

# Designed Guidelines for TBAs Regarding Postnatal Sepsis Management in Rural Areas, (Jan2020), River Nile State, Sudan

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## I. INTRODUCTION

### **Abstract**

**A. Background:** *Postnatal sepsis is one of the problems that threaten mothers' lives, although it can be avoided by taking the necessary precautions. The midwife represents the cornerstone in preventing and treating infections during the postpartum period.*

**B. Stud design:** *This semi-experimental study Sudan, River Nile state to evaluate the effectiveness of designed guidelines for traditional birth attendants (TBAs) regarding postnatal sepsis management from July 2019 to January 2020.*

**C. Sample size:** *The study included 37TBAs.*

**D. Data collection tools:** *Data were collected using a standard questionnaire before and after the training program.*

**E. Data analysis:** *The data were analyzed by a computer software program (SPSS) version 23.*

**F. Result:** *The result showed that the level of knowledge is improved significantly after guidelines interventions concerning the definition of postnatal sepsis, hygiene, particularly perineal and vulval care, life-threatening conditions which may result from puerperal sepsis (77.7%, 45.5%, 66.7%), respectively compared to pre-intervention phase (0 %, 16.7%, 33.3%). The midwives showed good knowledge after the intervention.*

**G. Conclusion:** *The study concluded that the majority of traditional birth attendants have some knowledge regarding postnatal infection management, which improved significantly after guidelines interventions*

**Keywords** - *Sepsis Management, Postnatal Sepsis Management, Traditional birth attendant, midwifery*

According to a recent WHO estimation, each year, more than 500,000 women between the ages of 15 and 49 die of causes related to pregnancy and childbirth, and more than half occur in Africa [75]. The vast majority of these deaths are preventable. Researchers also estimate that more than 40 percent of pregnant women experience obstetric disorders that are not immediately fatal [76]. Approximately 15 percent of all births are complicated by a potentially fatal condition that requires emergency care. [24]

The five most important direct causes of maternal mortality in developing countries are hemorrhage, sepsis, unsafe abortion, eclampsia, and obstructed labor. Together these causes account for more than two-thirds of maternal mortality in the world

The second leading cause of maternal mortality, sepsis, is estimated to cause 15 percent of all maternal deaths worldwide [24]. Puerperal infections are caused by the transfer of an infectious agent from the cervix or vagina to the uterus during labor or pelvic examination or by transferring bacteria from skin, nostrils, and perineum by contaminated fingers or instruments. The risk of puerperal sepsis is higher for women with sexually transmitted and other infections, premature rupture of membranes, retained products of conception, diabetes, cesarean or other operation, postpartum hemorrhage, anemia, low nutritional status, history of previous complications of labor, and poor infection control. [71]

A study conducted about Maternal Mortality in Ribat University Hospital, Khartoum, Sudan, concluded that: Maternal mortality rate was 51:100000 live births. Pregnancy-induced hypertension constituted one-half of the causes of maternal deaths, followed by hemorrhage and septicemia. [72]

A cross-sectional community-based study carried out in Kassala, eastern Sudan during February through March 2012 to describe the postpartum activities (breastfeeding, perineal

hygiene, use and time of family planning, how they aid lochia and induce uterine involution), postpartum care (postnatal check-up by health provider) and the association of postpartum care with socio-demographic characteristics (age, education... etc.), parity and antenatal care. Results out of 300 interviewed women 55.7% (167/300) didn't receive any postnatal check-up till they completed 6 weeks from their last delivery. 63% (189/300) applied herbal material on the episiotomy wounds, and 92% (276/300) induce drainage of lochia and uterine involution by drinking various materials. In comparison, 8% (24/300) applied hot compresses and/or sat on the hot water and salt solution. The age didn't significantly influence postnatal care (P-value 0.1); however, parity, education, and antenatal care coverage were statistically varied with postnatal care usage (P value=0.001, 0.00, and 0.001, respectively). Conclusion, In Summary of this paper calls for urgent medical attention in the postpartum period. Thus, the current study aimed to describe postnatal care and activities among women and expected to provide the key persons and program managers with fundamental data that might improve maternity care quality.

#### **A. Justification**

The maternal mortality ratio in Sudan was estimated at 750/100,000 live births. Sudan was one of eleven countries that are responsible for 65% of global maternal deaths, according to a recent World Health Organization (WHO) estimate. A study was conducted in Kassala state to investigate the causes and contributing factors of maternal deaths and identify any discrepancies in rates and causes between different areas. It concludes that Maternal mortality rates and ratios were high, with a wide variation between urban and rural populations. Direct causes of maternal death were similar to those in developing countries. To reduce this high maternal mortality rate, we recommend improving the provision of emergency obstetric care (Emoc) in all health facilities, expanding midwifery training and coverage, especially in rural areas[24]

This study was chosen to reduce the incidence of puerperal sepsis by teaching (TBAs) responsible for giving care and educating the women within the postnatal period in rural areas.

