

## CURRENT TRENDS IN MIDWIFERY AND OBSTETRICAL NURSING

### Abstract

Current trends in midwifery & obstetrical nursing involves technological advances, increased cost of high-tech care, changing patterns of child birth, family centred care, role of fathers in child birth. In new trends to reduce the rate of maternal mortality which mainly focus on WHO near miss approach, maternal waiting room, Post-partum butterfly, The Vita HEAT during labour, Transvaginal bakri balloon etc. In new trends to reduce the rate of fetal and infant death were Wireless fetal monitoring using smart phone, noninvasive prenatal testing, vaginal seeding etc. In new trends to reduce preterm births Maternal progesterone supplementation, cervical length screening etc. In new innovations in obstetrics were Postpartum Delayed Umbilical Cord Clamping, Cell-Free DNA Genetic Screening, laboring in water, cord blood sampling etc. In new technology in gynecological nursing such as Robotic Gynecological Surgery, clear blue digital pregnancy test, Remote control contraceptive computer chip, Telemedicine etc. In new trends in education of maternal and newborn health nursing such as telecommunication, problem based learning, mind mapping etc which helps in improvement of quality care provided by the health care facilities.

**Keywords:** new trends, vita heat, vaginal seeding, telemedicine etc.

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## I. INTRODUCTION

Along with changes in social structure, family structure, rising health care costs, advancements in medical technology, and evolving disease patterns, the maternal and child population is always shifting. Current trends in midwifery & obstetrical nursing involves technological advances, increased cost of high-tech care, changing patterns of child birth, family centred care, role of fathers in child birth. Families are smaller in size than in previous decades. Children are more likely to be born and raised in non-traditional groupings such as:

- Single parent families are typically headed by the mother and might stem from divorce or unwed parenthood.
- Blended families, which are created when two adults who have had children together before get married.
- More and more mothers are working outside the home.
- Abuse is more prevalent than ever.
- Families now prioritise health more than they did in the past.

**1. Economic issues and trends:** The cost of having children and raising them is still rising more quickly than family income. The average family now has fewer children as a result of rising costs and an increase in the number of women working outside the home. More women than ever before who are childbearing age work outside the home. They typically work out of necessity for money. Even more so than couples, single parents frequently struggle to keep up with demands.

**2. Trends related to technology:** Every area of our lives has changed as a result of technological advancement. It has an impact on everyone of us individually, our families, society, and even how we approach having children. Technology enables the diagnosis and treatment of severe diseases and abnormalities. Particular areas where technological advancements have an impact on childbearing include worries about fertility, genetic counselling, and antepartum or intrapartum diagnostic testing.

- **Fertility concerns:** In the past, conception was a somewhat random event; today conception can be much better controlled. Pregnancies can be planned, infertile women or men can become parents and unwanted pregnancies can be prevented or terminated. Technology can help women who are unable to conceive have a child. Procedures such as in vitro fertilization, artificial insemination and surrogate mother are current options and new techniques under study.
- **Genetic counselling:** Genetic counselling enables to look at the genetic structure of individuals & predict the likelihood of occurrence of gene related disorders. Before genetic testing was available, a couple essentially took a risk each time pregnancy occurred.
- **Diagnostic testing:** The number and types of diagnostic tests used in medicine and especially in maternity care have grown dramatically as ultrasound examination. The technology helps in early diagnosis and treatment of problems.

**3. Demographic issues and trends:** The distribution of the population changes as large cities offer the most opportunity and convenience. As a result, they draw a larger population, and the majority of maternity services are located in urban regions.

- **Availability of maternal care:** Many hospitals in urban areas are staffed and prepared to treat pregnant women at high risk. More treatment is available for childbearing women in modern hospitals than in the past. Today, more healthcare institutions offer some type of family-centered treatment and have birthing rooms that promote a more supportive, family-friendly approach to childbirth.
- **Increased cultural diversity:** New population introduces new concerns in relation to indigenous infection agents, uncommon diseases & unfamiliar disorders. New cultures introduce unique beliefs and practices and child birth.
- **Vital statistics:** Some statistics have the highest level of significance for identifying trends that will have impact on maternity nursing. The statistics include birth rates and morbidity rates.
  - **Maternal mortality:** there is reduction in maternal mortality rates due to improvement in medical management, early detection of disorders & prevention of complications and better hospital facilities.
  - **Birth rates:** in India the birth rate is increasing. Birth rates also vary according to age and racial groups.
  - **Number of low birth weight infants:** the number of LBW babies has not decreased.
  - **Newborn mortality rates:** the number of infant deaths per 1,000 live births under one year of age. The emphasis must turn from advanced medical therapies to expanding access to preventive care in order to change the death rate.

