A study to assess the knowledge and practice regarding aseptic technique adopted during labour among staff nurses

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Abstract

Background: Aseptic technique is a set of specific practices and procedures performed control condition with the goal of minimizing sepsis. Pathogens may introduce infection through contact with the environment, personal or equipment.

Objectives: To assess the knowledge and practice on aseptic technique adopted during labour among staff nurses and also compare existing knowledge and practice.

Methods: It is a non-experimental descriptive study carried out on the staff nurses working in labour rooms of the hospitals of Sikar, Rajasthan. A study was conducted during the year of 2018 among 50 staff nurses working in labour rooms of the hospitals, who were selected by using non-probability two stage cluster sampling technique. A self-administered structured questionnaire and an observation checklist were used for data collection.

Result: The findings indicated that majority of 37 (74%) staff nurses had fair knowledge and 36 (72%) had fair attitude regarding aseptic technique adopted during labour. The mean of knowledge and practice test (14.42 & 19.04) and SD of knowledge and practice test was (3.62 & 4.65). There was significant association between the knowledge and practice. Conclusion: The study concluded that the good knowledge and practice regarding aseptic technique adopted during labour is the key issue for better maternal health.

Key words- Aseptic technique, Labour, Staff nurse and Labour room.

Introduction

The concept of asepsis can be applied in any clinical setting. Typical situation that call for aseptic measures include surgery, insertion of intravenous line, urinary catheter and labour room setting [1]. Strict asepsis during the delivery are practices “no touch technique” which is any instrument which is to be inserted in the cervical canal much not touch any non-sterile object or surface prior to insertion. Sterilization or high level disinfection of instrument with meticulous attention should be followed in the labour rooms [2].

Aseptic techniques are employed to maximize and maintain asepsis, the absence of pathogenic organisms, in the clinical setting. A key element requiring careful attention is equipment or supplies Medical equipment can be sterilize by chemical, treatment, radiation and gas or heat.

Personal can take steps to ensure sterility by assessing that sterile packages are dry and intact and checking sterility indicators such as dates or colored tape that changes color when sterile [3].

The universal precaution to control infection which applied by all medical and para-medical staffs include the basic elements such as hand washing thoroughly with soap and water before caring out the procedure, immediately. In case autoclaving is not possible, the instrument must be fully immersed in water in a covered container and boiled for at least 20 minutes. Infection Control is a most important field to concern in labor and delivery room as the newborn babies takes time to adapt to their surroundings, after immediately coming out of their mother womb. Neonatal infections may be acquired by trans-placental transfer or during delivery in birth canal or other means during post-partum. Infection control is the policies and procedures used to reduce the infection transmission risk especially in hospitals and health care settings.
Neonates and children are more prone to acquired infections, precautionary measures has to be taken to reduce the chances of getting infection. Conducting deliveries in unhygienic places or not properly disinfected labor rooms increases the risk of spreading infections form mother to baby or from one person to another person.

If health care personnel and health care units authorities are not adhere to infection prevention protocols in labor room then maternal and neonatal infections rises which in turn leads to increase maternal and infant mortality rate, also economic loss to community [2].

A protective and aseptic environment in the hospital unit is very essential as a prerequisite particularly services provided in the labour room. There are many studies conducted in India and other countries on this issue and findings show that many staff nurse’s fails to perform good practice and have poor knowledge on aseptic technique in labour room so researcher select the present study for assessing knowledge, practice and compare both on aseptic technique in labour room and further analysis of study.

Material and Methods

Place of study: It study carried out in labour rooms of the hospitals of Sikar, Rajasthan during the year of 2018.

Type of study: It is a non-experimental descriptive study.

Sample and sampling methods: The study was conducted among 50 staff nurses working in labour rooms of the hospitals, who were selected by using non-probability two stage cluster sampling technique.