#### **B. Objectives**

##### **a) General Objective**

To study The Effectiveness of Designed Guidelines for traditional birth attendants regarding postnatal sepsis Management in Governmental Hospitals, at River Nile State, Sudan.in2019

##### **b) Specific Objectives**

- 1- To determine the level of knowledge of (TBAs) Regarding postnatal sepsis Management.
- 2- To determine the extent of change for knowledge and practice (TBAs) after implementing the Designed Guidelines training program.

## **II. METHODOLOGY**

### **A. Study Design**

A semi-experimental pre-posttest was adopted to study the effect of Designed Guidelines Regarding postnatal sepsis Management in Governmental Hospitals on knowledge of (TBAs). The study sought to assess the exact knowledge and information (TBAs) have regarding postnatal, postpartum sepsis before the intervention and after the implementation of the program

### **B. Study Area**

The study was conducted at River Nile State, which is situated north of Khartoum state. The locality area is about 122.123 kilometer<sup>2</sup>, located between 16- 22 north longitudes and 30- 32 east latitudes. The population was about 1,511,442.

#### **It consists of 7 localities:**

- Damir locality (area 32 thousand square kilometers, population 284 thousand people)
- Atbara locality (3.8 thousand square kilometers, 131 thousand people)
- Shendi locality (268 thousand people)
- Berber locality (160 thousand people)
- Al-Mutama locality (12 thousand square kilometers, 151 thousand inhabitants)
- Abu Hamad locality (38 thousand square kilometers, 80 thousand people)
- The locality of the lake

The total numbers 123 of traditional birth attendants (TBAs) at River Nile State. (73)

##### **a) Study Setting**

The study was conducted at the Atbara midwifery school, which serves as a training center.

##### **b) Study population**

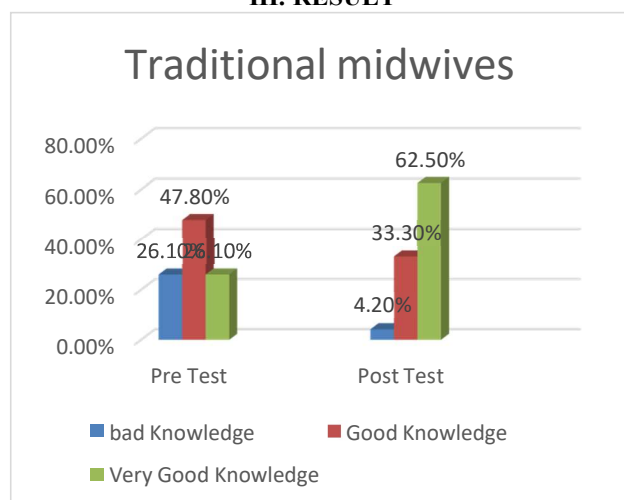
The study population consists of (TBAs). They were subjects that possess some common characteristics and are directly involved in providing maternal services and postnatal care and home visitors in urban and rural areas in River Nile state, Sudan.

Total numbers of (TBAs) 37,

Sample size

Was the total coverage.

### III. RESULT



**TBAs knowledge regarding the advice should be provided to the mother.**

(TBAs) should be knowledgeable about health problems experienced by the mother during postpartum to take suitable management early as possible; concerning knowledge regarding health problems experienced by the mother during the postpartum period, the current study illustrated that 16.7% of (TBAs) had a poor score of knowledge in the pretest, while most of them 91.7% had a very good score of knowledge in the post-test. This finding agrees with Li XF1, Fortney JA, Kotelchuck M, Glover LH(78). They mentioned that the first 24h postpartum and the first postpartum week is a high risk of postpartum deaths, and the risk remains significant until the second week after delivery. In developing countries, hemorrhage, pregnancy-induced hypertension complications, and obstetric infection are common causes of postpartum deaths.

Comparing the effects of the interventional program on (TBAs) knowledge regarding puerperal sepsis definitions, they assigned that 100% of TBAs in pretest had poor knowledge scores wherein post-test great majority 77% TBAs improved their knowledge score. The importance of this point is mentioned in a study done by the Medical Intensive Care Unit, Hamad General Hospital, Hamad Medical Corporation, Doha, Qatar(79). which stated that a major limitation to effective sepsis management is inadequate medical staffing and poor knowledge and awareness of sepsis which may not manifest clear cut signs and expertise to identify it is required.

Of course, knowledge regarding Clinical signs of puerperal sepsis is so important if the caregiver does not detect its good case will be hidden and not get suitable management, so increase maternal morbidity and mortality.

