthing process. Thankfully, advancement in modern medicine has dramatically reduced the incidence of pregnancy and delivery complications in women.

Assisted vaginal delivery is an integral part of obstetric care worldwide. It may be performed as infrequently as in 1.5% of deliveries or as often as in 15% (Australia and Canada). Discrepant rates may be related to differences in labor management. In general maternal outcome may be improved by a reduction in instrumental delivery rates.[1] Spontaneous vaginal delivery involves the birth of a baby and delivery of placenta from the

uterus and through the cervix and the birth canal. This process results from the contraction of the uterus during labor. Most women deliver 38-40 weeks after becoming pregnant.[2] The baby usually present head first with its face rotated towards the mother's spine and crowns to spontaneously deliver vaginally with maternal pushing efforts that are coordinated with contractions. If the baby' s head does not spontaneously rotate and descend, instruments such as forceps or vacuum extractor may be used to gently turn and assist with the final expulsion of the baby's head.

In some vaginal delivery additional assistance is employed to assist vaginal delivery by using forceps or vacuum extraction applied to the baby's head. Assisted vaginal delivery may occur when the second stage of labor is prolonged or when the baby appears to be distress and delivery time needs to be accelerated. Other indications are if pushing continuous for a long time, once the cervix is fully dilated to 10 cm, both mother and baby become exhausted, if contractions fade away or if the baby is in an awkward position such as with the spine against the mother's spine. The above mentioned reasons are present then forceps assistance or vacuum extraction may be needed for delivery.[5]

The overall incidence of assisted vaginal delivery is found to be10%- 20%. The methods applied could be either vacuum or forceps. In a worldwide opinion survey done in 1990 about instrument preference for assisted vaginal delivery, forceps were found to be popular in Eastern Europe and USA, while vacuum was preferred in Northern Europe, Asia, Africa, and Middle East.[6]

A meta analysis of 10 clinical trials concluded that vacuum assisted deliveries were associated with significantly less maternal trauma than forceps deliveries, including a lower rate of severe perineal injury , vacuum devices were also associated with a reduced need for general and regional anesthesia, and with less postpartum pain than forceps. There are two main types of disposable cups, which can be made up of plastic, polyethylene or silicon. The soft cup is pliable funnel or bell shaped cup. The rigid cup is a firm mushroom shaped cup. The original metal vacuum cups were associated with a higher rate of fetal scalp trauma than soft silicon vacuum cup[30], But the failure to deliver rate is higher with the soft cup than with the the metal cup .Successful vacuum delivery was more likely in multiparous women than in nulliparous women.[7]

Eight out of ten women who have an assisted birth have a normal birth next time around. A successful assisted vaginal delivery avoids caesarean section and its implication for future pregnancy. Most spontaneous or assisted vaginal delivery are uncomplicated .Mother and infant are usually able to leave the hospital within 48 hours.[7]

NEED FOR THE STUDY

Many developing nations, lack of adequate health care and family planning, and pregnant women have minimal access to skilled labor and emergency care .Basic emergency obstetric interventions such as manual removal of placenta, and instrumental vaginal delivery are vital to improve the chance of survival. Every minute a women dies during labor or delivery.

According to World health Organization (WHO) maternal death is defined as death of a women while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and its site of the pregnancy, from any cause related to aggravated by their pregnancy or its management but do not from accidental or incidental cause. The U.S joint commissions on Accreditation of health care Organizations call maternal mortality a 'sentinel event' and use it to assess the quality of health care system. Also it has been reported that about 10% maternal death may occur late, that is after 42 days after termination or delivery[4].

Most maternal deaths are avoidable, as the health care solutions prevent or manage complications are well known .All women need is access to antenatal care in pregnancy, skilled care during child birth, and care and support in the weeks after child birth. It is particularly important that all births are attended by skilled health professionals, as timely

management and treatment can make the difference between life and death[5].

According to WHO 95% of maternal death occur in Asia and Africa. The most common cause of maternal mortality and morbidity are widely known and include a range of medical, social and health system related to factors. According to WHO the world total maternal deaths was 529,000 in 2021.In Africa , the total was 251,000, in Asia the total was 253,000,maternal deaths in Africa and Asia ,combined total 504,000 or 95.2% of the world total. Data from the most recent National family health survey suggests that the maternal mortality ratio has fallen from approximately 400 deaths per 10,0000 live births in 1997 to 301 death per 10,0000live births in 2006[.4]

According to the U.S Centers For Disease Control And Prevention, 3.2% of vaginal deliveries in 2019 were assisted by vacuum and 0.7% were assisted by forceps[.1] According to American college of obstetrician and Gynecologist ,operative vaginal delivery should be considered when there is a prolonged second stage of labor or no reassuring fetal heart tones that would indicate fetal compromise ,or if the second stage needs to be shortened for maternal benefit.[9]