Results

The findings are summarized as follows:

1. Majority of respondents 37 (74%) had fair knowledge, 4 (8%) had poor knowledge and only 9 (18%) had good knowledge on aseptic technique adopted during labour. Mean knowledge score (mean=14.42) mean% (51.43%) and standard deviation (SD=3.62).

2. Majority of respondents 36 (72%) performed fair practice, 6 (12%) performed poor practice and only 8 (16%) performed good practice on aseptic technique adopted during labour. Mean attitude score obtained by the respondents was 57.29 % with SD of 4.41 in preparation before labour aspect, mean percentage obtained by the respondents was 47.33 % with SD of 2.51 in assisting the birth aspect, mean percentage obtained by the respondents was 50.4 % with SD of 3.19 in AMTSL aspect and overall mean percentage obtained by the respondents was 52.89 % with SD of 4.65 regarding the aseptic technique adopted during labour.

3. Findings shows that 8 % staff nurses had poor knowledge and 12 % staff nurses had poor practice regarding aseptic technique adopted during labour.
4. The study shows that there was significant association between the knowledge and practice. So null hypothesis is rejected and researcher accepts the research hypothesis at 0.05 level of significance.

**Table-1: Distribution of staff nurses by the level of knowledge**

<table>
<thead>
<tr>
<th>Level of Knowledge</th>
<th>Score</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Knowledge (≤ 33%)</td>
<td>≤ 9</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>Fair Knowledge (33 - 66%)</td>
<td>10 – 18</td>
<td>37</td>
<td>74%</td>
</tr>
<tr>
<td>Good Knowledge (Above 66 %)</td>
<td>&gt; 18</td>
<td>9</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>50</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Table-2: Aspect wise Practice score of staff nurses on aseptic technique adopted during labour**

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Max. Score</th>
<th>Mean</th>
<th>Median</th>
<th>Mean %</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice on aseptic technique adopted during preparation</td>
<td>17</td>
<td>9.74</td>
<td>10</td>
<td>57.29</td>
<td>4.41</td>
</tr>
<tr>
<td>Practice on aseptic technique adopted during Assisting the birth</td>
<td>9</td>
<td>4.26</td>
<td>4</td>
<td>47.33</td>
<td>2.15</td>
</tr>
<tr>
<td>Practice on aseptic technique adopted during AMTSL</td>
<td>10</td>
<td>5.04</td>
<td>5</td>
<td>50.4</td>
<td>3.19</td>
</tr>
<tr>
<td>Overall Practice on aseptic technique adopted during labour</td>
<td>36</td>
<td>19.04</td>
<td>19</td>
<td>52.89</td>
<td>4.65</td>
</tr>
</tbody>
</table>

**Figure-1: Distribution of staff nurses by the level of Practice**

**Discussion**

The present study is an effort to assess the knowledge, practice and comparison between these technique adopted in labour rooms of hospital among staff nurses. In order to achieve the objective of the study a non-experimental descriptive research design was adopted. 50 staff nurses were selected by using non-probability two stage cluster sampling technique, fulfilling the criteria of sample.

Finding of the present study revealed that majority of 37 (74%) staff nurses had fair knowledge, 4 (8%) had poor knowledge and 36 (72%) had fair attitude and 6 (12%) performed poor practice. Mean knowledge score (mean=14.42) mean % (51.43%) and standard deviation (SD=3.62) and mean attitude obtained by the respondents was 57.29 %.

The finding of present study supported by study conducted by Barkha Devi and Reshma Tamang on Knowledge and Practice of Aseptic Technique During Delivery Among Health Professionals in Selected Government hospitals of Sikkim and published in 2014. The findings of the study reveals that knowledge regarding Bio-medical waste management (87%), definition of asepsis, aseptic technique, infection (86%), aseptic technique in labour room (77%) and asepsis in stages of labour (59%) was found to be better whereas asepsis during delivery (57%) was found to be less. The knowledge regarding asepsis during delivery needs more emphasis [4]. The finding of present study supported by study conducted by Navjyot Singh, Manisha Rani et al., on Assessment of Knowledge of Staff Nurses Regarding Aseptic Technique, 68 staff
nurses selected by convenient sampling technique from selected hospital of Pilkuwa, Hapur. Findings of study showed that mean knowledge score of staff nurses was 13.13 with median score of 14. Maximum staff nurses i.e. 43 (63.24%) were having average knowledge whereas 25 (36.76%) having knowledge poor average, none of the staff nurse was having adequate knowledge regarding aseptic technique [5].