The present study stated that most of the study sample had a poor score of knowledge about common Clinical signs of puerperal sepsis during the postpartum period. However, most participants had a very good score of knowledge in the post-test after receiving the program. This outcome is the same line as the study of Labib, Ahmed (79); they reported that Septic patients would present differently, with some having subtler signs and symptoms. Moreover, Cunha, Marcia Reign(80) studied 89 medical records after analyzed, 62 of them with incomplete information. In 11, there was at least one of the signs and symptoms suggestive of infection. Burlinson did a study, C. E. G.al. stated that the recognition and treatment of maternal sepsis are often delayed due to the physiological adaptations of pregnancy and vague or absent signs and symptoms during its initial presentation.

(TBAs) should play an important role in avoiding risk factors that may lead to postnatal sepsis. The present study revealed that 40.0% of studied participants in the pretest lacked poor knowledge regarding risk factors, which could be identified in history taking. The post-test majority of the participants had a high score of knowledge, in partial agreement with LABIB, Ahmed(79) study suggested over 19 million cases and 5 million sepsis-related deaths annually. Addressing the challenge, the World Health Assembly of the World Health Organization (WHO) passed a resolution on better prevention, diagnosis, and sepsis management.

Regarding risk factors for puerperal sepsis, which could be identified by physical examination, the present study documented a significant improvement of the participants' knowledge after the implementation of the interventions compared with before intervention. These findings contradicted with Labib, Ahmed (79) they revealed that. The cornerstones of sepsis care remain early recognition, adopting a systematic evidence-based bundle of care, and timely escalation to a higher level of care. The sepsis needs to restore physiological variables within one hour of recognition. This could only be achieved if health workers have good knowledge and skills and technical competence to provide such prevention and management.

WHO consolidated guideline on essential intrapartum care stated that problems related to infection control in developing countries include bad antibiotics prescribing practices, so about advice provided to the mother regarding using antibiotics prescribed by the doctor, the present study showed more than 66.7% of the studied sample had poor knowledge before the intervention. In contrast, 54.5% have good knowledge, and (9.1%) of traditional midwives scored

very good knowledge in the post-test after receiving the training program.

This comes in the same line with Simon, E. G.; Laffon, M, (82) they stated that infection of perineal scar justifies oral broad-spectrum antibiotics, in addition to local nursing (professional consensus).also a study by MACLEAN, Gaynor D(94) reported The early detection of infection and the timely use of antibiotics also reduce maternal morbidity and mortality.

Postnatal sepsis can be prevented, so skilled midwifery care based on the prevention of infection and complications is essential. The current study revealed a significant improvement regarding knowledge of (TBAs) about advice provides to the mother generally to prevent puerperal sepsis after receiving the training program. This finding is consistent with Seyedeh's. et al. (83). They reported that there are no statistical differences between pre and post-test.

Care during the postpartum period provides opportunities to health workers to detect life-threatening conditions which may result from puerperal sepsis as early as possible Concerning knowledge regarding dangerous signs of life-threatening conditions which may result from puerperal sepsis during the postpartum period, the present study stated that a highly significant score of knowledge was recorded after the intervention compared with before intervention, In partial agreement with this findings Labib, Ahmed (79) they revealed that pregnancy and childbirth are risk factors for sepsis. Multi-organ failure and death can result from puerperal sepsis. Sepsis is the direct and leading cause of maternal mortality.

This study identified that more than half of the studied (TBAs) had a good score of knowledge regarding advice provided to the mother concerning C/S wound in the pretest, while these scores changed to an adequate level of knowledge in the post-test after receiving the training program with highly statistically significant differences. Robert P. Harris convincingly demonstrated that death from infection after cesarean section could be reduced significantly by operating early rather than after several days of labor by using an aseptic surgical technique and closing the uterine incision (84).

The present study Concerning knowledge regarding advice should be provided to the mother about infection control measurements during the postpartum period (40.0%) of TBAs had a poor score of knowledge before the intervention,while( 58.3)%have good knowledge and (25.0%)of traditional midwives scored very good knowledge in the post-test after receiving the training program.

These are national policies recommended for a safe birth. Hence Sosa, Mary Ellen Burke's study stated that Handwashing remains the cornerstone of prevention as transmission can occur directly from an asymptomatic colonized healthcare provider, other patients, or a community-acquired source. (85)

Geberemariam BS Donka GMWordofa B(89) study revealed that Inadequate infection prevention knowledge and unsafe practices were frequent among study participants, reflecting a potentially common problem at public healthcare facilities in southeast Ethiopia. Healthcare workers have better knowledge and safer practices if they had received infection prevention training and had infection prevention guidelines in their workplace.