Thomas et al., conducted a study to determine the maternal and prenatal outcomes associated with delivery by the rigid plastic vacuum delivery device, out of 1000 women, 70% were nulliparous and 30% were parous. In 87.1% of the women , vacuum assisted delivery was completed. Spontaneous or forceps delivery occurred in 0.9% and caesarean section was performed in 2%.The vacuum was applied for 10 minutes in 97.4% of deliveries.3 pulls were required in 95.6% and 25lb traction forces was required in 85.7% of cases. There was statistically significant relationship between unfavorable cup application and scalp trauma in infants born to nulliparous women (P<0.001). Four cases of intracranial hemorrhage (0.4%) were identified and three of these infants were subsequently neurodevelopment ally normal. There was one subgaleal hemorrhage.[10]

Other techniques that can be used to assist with the stimulation of labor include artificially rupturing the bag of amniotic fluid surrounding the baby (amniotomy), inducting (stimulating) contractions, or using the hormone oxytocin to enhance inefficient contraction. Oxytocin also usually given after Delivery of the baby and placenta to contract uterus and reduce postpartum bleeding. It is not always possible to avoid an assisted birth, the following factors can help reduce the risk of having bone, that are continuous support, getting into upright position frequently during labor, avoiding an epidural analgesia.[12]

Painless traumatic and healthy neonatal outcomes are the primary goals of any labor process. In routine 10% full vaginal deliveries require instrumentation. The choices variable for instrumentation includes use of outlet forceps and vacuum extraction through ventouse. The consideration before selection of any specific instrumental method of delivery is multifold starting from the maternal range of injuries to any adverse neonatal outcomes. Vacuum extraction and obstetric forceps are operative procedures use during complicated vaginal deliveries[13].

STATEMENT OF THE PROBLEM
A study to assess the knowledge and practice of staff nurses regarding AVD (Assisted Vaginal Delivery) in selected hospital at Bangalore, Karnataka.

OBJECTIVES
1) To determine the knowledge of staff nurses regarding assisted vaginal delivery**.**
2) To determine the self reported practice of nurses in implementing assisted vaginal delivery**.**
3) To find out the relationship between knowledge and practice of staff nurses in implementing assisted vaginal delivery.
4) To find out the association between the knowledge score of staff nurses and selected baseline variables.
5) To find out the association between the practice of staff nurses and selected baseline variables.

HYPOTHESES:

H_1: There will be significant relationship between the knowledge score and practices of staff nurses regarding AVD.

H_2: There will be significant relationship between knowledge score on AVD and selected baseline variables.

H_3: There will be significant relationship between practice of AVD and selected baseline variables.

DELIMITATIONS:

The study is limited to:

➢ Study is delimited to staff nurses working in maternity and neonatal units of selected hospitals at Bangalore.

METHODOLOGY:

RESEARCH APPROACH: A quantitative approach was adopted in the present study.

RESEARCH DESIGN:

The present study was conducted by using co-relational research design

SETTING: The present study was conducted in the maternity wards (antenatal, intra natal and postnatal) of Bhagath hospital which is a 100 bedded hospital.

POPULATION:

TARGET POPULATION: Staff nurses working in maternity units.

ACCESSIBLE POPULATION: Staff nurses working in Bhagath hospital, Bangalore.

SAMPLE FOR THE STUDY: 60 staff nurses working in maternity units of selected hospitals and who fulfilled the inclusion criteria.

SAMPLE SIZE: A sample of 60 staff nurses.

SAMPLING TECHNIQUE: The participants were selected by using non-probability purposive sampling technique.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA:

✔ Registered nurses on completion of GNM/BSc/PB.BSc/ graduation in Nursing.

✔ Nurses who are working in maternity and neonatal units.

EXCLUSION CRITERIA:

✔ Student nurses who are doing internship and not registered.

✔ Nurses working in other wards.

VARIABLES:

RESEARCH VARIABLES: Knowledge and practice.

DEMOGRAPHIC VARIABLES: Age, educational qualification, occupational status, area of residence, year of experience, and source of knowledge regarding the AVD.

DESCRIPTION OF THE TOOL

Part-I:- It Deals With The Demographic Data.

Part-II:- Semi Structured Knowledge Questionnaire Consisted Of Total 26 Items.

Part-III: Self administered practice checklist on AVD. It consists of total 15 items, in which eight were regarding concept of breastfeeding and seven were regarding AVD.

RELIABILITY:

The reliability of the tool was checked by administering the tool to 6 staff nurses working in maternity units. Split half method was used to find out the internal consistency of the semi structured knowledge questionnaire to assess the knowledge ($r=0.85$), and test retest method was used to find out the internal consistency of the self administered practice checklist to assess practice ($r= 0.77$). Hence the tools were considered to be reliable.