The finding of present study supported by study conducted by Jothi Bala (2009) on knowledge and practice of staff nurses regarding infection control in MCH area of selected hospitals, in Ludhiana, Punjab. A sample of 60 staff nurses were selected purposively. The final result depicted that staff nurses had efficient knowledge on infection control (80%) whereas level of practice were not appropriate to the standard [6].

The finding of present study supported by study conducted by Benita D, Vijayalakshmi et al., to evaluate the effectiveness of Infection Control Standards on Practice among Health Care Personnel Working in Labour Unit at selected hospitals, Nagercoil. 60 health care personnel were selected as samples using purposive sampling technique. Quantitative research approach with Pre-experimental one group pre test post test design was used to collect the data.

Data was collected by using observational checklist consisted of 4 components to assess the level of practice on infection control among the health care personnel working in labour unit. The findings of the study revealed that the mean pretest level of practice on infection control was 21.47 with standard deviation of 1.92 and mean post test level of practice on infection control was 43.73 with standard deviation of 2.02. The result revealed that there was a deficiency of practice and need to improve among health care personnel [7].

Dr. Shreenivas Shour1 and Dr. Suchitra R, Department of Obstetrics & Gynecology, Government Medical College, Ananthapuram, Andhra Pradesh conducted a study to assess the efficacy of infection control practices various factors were considered and analyzed before and after implementation of infection control policies and practices.

Various aspects observed were environmental surveillance reports, clinically suspected or confirmed infections of patients in labor, needle stick injuries incidence, puerperal infections rate, neonatal infections and hand hygiene compliance. These infection control indicator rates were collected and analyzed. Puerperal and Neonatal infections were noted as 39% and 34% before, 17% and 13% after introducing proper infection control guidelines. Hand hygiene compliance decreased from 26% to 8% after introducing mandatory hand hygiene guidelines. 37% and 74% were using PPE according to protocol before and after implementing protocols respectively. All health care personnel are required to adhere to standard precautions and infection control guidelines to avoid transmission of infections [8].

The finding of present study was supported by cross-sectional study conducted by Seyed Mehdi Tabatabaei, Fateme Behmanesh Pour et al., to investigate infection control program management and midwives’ practices in labor and delivery units. Data was collected from 88 midwives in four labor and delivery units in public hospitals in Zahedan, southeast Iran.

The evaluation scores for all aspects of infection control were suboptimal; infection control program management 38.1% to 71.4%, healthcare workers post-exposure measures 58.5% to 92.7%, medical waste management 73.9% to 87.0% and infection control related standard infrastructures and equipments 55.9% to 82.8%.

The midwives mean scores for attending infection control training courses and hand hygiene were less than 40% of the maximum score, but the mean scores for normal vaginal deliveries scrub, equipment and instruments hygiene practices were generally above 70%. The results of this study revealed a need for development of appropriate policies and protocols for infection control practices in labor and delivery units and also midwives training on clean delivery practices [9].

The finding of present study was supported by descriptive quasi-experimental research begin in 20th February to 26th May 2016 by Wafa A K Abbas, Muntahaa Rashaan, Faculty of Nursing, University of Babylon to assess hand hygiene practices of health care personnel in the delivery room at the middle Euphrates teaching hospitals and involve all midwives and physicians in the delivery room.

The study indicate that the overall evaluation for the health staff practices regarding hand hygiene is fair at Karbala, Al-Najaf, Babylon and Diwaniah with high difference in health staff practices regarding infection control precautions (hand hygiene). Also proved that Hand hygiene is the most important and effective
infection prevention and control measure to prevent the
spread of microorganisms causing HAIs and improving
hand hygiene is consider a vital intervention to promote
optimum patient safety in delivery room [10].

