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Original Research Article

Knowledge and practice of active management of third stage of labour among nursing personnel of selected hospitals in West Bengal

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ABSTRACT

Background: Active management of third stage of labor is a crucial intervention to prevent postpartum hemorrhage, a leading cause of maternal morbidity and mortality. It involves a series of steps, such as administering uterotonic drugs, controlled cord traction, and uterine massage.
Methods: Descriptive research design was used. Purposive sampling technique was used to select 48 nursing personnel working in selected hospitals of West Bengal. Data were collected using a semi-structured interview schedule and a knowledge interview schedule through interviews and an observational checklist on AMTSL through observation.
Results: Study results revealed that 6.25%, 37.50%, 29.17% and 27.08% of nursing personnel had excellent, very good, good and poor knowledge, respectively and 22.92%, 33.33%, 16.67% and 27.08% of them had poor, average, good and very good practice respectively with 87.50% gap between ongoing practice of examination of placenta and practice recommended by WHO. There was a statistically significant association between practice with in-service educational training, years of experience in the labour room and knowledge of AMTSL was related to practice of AMTSL among nursing personnel (r=0.35) at 0.05 level of significance.
Conclusions: It can be concluded that knowledge is associated with practice, increase in knowledge level increases practice.

Keywords: AMTSL, Gap, Knowledge, Nursing personnel, Practice, WHO

INTRODUCTION

Labour refers to the series of events that occur within the genital organs to expel the viable products of conception (foetus, placenta, and membranes) from the womb through the vagina into the outside world.[1] The Third Stage of Labour starts with the complete delivery of the foetus and ends with the complete delivery of the placenta and membranes. This stage needs to be closely monitored because excessive bleeding, also known as postpartum haemorrhage (PPH) and even death may occur if not treated properly.[2] There are two approaches to manage the third stage of labour: expectant management and active management of third stage of labour (AMTSL).[3] Active management of the third stage of labour (AMTSL) involves the administration of uterotonic drugs, which reduces the risk of PPH by 40%, controlled cord traction (CCT), which minimises PPH by almost 50% and regular uterine massage every 15 minutes for the first two hours after delivery.[4]

Active management of third stage of labour (AMTSL) is recommended by the World Health Organization (WHO), the International Federation of Obstetricians and Gynecologists (FIGO) and the International Confederation of Midwives (ICM) for all vaginal,

singleton births. AMTSL effectively reduces the incidence of PPH, the need for blood transfusion, and the use of therapeutic uterotonics during the third stage of labour and/or within the first 24 hours after birth.[5]

A study carried out in Tanzania in 2022 by Muyanga and Angelina revealed that only 50.3% of healthcare providers had good knowledge, and only 45% had adequate skills in active management of third stage of labour.[6] A study conducted by a group of researchers to evaluate the level of knowledge and practice of active management of third stage of labour among nurses working in selected hospitals in Kashmir revealed 36.7% of nurses had good knowledge, 50.0% had average knowledge, and 13.3% had poor knowledge.[7] A study conducted by Batool et al among nurses in Punjab, 2021, revealed that the majority of nurses had satisfactory practice, i.e. 73.75%, while 26.25% had unsatisfactory practice regarding the active management of the third stage of labour.[8] A study conducted by Saha in West Bengal showed that there was a 42.19% gap in the practice of administration of uterotonics, a 26.82% gap in the practice of controlled cord traction, and a maximum 69.85% gap in the practice of uterine massage, between the ongoing practices of AMTSL protocol and the practices recommended by WHO.[9]

Objectives

The objectives of the current study were to assess the knowledge regarding active management of third stage of labour (AMTSL) among nursing personnel, to assess the ongoing practice of active management of third stage of labour (AMTSL) by nursing personnel and to find out the gap between the ongoing practice of active management of third stage of labour (AMTSL) by nursing personnel and the practice recommended by WHO.

METHODS

Research approach and design

In order to achieve the desired objectives in this study quantitative research approach was adopted. In this study, a descriptive research design was adopted.