Concerning advice and guidance provided to the mother regarding hygiene, particularly perineal and vulvar care, significantly high proportions of (TBAs) had poor scores of knowledge before the intervention. However, their knowledge significantly improved after the intervention. Many studies were mentioned poor knowledge and practice regarding perineal and vulvar care, as mentioned by Setyowati, Setyowati, Rosnani, Rosnan (87), who stated that Mothers' efforts to solve postpartum problems could not be separated from habit and the family's culture. Health workers need to facilitate maternal care with a family culture approach.

***A. Perineal and vulvar care was done using herbal medicine and home remittance, so more research is needed.*** The prevention control measurement plays a cornerstone role in postnatal management regarding following universal precautions for prevention of infection in the postnatal ward, (45.5%)demonstrated bad practice, and only a few (4.5%) of respondents demonstrated very good practice, which changed significantly to (43.5%) Good Practice and (56.5%) Very Good Practice. This was reported by Hussein J et al. (90)that specific interventions necessary for the prevention and treatment of infection are good hand hygiene, use of the antiseptic solution, and appropriate antibiotic coverage. Increasing concerns of the hospital and healthcare-associated infection control are currently recorded in many medical disciplines, even in high-income industrialized countries.

This is mostly because of the lack of in-service training, inadequate supply of consumables, poor supervision, and absence of a hospital's policy on infection control. This is similar to a study of Brisibe S1, Ordinioha B, Gbeneolol PK(91) in Nigeria, who find that The reasons given by the respondents in UPTH for non-adherence to the infection control policy include inadequate supervision (39.39%) and lack of in-service training (21.21%). In comparison, the respondents in BMSH gave reasons that include the



inadequate supply of consumables (34.29%) and the absence of a hospital's policy on infection control (22.88%).

The woman's nutritional status has a direct impact on maternal and health, healing of the wound, increasing immunity, and prevention of infection in the puerperium. Selected interventions and dietary advice can affect a woman's nutritional status. The present study mentioned that Concerning knowledge regarding advice that should be provided to the mother regarding nutrition during the postpartum period (30.0%) of (TBAs) had a poor score of knowledge before the intervention while having traditional midwives scored very good knowledge after the intervention. This limited knowledge suggests the need to review the current pre-service curricula to assess how adequately it prepares midwives with various obstetric care skills. A similar study in Asmara by Ghebreyohans, Ghidye(86) revealed that The percentages of knowledge in recognizing the necessary nutrients ranged from 87.6% for carbohydrates to 46% for minerals.

Regarding advice provided to the mother having postnatal sepsis regarding child care, the present study assigned a highly significant score of knowledge in post-intervention compared with before intervention with a statistically significant difference. The lack of guidance and limited information that currently exists among nurses who provide maternal health services may indicate that baby care is given low priority. Therefore, it is important to ensure that midwives are equipped with the knowledge to provide advice, guidance, and counseling to the woman. That is prescribed in the study of Ghebreyohans, Ghidye(86) whose stated that The percentages of correct knowledge regarding first baby bath, frequency of breastfeeding, umbilical care, duration of exclusive breastfeeding, need, and purpose of the vaccine was 40.1, 81.9, 77.4, 94.8, and 99.2% respectively. The mean PNC knowledge score was 24.89/60. The score of knowledge on postnatal care was found to significantly differ across the categories of residence ( $p < 0.001$ ) (86)

this means that the(TBAs) were not exposed to this kind of information, which may call for a (TBAs) training review.

#### IV. CONCLUSION

Based on the findings of the present study, it can be concluded that:

1. A majority of (TBAs) have some knowledge about postpartum infection but do not provide good management.
2. The majority of (TBAs) have lacked the essential knowledge regarding infection control measurements
3. Culture and believes contribute (TBAs) behaviors
4. The (TBAs) had a high knowledge score in the post-test compared with the pretest, and they demonstrated good

practice, which indicated that the postpartum infection management training program was effective.

#### V. RECOMMENDATIONS

*A. Based on the study findings, the following recommendations are suggested:*

1. Every delivery, including those in the home, should be assisted by a skilled birth attendant (a midwife, physician, or nurse) who has been trained to be proficiency in basic techniques for a clean and safe delivery.
2. Going training and refresher courses to upgrade (TBAs) knowledge and skills on Postpartumcare, emphasizing the prevention, timely recognition, and treatment of infection.
3. Reviewing current pre-service curricula to assess how adequately it prepares (TBAs) and midwives with skills in various obstetric cares, there is still a need for better access to quality and safe health technologies.
4. Increased and sustained resources by governments and partners to improve infection control measurements and provide adequate facilities and supplies.
5. Improved generation of evidence through information systems and research. Further extensive researches are needed.

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