PILOT STUDY:

The pilot study was conducted in Bhagath hospital. Formal permission was obtained from the authorities. The sample size of the pilot study was six**.**

METHOD OF DATA COLLECTION:

Formal written permission was obtained from concerned authorities of the selected hospital before data collection. The investigator visited the hospital every day as per the convenience of the respondents. After selecting the sample who met the inclusion criteria of the study, the purpose of the study was explained to the subjects and confidentiality of the data collected was assured. An informed consent was obtained from the participants. The investigator collected the data from the staffs working in the selected hospitals of Bangalore. Semi structured knowledge questionnaire and self administered practice checklist was administered to the participants. The average time taken by the participants to complete the tool was 15-20 minutes. The selected subjects were 60 and all the subjects were very co-operative and the investigator expressed her gratitude for their co-operation. The collected data was compiled for analysis.

DATA ANALYSIS & DISCUSSION:

Table -1: Frequency and percentage of Knowledge regarding AVD. (n=60)

Knowledge score	knowledge percentage	Grading	Percentage
≤13	≤50%	Poor	-
14-18	50%-70%	Average	41.66%
19-22	71%-85%	Good	53.33%
23-26	>85%	Very good	5%

Fig-1: Bar diagram showing the knowledge level of staff nurses regarding AVD.(n=60)
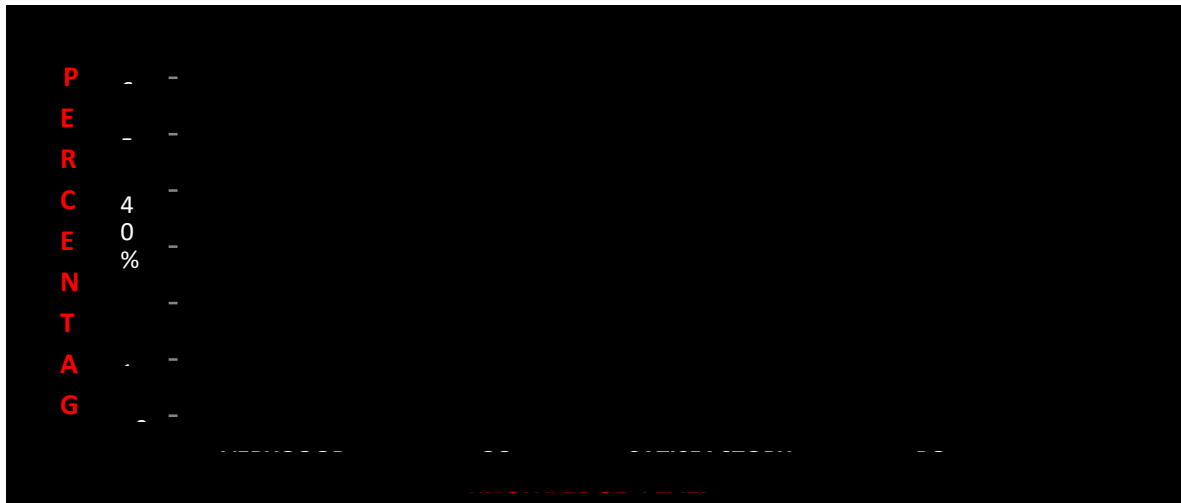

Table-2: Area Wise Mean, Standard Deviation and Mean Percentage of Knowledge. (n=60)

Area	Maximum Score	Range	Mean	SD	Mean Percentage
Breast feeding	13	6	10.61	1.059	81.61%
AVD	13	9	8.93	1.881	68.69%
TOTAL	26	9	19.15	2.23	73.65%

Table -3: Distribution of subjects according to the grading of practice score. (n=60)

Grading	Practice Score	Practice score percentage	Frequency(F)	Percentage (%)
Poor	≤9	≤60%	-	-
Satisfactory	10-11	61-74%	4	06.66
Good	12-13	75%-86%	9	15.00
Very good	14-15	>86%	47	78.33