Study location, duration and population

The location of the current study was selected hospitals in West Bengal. The study duration was 1 month. Data were collected from February 2024 to march 2024. The study population consisted of nursing personnel working in labour rooms of selected hospitals in West Bengal.

Sample size, sampling techniques and sample inclusion criteria

In this study, the sample size was 48, and a purposive sampling technique was adopted. Nursing personnel who were available and present during the data collection period, with a minimum qualification of diploma in nursing, were included in the study.

Nursing personnel who were not willing to participate were excluded from the study.

Variables

Research variables were knowledge of nursing personnel regarding active management of third stage of labour (AMTSL) and practice of active management of third stage of labour (AMTSL) as per the WHO protocol by nursing personnel working in the labour room. Demographic variables were age, professional qualification, in-service educational training on active management of third stage of labour (AMTSL), total duration of service and years of experience in the labour room of nursing personnel.

Tools and techniques of data collection

Tool I

A semi-structured interview schedule was used to collect demographic data through interviewing. It consisted of 5 items, including age, professional qualification, in-service educational training on active management of third stage of labour (AMTSL), total duration of service, and years of experience in the labour room.

Tool II

A structured knowledge interview schedule was used to assess the knowledge of nursing personnel regarding active management of third stage of labour through interviewing. It contained a total of 18 items regarding stages of normal labour, third stage of labour, active management of third stage of labour and care after completion of third stage of labour.

Tool III

An observational checklist on AMTSL was used to assess the practice of nursing personnel regarding active management of third stage of labour through observation. This tool was composed of 8 major steps of active management of third stage of labour as per the WHO protocol, which are emotional support to the mother and family, preparation of the uterotonic drug, administration of the uterotonic drug, controlled cord traction, uterine massage, examination of the birth canal, examination of the placenta and immediate postpartum care.

Under these major steps, there were a total of 45 sub-steps. Each nursing personnel was observed three (3) times while conducting singleton, non-instrumental vaginal deliveries and the mean score was considered as the practice score of nursing personnel for accuracy and precision of data.

Statistical analysis

Descriptive statistics were used to find the frequency, percentage, range, mean, median, standard deviation and normal distribution of data of all the variables of the study. The statistical tools used to compute the data were MS Excel 07 and IBM SPSS-N-23. The reliability for the tool was calculated with statistical reliability techniques such as inter-rater and split-half methods.

RESULTS

54.17% of nursing personnel belonged to the age group between 25-30 years, 81.25% of nursing personnel passed G.N.M, 91.67% of nursing personnel had in-service educational training on active management of third stage of labour (AMTSL), 60.42% had a total duration of service of 5 years and more and 52.08% of nursing personnel had between 1-5 years of experience in labour room (Table 1).

6.25% of nursing personnel had excellent knowledge, 37.50% of nursing personnel had very good knowledge, 29.17% had good knowledge, and 27.08% had poor knowledge regarding active management of third stage of labour (AMTSL) (Table 2).

Table 1: Frequency and percentage distribution of nursing personnel according to their demographic characteristics (n=48).

Variables	Frequency	Percentage
Age (in years)		
≤25	06	12.50
26-30	26	54.17
31-35	12	25
36-40	03	6.25
≥41	01	2.08
Professional qualification		
GNM	39	81.25
B.Sc.	04	8.33
Post basic B.Sc. nursing	05	10.42
In-service educational training		
Yes	44	91.67
No	04	8.33
Total duration of service (in years)		
<5	19	39.58
≥5	29	60.42
Years of experience in labour room		
<1	10	20.83
1 to 5	25	52.08
6-10	11	22.92
>10	2	4.17

Table 2: Frequency and percentage distribution of knowledge scores among nursing personnel regarding active management of third stage of labour (AMTSL).