#### 4. Trends in health care settings:

- **Managed care:** It is a method of delivering healthcare with a focus on controlling costs through careful observation. Prior to managed care, health insurance covered each operation or item's cost independently for the client. Under managed care, the agency is compensated financially for providing client care.
- **Alternative setting:** The alternative approach gives families more control over the birthing process and birth environment options that are not offered in hospitals. It also gives nurse practitioners an increased role and increases nursing responsibility for assessment and professional judgement. This supports a comprehensive, family-centered approach to the care of pregnant women and young children.
- **Community based care:** A shift in setting care institution to the home has been occurring. It is an organisation that is outsourcing the role of the Department of Children and Families in caring for and offering services to neglected and abused children. Even child bearing women at risk are cared for in the home.
- **Shortening hospital stay:** After a straightforward delivery, the standard hospital stay for women and newborns is now two days or fewer. Hospitalization for a little period need thorough health education from maternity nurses.

5. **Patient engagement, self-care, and attention to healthcare trends:** Currently, consumers expect information and actively participate in health care providers' recommendations rather than passively accepting and following them. Pregnant patients are often in good health, thus their care is concentrated on promoting health and wellness. The opportunity to discuss issues including stress management, smoking cessation, diet, education, and alcohol and drug treatment is provided by visits to healthcare providers.

#### 6. Other trends

- Increase in high risk pregnancies: Because there are more high-risk pregnancies, more women are at risk for negative pregnancy outcomes. The rise in high-risk cases is primarily attributable to changes in lifestyle, such as being sedentary, smoking, drinking alcohol, abusing drugs, eating unhealthily, not exercising, etc. Another key factor in high-risk pregnancies is age; primigravida who are under the age of 17 or above the age of 35 have a higher chance of problems. Gestational hypertension and pregnancy-related diabetes are the two major, usually mentioned maternal risk factors.
  - Premature birth, low birth weight (LBW) newborns, congenital abnormalities, learning difficulties, and baby withdrawal symptoms are all increased by drug use during pregnancy.
  - Consumption of alcohol during pregnancy is associated with miscarriage, mental retardation, LBW babies etc.
- **High cost of health care:** Health care is one of the fastest growing sectors. Due to use of advanced high cost technology for patient treatment, hike in demographic rate, pandemic issue, cost of health care service provider etc. the health care cost is now-a-days increasing.
- **Limited access to care:** Limited availability of health care resources, inability to pay for the health care services are the most significant barrier to access the medical care and that may increase the poor health outcome. Lack of transportation and dependent care are other barriers which limit the access to health care.
- **Family centered care:** It is predicated on the knowledge that the patient's family serves as their major source of care and support and influences their decision-making. A set of values, attitudes, and methods for providing services to families of special-needs children make up family-centered care. Here, the focus is on providing expert medical treatment that promotes family harmony while protecting the mother's physical safety during the prenatal, intranatal, and postnatal periods.
- **Labor, delivery, recovery and post-partum care (LDRP):** It is the maternity unit for family centered care. In LDRP, also known as single room maternity care, a woman in labour and her family go through the typical stages of childbirth in one room that resembles a home instead of the traditional maternity ward. In it, the mother gives birth, gives birth, and recovers all in the same room and bed. The advantage of the LDRP is that it offers comprehensive care in a single location.
- **Mother and child couplet care:** From the time of the baby's birth until the newborn is discharged from the hospital, the mother and the baby are cared for in a couplet. Here, the postpartum mother and her newborn are cared for together by a single nurse. It promotes family harmony by concentrating on and adapting to the mother's, the family's, and the newborn's physical and psychological needs. It gives the new mother a secure, cosy way to independently comfort, soothe, and care for their baby.

## II. NEW TRENDS TO REDUCE THE RATE OF MATERNAL MORTALITY

1. **The WHO near-miss approach:** Maternal near miss is the term used to describe a woman who escapes potentially fatal situations when pregnant, during an abortion, in the postpartum period, or within 42 days of a pregnancy termination. So the review process is as follows in accordance with the WHO near-miss approach:

