Assessment of the Knowledge, Attitudes, and Practices of Auxiliary Nurse Midwives Regarding the Use of Digital Solutions for Antenatal Care Data in Udaipur

Introduction: : Antenatal care is an important part of mother and child healthcare, as it includes key services for pregnancy monitoring and management. Regular antenatal visits enable healthcare providers to identify and manage any issues, monitor the health of the mother and fetus, and provide early interventions to ensure a successful pregnancy. In recent years, there has been a significant interest in incorporating digital solutions into antenatal care services, since these technologies have the potential to improve data management, care coordination, and, ultimately, improved maternal healthcare quality.

The utilization of digital tools, including mobile applications, electronic medical records, has the potential to improve the collection, storage, and use of antenatal care data. These systems can help healthcare providers capture individual information more accurately and efficiently, share data in real time, and deliver advanced insights to help them make clinical decisions. By embracing digital technologies, antenatal care services can become simplified, data-driven, and flexible to pregnant women's needs.

Understanding the knowledge, attitudes, and behaviors of Auxiliary Nurse Midwives (ANMs) on the use of digital technologies for antenatal care data management is fundamental in Udaipur, a city in the Indian state of Rajasthan. ANMs serve an important role in providing primary healthcare services, particularly prenatal care, to rural and semi-urban communities. Their opinions and knowledge can shed light on the opportunities, challenges, and constraints to the use of digital tools in this setting.

The purpose of this study is to analyse the knowledge, attitudes, and practices of auxiliary nurse midwives in Udaipur about the usage of digital technologies for antenatal care data management.

Research Question

What is the knowledge, attitude, and practice of ANM about the use of digital solutions for ANC data collection?

Objectives:

- To assess the level of knowledge among ANMs on digital solutions for antenatal care data management.
- To explore the attitudes of ANMs towards the adoption of digital solutions in their practices.

- To evaluate the current practices of ANMs in utilizing digital solutions for antenatal care data management.

Hypothesis

According to the alternative hypotheses, ANMs exhibit significant variation in their knowledge, practices, and attitudes about ANC data due to factors like age, education, years of experience, and other determinants.

According to the null hypothesis, there is no significant variation in the knowledge, practices, and attitudes of ANMs about ANC data based on age, education, years of experience, and other determining factors.

Materials and Methods

Study Design: Descriptive cross-sectional study

Duration of Study The duration of the study spanned one month, allowing for comprehensive data collection and analysis within the specified timeframe.

Sample Size: 50 ANM

Sampling Technique: Purposive sampling technique was employed to select participants who met the inclusion criteria. This method ensured that participants were selected based on their relevance to the study's focus, expertise in ANC data management, and availability during the study period.

Data Collection Procedure- Self-administered telephonic interview through digital questionnaires specifically designed for this study.

Data Analysis

Descriptive Analysis:

1. Calculating frequencies and percentages for categorical variables, such as healthcare workers' preference regarding accuracy and reliability of ANC data stored digitally versus on paper.
2. Computing measures of central tendency (mean, median) and dispersion (standard deviation, range) for continuous variables, such as the efficiency of digital solutions in capturing and storing ANC data.

Ethical Considerations

Informed consent will be obtained from all participants. Confidentiality of data will be maintained throughout the study.

Implications of Research:

This research is expected to provide valuable insights about the knowledge, attitude, and practice of ANM about the use of digital solutions for ANC data

Operational Definitions

Antenatal Care Data Management refers to the collection, storage, analysis, and utilization of data related to the care provided to pregnant women during the prenatal period. This includes information such as medical history, physical examinations, laboratory test results, ultrasound findings, and other relevant data.

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Annexure

Section 1: Demographic Information

1) Your AGE
    A. 21-30
    B. 31-40
    C. 41-50
    D. More than 50

2) Years of experience in managing ANC data
    A. Less than 1 year
    B. 1-3 years
    C. 3-6 years
    D. 7 years or more
3) Training attended related to ANC,
    A. 1-2 sessions
    B. 3-5 session
    C. More than 5 sessions
    D. None

Section-2 Knowledge

4) How familiar you are with a digital tool for ANC
    A. Very familiar
    B. Less familiar
    C. Not familiar

5) Which of the following digital solutions have you been trained to use for ANC (multiple choice)
    A. ANM digital health application (Khushi baby app)
    B. PCTS
    C. UWin
    D. Other

6) Which of the following digital solutions are you using for ANC
    A. ANM digital health application (Khushi Baby)
    B. PCTS
    C. Uwin
    D. Other
7) How confident do you feel in using digital solutions for antenatal care data management?
    A. Not at all confident
    B. Slightly confident
    C. Very confident
8) What do you find as the main benefits of using digital methods for ANC
    A. Improved accuracy
    B. Faster data retrieval
    C. Easier data sharing
    D. Easier data finding
    E. Other
9) What are the main challenges you face in managing ANC data?
    A. Difficulty in accessing records
    B. Time-consuming data entry
    C. Lack of training
    D. Data loss or damage
    E. Other
10) Do you think digital data collection is reliable
    A. Yes
    B. No

Section 3: Practices

11) How often do you update ANC records in digital tool
    A. Daily
    B. Weekly
    C. Monthly
    D. Biweekly
12) Have you faced difficulties in sharing ANC data with others using digital health applications
    A. Yes

B. No

13) Do you think the use of digital solutions has improved the accuracy and accessibility of antenatal care data?
    A. Yes
    B. No
14) Does digital tool ensures that all necessary ANC data is captured
    A. Yes
    B. No
15) Does data collection in a digital tool offer special features to validate the data you enter, such as checking for missing entries or out-of-range values?
    A. Yes
    B. No

17. Any drawback of the digital platform (open ended question)

Section 4: Attitudes

16) What are the primary advantages of using digital tool for ANC
    A. Real-time data entry and retrieval
    B. Reduced errors through validation checks
    C. Improved data completeness and timeliness
    D. Enhanced data security
17) How do you think the digital tool can be further improved to optimize ANC data management practices?
    A. Enhanced user training
    B. Enhanced user training
    C. Better technical support
    D. Other
18) Would you recommend the increased use of digital solutions for managing antenatal care data to other health care workers
    A. Yes
    B. No
    C. May be