The finding of present study was supported by study
conducted by Nadia Abdalla & Afaf Salah Abed El-
Mohsen on Effectiveness of infection control standers
on practice among Health care Personnel working in
MCH centers at Quena Governorate, all nurses working
in four MCH center were included in the study include
nurses.

It included two tools and interviewing questioner to
assess socio demographic characteristics of the nurses
and nurses’ knowledge about universal precautions and
infection control precautions before, during and after
normal vaginal labor and observational checklist to
assess nurses’ performance related to application of
universal precautions before, during and after normal
vaginal delivery.

The scores of nurses' knowledge and performance
having Bachelor of Science in nursing were
significantly higher than those who having of nursing
Diploma. Study recommended that Periodic training
program should be provided to nurses at MCH centers
to update their knowledge and practices regarding
universal infection control precautions in labour room

The finding of present study was supported by a Cross-
sectional study conducted by Friday O, Edoja O et a l.,
for Assessment of infection control practices in
maternity units in Southern Nigeria, study consisting of
in-depth interviews with service providers, observation
of clinical practices and examination of medical
records. Data was collected from 63 health facilities of
primary, secondary and tertiary maternity care centers.

Three pre-tested tools were adapted to the local setting
and used to interview key informants in the health
facilities and to observe for practices and records
relating to infection control. Of the 63 health facilities,
68% (43) reported that they had infection control
procedures in place, while 33% (21) reported that they
had an ongoing programme for staff training on
infection control. A high proportion of the health
facilities reported that staffs routinely wash their hands
before and after sterile procedures, but only half of the
facilities were observed to have 24-h running water and
only two-thirds had soap and antiseptic solutions in
delivery and operating theatre areas. The results of this
study suggest the need for improved staff training on
infection control in maternity care facilities in Edo State
[12].

The finding of present study was supported by a study
conducted by Rajesh Mehta, Dileep V Mavalankar et.al.
to provide information on procedures and practices
related to infection control in labour and delivery units
in Gujarat state, India. Twenty health care facilities,
including private and public primary health centres and
referral hospitals, were sampled from two districts in
Gujarat state, India. Three pre-tested tools for
interviewing and for observation were used.

Data collection was based on existing infection control
guidelines for clean practices, clean equipment, clean
environment and availability of diagnostics and
treatment. Seventy percent of respondents said that
standard infection control procedures were followed,
but a written procedure was only available in 5% of
facilities.

Alcohol rubs were not used for hand cleaning and
surgical gloves were reused in over 70% of facilities,
especially for vaginal examinations in the labour room.
Most types of equipment and supplies were available
but a third of facilities did not have wash basins with
"hands-free" taps. Only 15% of facilities reported that
wiping of surfaces was done immediately after each
delivery in labour rooms. This study of current infection
control procedures and practices during labour and
delivery in health facilities in Gujarat revealed a need
for improved information systems, protocols and
procedures, and for training and research [13].

Conclusion

The study concluded that the good knowledge and
practice regarding aseptic technique adopted during
labour is the key issue for better maternal health.
Findings of present study revealed that knowledge and
practice regarding aseptic technique adopted during
labour was poor among at least 10% of staff nurses
working in labour rooms of hospitals.

Contribution by author-Dr. Ashok Yadav sir provided
us a continuous supervision and guidance at each and
every step throughout the study from selection of
problem statement to the final writing of this
manuscript. We both actively work in this study in
every step such as selection of problem statement,
searching of concerning literatures, data collection,
framing of manuscript, data analysis and discussion of
the findings.
What does this study add in existing knowledge: This study will be helpful for staff nurses to identify the various steps included in different stages of labour and enhance their existing knowledge on aseptic technique adopted during labour by self administered structured knowledge questionnaire.

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References


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