**Identification of cases using the criterion**



**Putting tools to work**



**Reviewing cases at the facility and taking local corrective measures**



**Feeding the data**



**District-level case review**



**Corrective actions carried out at various levels (institution, district, state)**

2. **Maternal waiting home:** These are intended to facilitate access to obstetric treatment after 37 completed weeks of pregnancy for high-risk expectant mothers and expectant moms who reside distant from the health facility. It makes it easier for those who have poor transportation or who have delivery services significantly restrict their access to competent care during pregnancy and after delivery. When the mother comes to hospital if there is any delay then she needs waiting home. So the three delays are
  - Delay in getting the right medical care at right time
  - Delay in getting to a facility that's appropriate for the case
  - Delay in access to necessary care
3. **Post-partum butterfly:** It is a straightforward, inexpensive device made to compress the uterus to treat PPH. Compared to conventional Bimanual compression, it requires less effort and is less intrusive.
4. **Transvaginal bakri balloon replacement:** It is a non-surgical option in which an intrauterine device used for temporary control or reduction of postpartum haemorrhage when conservative treatment for uterine bleeding is warranted. Here the balloon is inserted into the cavity of the uterus under ultrasound guidance.
5. **The Vita HEAT during labour:** The Vita HEAT is a portable system that moves with the woman throughout entire labour and delivery process. It is portable, under-body system delivers warmth and helps improve women satisfaction & comfort. Also use as non-pharmacology pain reliever.
6. **Virtual reality (VR) relieve Labor Pains:** One of the most recent non-pharmacological methods of managing labour pain is virtual reality (VR). A new technology called virtual reality (VR) can assist patients in learning pain management techniques including breathing exercises, meditation, and visualisation that will helps to distract the brain from receiving pain signals.
7. **Massaging Bra:** It is a hand-free pumping bra that simulates compression massage, a method that helps to maintain and enhance milk production while also making pumping simpler. Massaging Bra helps to move more milk into breast pump. The milk is collected in a specially designed bag that fits inside the unit. Using the wireless, rechargeable remote, it is utilised to activate milk glands and facilitate letdown. It is a powered bra that has a

built-in massager. It used to prevent blocked milk ducts. It is one of strategies to relief breast engorgement.

### III. NEW TRENDS TO REDUCE THE RATE OF FETAL AND INFANT DEATH

- 1. Wireless fetal monitoring using smart phone:** The special type of smart phone is used to record FHR continuously. Here, a microphone incorporated into the smartphone was used to receive the Doppler ultrasound signal. Using an application programme, the phone then processed the input Doppler data to estimate FHR.
- 2. Noninvasive Prenatal Testing (NIPT):** It's a technique for estimating the likelihood that a foetus will be born with a certain genetic abnormality, such as trisomy 21 (Down syndrome), trisomy 18 (Edwards syndrome), trisomy 13 (Patau syndrome), or monosomy X (Turner syndrome), among others. This testing analyses small fragments of DNA circulating in blood.
- 3. Vaginal seeding:** it is also called microbirthing. It refers to the method of transferring the vaginal normal flora to the mouth, nose, or skin of the newborn infant who has undergone a caesarean section by inoculating a cotton gauze or a cotton swab with vaginal secretions. This process transfers vaginal microbes to the baby helps to establish the baby's own immunity to fight against diseases. It will helpful to reduce the risk of developing allergy, asthma, autoimmune disorders.

### IV. NEW TRENDS TO REDUCE PRETERM BIRTHS:

- 1. Maternal progesterone supplementation:** vaginal progesterone administration is currently the best practice to reduce preterm births but it is mostly effective in women who have short cervix.
- 2. Cerclage:** It is the process to close the cervix during pregnancy to prevent preterm birth due to cervical incompetent.
- 3. Cervical length screening:** It is the procedure to measure the length of cervix during mid trimester using transvaginal ultrasound. If the length of cervix is <25mm then the risk of preterm birth is more.

### V. NEW INNOVATIONS IN OBSTETRICS

- 1. Postpartum delayed umbilical cord clamping:** Do not cut the cord right away after the baby is delivered; instead, wait a few minutes before doing so. Delaying the cord clipping will allow the infant to receive more blood, boosting iron reserves in the first few months of life and helping to raise the baby's haemoglobin level at birth. It contributes to improved developmental outcomes in the future.
- 2. Labouring in water:** Water birth and labour both encourage an easier delivery of the baby by promoting maternal relaxation, lowering analgesic needs, and increasing maternal comfort. In women who are carrying healthy, straightforward pregnancies, submersion in water can help reduce the need for an epidural or other painkillers. It will reduce episiotomy

tearing. When pushing starts, it's preferable to leave the tub because doing so hasn't been thoroughly researched and there have been instances of major difficulties.