Knowledge level	Score (%)	Frequency	Percentage
Excellent	≥14.4 (≥80)	3	6.25
Very good	12.6-14.22 (70-79)	18	37.50
Good	10.8-12.42 (60-69)	14	29.17
Poor	<10.8 (<60)	13	27.08

Table 3: Area-wise range, mean, mean percentage, median and SD of knowledge scores of nursing personnel regarding active management of third stage of labour (AMTSL).

Area of knowledge	Maximum score	Range	Mean	Mean %	Median	SD	Rank
Stages of normal labour	1	0-1	0.58	58	1	0.5	3
Third stage of labour	4	1-4	2.35	58.75	2	1.08	2
Active management of third stage of labour	12	6-11	8.21	68.41	8	1.428	1
Care after completion of third stage labour	1	0-1	0.77	77	1	0.501	4

Table 4: Frequency and percentage distribution of practice score of nursing personnel regarding active management of third stage of labour (AMTSL).

Practice level	Scores	Frequency	Percentage
Poor (≤ 1st Quartile)	≤21.95	11	22.92
Average (>1st Quartile-2nd Quartile)	>21.95-23.99	16	33.33
Good (>2nd Quartile-3rd Quartile)	>23.99-25.74	8	16.67
Very Good (>3rd Quartile)	>25.74	11	27.08

Table 5: Gap between the ongoing practice of nursing personnel regarding active management of third stage of labour and practice recommended by WHO.

Area	Maximum score	Obtained score range	Mean	Mean %	Median	SD	Gap*	Rank
Emotional support	2	0-2	0.37	18.50	0	0.62	81.50	3
Preparation	5	1.66-3.66	2.49	49.80	2.33	0.55	50.20	5
Administration of uterotonics	2	0-2	0.94	47.00	1	0.36	53.00	4
Controlled cord traction	20	9.33-18.33	14.48	72.40	14	1.86	27.60	7
Uterine massage	5	0-3	0.89	17.80	0.66	0.95	82.20	2
Examination of birth canal	4	3-4	3.87	96.75	4	0.26	3.25	8
Examining the placenta	2	0-2	0.25	12.50	0	0.67	87.50	1
Immediate postpartum care	5	2-3	2.96	59.20	3	0.16	40.80	6

*Gap- Mean % difference, Less the rank more the gap.

Table 6: Chi-square value showing the association between the practice score of nursing personnel regarding Active Management of Third Stage of Labour (AMTSL) with selected demographic variables.

Demographic variables	Practice score		χ^2	P value
	<Median	≥Median		
Age (in years)				
<30	15	14	3.05	0.08
≥30	5	14		
Professional qualification				
GNM	18	21	1.72	0.18
Post basic and B.Sc. nursing	2	7		
In-service educational training				
Yes	16	28	6.10	0.01*
No	4	0		
Years of experience in labour room				
≤5	18	17	5.066	0.02*
>5	2	11		

#: Fishers' Exact Test was performed for cells with expected frequency value <5. Yate's correction was done for cells with expected frequency value between 5-10. *Significant.

Table 7: Correlation coefficient between knowledge and practice score of nursing personnel regarding active management of third stage of labour (AMTSL).

Variable	Mean	"r" value	"t" value	P value
Knowledge score	11.92			
Versus		0.35	2.53	0.014*
Practice score	24.02			

*Significant

In the area of active management of third stage of labour obtained scores ranged from 6-11 with a mean value of 8.21, median value was 8 with an SD of 1.27 and ranked as 1st. In the area of care after completion of the third stage of labour, obtained score in this area ranged from 0-1. The mean value of the obtained score was 0.77, median value was 1, with an SD of 0.42 and ranked as 4th. (Table 3)

22.92% of nursing personnel had poor practice levels, 33.33% of them had average practice levels, 16.67% of them had good practice levels, and 27.08% nursing personnel had very good practice levels (Table 4).

It was found that there was 81.50% gap in giving emotional support to mother, 50.20% gap in preparation, 53.00% gap in administration of uterotonics, 27.60% gap in controlled cord traction, 82.20% gap in giving uterine massage, 3.25% gap in examination of birth canal, 87.50% gap found in the examination of the placenta and 40.80% gap in immediate postpartum care (Table 5).