Fig-2: Bar diagram showing the practice level of staff nurses regarding AVD. (n=60)
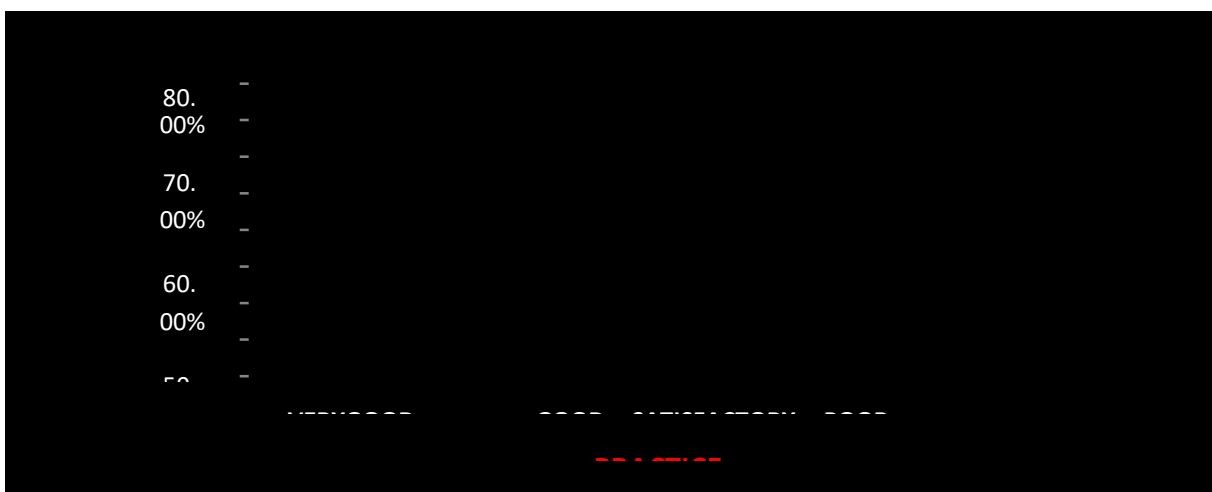

Table -4: Correlation between level of knowledge and practice.   (n=60)

Correlation	'R' Value	'P' Value
Level of knowledge and practice	0.222	0.088

Table-5: Association between knowledge scores and selected demographic variables. (n=60)

S. No	Variables	<Median	>/= Median	df	Chi square	'P'value
1	**Age** Less than 25 years Above 25 years	12 13	13 22	1	0.707	0.400
2	**Education** GNM B.Sc & PB.B.Sc	8 17	27 8	1	12.227	0.000*
3	**Area of work** Maternity staff NICU staff	16 9	23 12	1	0.019	0.891

4	**Area of residence** Urban Rural	17 8	30 5	1	2.696	0.101
5	**Year of experience** 1-3 years 3-6 years	17 8	27 8	1	0.623	0.430
6	**Source of information** Self learning Others	20 5	8 27	1	19.133	0.000*

*= Significant

Table-6: Association between knowledge scores and selected demographic variables. (n=60)

S. No	Variables	<Median	>/= Median	df	Chi square	'P'value
1	**Age** Less than 25 years Above 25 years	14 15	11 20	1	1.009	0.315
2	**Education** B.Sc Others	15 14	20 11	1	1.009	0.315
3	**Occupation** Midwife NICU staff	21 8	18 13	1	1.356	0.244
4	**Area of residence** Urban Rural	20 9	27 4	1	2.902	0.088
5	**Year of experience** 1-3 years Above 3 years	21 8	23 8	1	0.024	0.876
6	**Source of information** Self learning Others	18 11	10 21	1	5.350	0.021*

*=significant

MAJOR FINDINGS OF THE STUDY:
I. Frequency and percentage of level of knowledge regarding AVD:
Majority of the subjects, 32 (53.33%) had good knowledge, 25 (41.66%) of them had average knowledge and 3 (5%) had very good knowledge score.
II. Frequency and percentage of level of practice regarding AVD:
Majority of the subjects i.e. forty seven (78.33%) practice score ranged between 14 - 15 (very good), nine (15 %) of them have the practice score ranged between 12-13 (good)

and four (6.66%) of them have the practice score ranged between 10-11(satisfactory).

III. Correlation between the level of knowledge and practice regarding AVD among staff nurses:

There was a weak positive relationship between knowledge and practice scores. The Karl Pearson correlation coefficient (r = 0.222) was positive. There is no statistically significant relationship between knowledge and practice score. The null hypothesis H_0 is accepted and the research hypothesis H_1 is rejected.

IV: Association between knowledge and baseline variables.

Association between knowledge score and baseline variables: The computed chi-square value for education and source of information were higher than the table value at 0.05 level of significance showing that there is a significant association between education and source of information with knowledge score.

V. Association between practice and baseline variables.

The chi-square value computed between knowledge and source of information was significant at 0.05level. Thus it can be interpreted that there is significant association between practice and selected variable like source of information.

CONCLUSION:

Majority of the staff nurses (53.33%) had good knowledge and 41.66% of them have satisfactory knowledge. Majority of the subjects 78.33% have good knowledge in the area of breastfeeding and 60% of them have satisfactory knowledge regarding AVD. The majority of the subjects (78.33%) were having very good practice of AVD. There was weak positive relationship between knowledge and practice of staff nurses regarding implementation of AVD.

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