- 3. Cell-Free DNA genetic screening:** It is a test that can determine if a pregnant woman has higher risk of having a fetus with Down syndrome, abnormality in sex chromosome, trisomy 18, trisomy 13 etc. The most recent method of checking for genetic issues in the unborn child is cell-free DNA testing. In order to ascertain whether there may be a problem with the pregnancy, this straightforward blood test is carried out after 10 weeks of pregnancy.
- 4. Effective anaesthesia during labour:** The introduction of combined spinal– epidural anaesthesia (CSEA) offers better results than the epidural type. CSEA also decrease the anaesthetic failure rate in compare to epidural type.
- 5. Cord blood sampling:** After delivery of baby the cord blood sample is collected from the umbilical cord in a specimen collection container for the diagnosis of fetal anemia, other blood related problems such as Rh incompatibility, diagnose any genetical abnormalities etc.

## VI. NEW TECHNOLOGY IN GYNECOLOGICAL NURSING

- 1. Robotic gynecological surgery:** Robotics is a new field in surgery especially in complex operations where movement is critical. It will help to taking a patient's vitals, medical history and updating medical records. A successful robotic operation depends heavily on the robotic nurse. Each member of the robotic nursing team, including the coordinator, scrub nurse, and circulation nurse, has a specific role to assure the highest level of patient safety and robotic surgical effectiveness. The robotic nurse should be provided with well-organized training sessions in order to be well-prepared. Hysterectomy and tubal ligations, fibroid tumour removal and myomectomy, ovarian cyst and tumour removal, infertility surgery, endometriosis surgery, genital prolapse surgery, etc. are all covered by robotic surgery.
- 2. Clearblue digital pregnancy test:** The Clearblue Digital Pregnancy Test is a excellent cutting-edge, very accurate and highly accurate digital pregnancy test. It is more than 99% accurate at detecting fertility. It will give double confirmation of the result in word i.e. Pregnant/Non-pregnant within 3minutes & the unique smart sensor gives a clear result. During pregnancy the hCG hormone level is more in maternal urine so the clear blue digital pregnancy test will helps to detect the tiny amounts of this hormone from urine.
- 3. Remote control contraceptive computer chip:** There is now a remote-controllable contraceptive computer chip available. Levonorgestrel is released into the body daily for 16 years by a chip that is implanted under a woman's skin. The device can be halted at any moment by utilising a wireless remote control. It has a long-lasting birth control effect and is safe and effective.
- 4. Telemedicine / Telenursing:** When the patient and practitioner are not physically present with one another, it refers to the practise of providing patients with care remotely. It allows the health care professionals to evaluate & treat patients at a distance using

telecommunication technology. The distribution of health services via electronic information and telecommunication during high-risk pregnancy including:

- **Electronic medical record (EMR) consultations:** A healthcare organization's authorised clinicians and personnel develop, compile, manage, and review this electronic record of a patient's medical history.
- **Genetic counselling:** To assist them in understanding & adjusting to the medical, psychological, & familial implications of genetic contribution to disease, it is the process of researching individuals & families with or at risk of genetic disorders.
- **Video conferencing:** A face-to-face encounter is sparked by the live video connection made possible by the internet between two or more faraway parties.
- **Virtual rounding:** It is the process in which the physicians visits a patient via videoconferencing ad able to treat their disease.

## VII. NEW TRENDS IN EDUCATION OF MATERNAL AND NEWBORN HEALTH NURSING

1. **Tele-communication:** It is the process of sending, emitting, and receiving signals, writing, pictures, and sounds of any kind using wires, radio waves, optical systems, and other electromagnetic systems. Through that an important information can be send to the distance area that will help in better communication process. It will help in patient care of chronic illness in a improves way.
2. **Problem based learning:** It is a form of instruction that promotes critical thinking, group interaction, and the practical application of theory. In which the students are subjected to an open-ended problem and they were allowed to work on it and found the solution by their own way, so that will helps to increase the interest towards learning, drives the motivation and problem solving approach.
3. **Mind mapping:** It is the process that will able to develop an understanding of critical thinking by using a collaborative team approach. It involves writing a core theme and think about the new related ideas which are radiated from that central theme and also relate each ideas with the core theme and finally represent all in a diagram.
4. **Training with Simulator Mannequins in the Laboratories:** For the purposes of nursing training, education, and assessment, learning with simulator mannequins combines interactive simulations of real-world clinical events. The simulation standardises scenarios, encourages critical thought, permits patient care oversight, offers feedback, and aids students in assimilating knowledge and experience. The mannequin is a life like patient simulator used to represent real world nursing scenario. Through that the nursing care practice teaching should be given to students.

## VIII. CONCLUSION

Due to changing population trends, demand in health care facilities new trends should be important in maternal and child health nursing field to provide quality care and to reduce the maternal and infant mortality and morbidity rates. It should be important for the nurses to know the new trends in obstetric and gynecological nursing field which will help them better during the practical settings in actual delivery of care to the needed one.

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