The chi-square test of association between practice and selected socio-demographic characteristics, which was found to be statistically significant at 0.05 level of significance (in-service educational training and years of experience in labour room) as the calculated value of chi-

square is higher than the table value of chi-square at 0.05 level of significance (Table 6).

The calculated correlation coefficient between knowledge score and practice score was 0.35, and the t-value was 2.53, which was significant at a 0.05 level of significance. From the above data, it can be interpreted that there is a moderate positive correlation between the knowledge score and practice score of nursing personnel, which means an increase in knowledge level also increases the practice score. From the p value, it can be said that the obtained relationship is a true relationship, not by chance. (Table 7).

DISCUSSION

The study found that 6.25% of nursing personnel had excellent knowledge, 37.5% had very good knowledge, 29.17% had good knowledge, and 27.08% had poor knowledge.

The current study's findings are partially supported by Yaseen et al research on active management of third stage of labour among nurses in Kashmir, which found that 36.7% of nurses had good knowledge, 50.0% had average knowledge, and 13.3% had poor knowledge, with a mean knowledge score of 62.8%.[7]

The findings of the current study revealed that 22.92% of nursing personnel had poor practice, 33.33% of them had average, 16.67% of them had good practice, and 27.08% of nursing personnel had very good practice.

A study by Batool et al assessed the knowledge and practice of active management of third stage of labour among nurses in Punjab. Results showed that 73.75% had satisfactory practices, while 26.25% had unsatisfactory ones.[8] Therefore, the findings of the current study are not supported by this research.

The findings of the current study showed that there was 87.50% gap found in the area of examination of the placenta, 53.00% gap found in administration of uterotonic drugs, 27.60% gap found in controlled cord traction and 82.20% gap found in uterine massage.

The findings of the current study are partially supported by a study conducted by Saha S in an evaluative survey design to assess the practice of the active management of third stage of labour (AMTSL) protocol given by WHO. The study result revealed that there was a 42.19% gap present in the practice of administration of uterotonics; a 26.82% gap present in the practice of controlled cord traction; and a maximum 69.85% gap present in the practice of uterine massage.[9]

The findings of the current study showed that there was a significant association between practice scores with in-service educational training and years of experience in the labour room of nursing personnel at 0.05 level of significance.

The findings of the current study are partially supported by a study conducted by Molla et al to assess practice and associated factors among obstetric care providers. The study result revealed practice of active management of third stage of labour is associated with work experience, knowledge, presence of assistance.[10]

The findings of the current study showed there was a moderate significant positive correlation between the knowledge scores and practice scores of nursing personnel with an "r" value of 0.35.

Bhutia et al conducted a descriptive correlational research study in 2019 to evaluate the knowledge and practice of active management of third stage of labour (AMTSL) among 40 nursing students in selected hospitals in Gangtok, Sikkim. The study found that there was a positive correlation (r=0.359) between knowledge and practice of AMTSL among nursing students. So, the findings of the current study are fully supported by this study.[11]

Limitation of the study was that the practice done by the nursing personnel in the labour room may be influenced by the Hawthorne effect, as informed consent was taken before observation, which may affect their actual performance and lead to bias in data and due to inadequate time, more samples could not be taken, which may limit the generalizability of the findings.

CONCLUSION

From the present study, it can be concluded that nursing personnel working in the labour room had very good knowledge regarding active management of third stage of labour (AMTSL) with an average practice level. There was a major gap between the ongoing practice and with practice recommended by WHO in the examination of the placenta. The practice of nursing personnel regarding active management of third stage of labour (AMTSL) was associated with in-service educational training on Active management of third stage of labour (AMTSL) and years of experience in the labour room. There was a significant moderate positive correlation between the knowledge and practice of nursing personnel regarding active management of third stage of labour (AMTSL). The increased knowledge level increases the practice level of active management of third stage of labour (AMTSL) among nursing personnel.

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