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Original Research Article

Assessment of Community-based postnatal care services provided by midwives in River Nile State, Sudan(2)

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Abstract

This study aimed to assess the community-based deliveryand postnatal care services provided by midwives in River Nile State, 2017. A cross-sectional community based study using structured questionnaire for collecting quantitative data, was conducted in River Nile State, 2017. Multi-stage cluster sampling technique was used. Three localities of the state were determined. The calculated sample size for women at reproductive age was divided between the selected localities proportional to size of midwives per each locality. Then simple random sample was used for the selection of midwives in each locality and 3 women were selected per midwife. A total of 92 midwives and 276 mothers were interviewed in this study. Generally mothers were satisfied with midwifery deliveryand postnatal care services. Mother's satisfaction was significantly related to duration of midwife's stay with the mother after delivery, place of delivery, availability of midwives at any time, and midwife's follow up during the postnatal period. The majority of **mothers' delivered at home with the assistant of midwives, and the majority of mothers who delivered at home are satisfied with the service, and the majority of mothers who seeked postnatal care from midwives are satisfied with their service.**

Keywords: Delivery care, Midwifery, Mothers, Postnatal care, River Nile, Satisfaction, Services

INTRODUCTION

Worldwide approximately 303,000 women die while pregnant or giving birth in 2015, almost 830 deaths/day (WHO, 2015). An estimated 8 million more suffer serious illnesses and lifelong disabilities as a result of complications at the time of childbirth (WHO, 2010). Every year up to 2 million newborns die within the first 24 hours of life (Lawn et al., 2011). There are 2.6 million stillbirths, 98% in low- and middle-income countries (UN, 2009), of which approximately 45% occur during labor and birth (Lancet Report, 2011). Millions more newborns suffer birth traumas that impair their development and future productivity. The overwhelming majority of these deaths occur in low-income countries and most of them could have been prevented. They happen because women, usually the poor and marginalized, have no access to functioning health facilities or to qualified health personnel. In 2012, 40 million births in developing regions were not attended by skilled health personnel (United

Nations). Assessing progress in Africa toward the Millennium Development Goals. United Nations Economic Commission for Africa (2014). To cut this tragedy there is a need for two key components: a skilled birth attendant (SBA) and an enabling environment that includes drugs and equipment, a functional referral system and enabling policies (Koblinsky et al., 2006; Adegoke, 2011). These health professionals should be motivated and located in the right place at the right time. SBA is defined as "an accredited health professional such as a midwife, doctor or nurse who has been educated and trained to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns" (WHO, Making pregnancy safer the critical role of the skilled attendant, 2004). According to International Confederation of Midwives (ICM) a midwife is a person who has successfully completed a midwifery education programme that is duly recognized in the country where it is located and that is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery (ICM International Definition of a Midwife, 2011, Accessed September, 2016)

Delivery is a normal physiological process completed through three stages, (Stages of labor, the women organization, 2017) the first stage which begins when the cervix starts to soften and to open and completes when the cervix has opened to around 10 centimeters, the second stage describes the period of time from fully dilatation of the cervix till the delivery of the baby, the third stage begins after the baby is born and finishes when the placenta and membranes have been delivered.Midwives are competent to assist with a normal vaginal delivery while more complicated deliveries are handled by a health care provider who has had further training.(Midwifery, 2017; Pregnancy and labor, Accessed April 2017).

The postnatalcare is a preventive care practices and routine assessments to identify and manage or refer complications of both mothers and newborns (Warren et al., 2006) beginning immediately after the birth till six weeks.This is the most critical and till now the most neglected period in the lives of mothers and babies as describes by WHO (WHO recommendations on postnatal care of the mother and newborn, 2013). Lack of care in this time period may result in death or disability. Up to two thirds of maternal deaths occur after delivery.

Studies have demonstrated a positive correlation between the proportion of deliveries taking place with an SBA and a reduction in maternal deaths (Graham et al., 2001, Scott, 2009). Increasing women's access to high-quality midwifery services has become a focus of global efforts to realize the right of every woman to the best possible health care during pregnancy and childbirth. In Sudan such skills at community level were designed to be carried out by midwives. According to World Health Organization (WHO) and International Confederation of Midwives (ICM), trained midwives are expected to provide care of women during pregnancy, labour, and the postpartum period, as well as care of the newborn, registration of newborn births and deaths, and maternal mortality. Measures aimed at preventing health problems in pregnancy, the detection of abnormal conditions, the procurement of medical assistance when necessary, andthe execution of emergency measures in the absence of medical help are also expected from the trained midwives (ICM International Definition of a Midwife, 2011, WHO, Midwifery, 2011).

Problem Statement

Three quarters of all maternal deaths in Sudan occurred during delivery and the immediate postpartum period (FMOH, Sudan Household Health Survey, 2010). As a response a comprehensive programme to reduce maternal mortality was established. Midwives are the cornerstone of this programme. Basic and in-service training is going on and efforts to equip midwives with necessary material is accelerated in the last years. Although maternal mortality was profoundly decreased by the end of 2015, Still Sudan failed to meet the MDGs target (Carr et al., 2011). River Nile state has many rural areas in which the tendency is for home delivery which performed by midwives. The coverage with midwives in the state is 72%, and home delivery in the state exceeds 70%. With this coverage and with high percentage of home delivery, it seems that the role of midwives in reducing maternal mortality and ensure safe delivery and neonatal health could be of benefit provided that they were equipped to do that, they were committed and their role is appreciated by the community, and the community is satisfied with their services.

Justification

Midwives workforce represents the backbone of community-based reproductive health services and form important path for lowering maternal mortality in a country like Sudan, where most deliveries (72%) still take place at home (FMOH, Multiple Indicators Cluster Survey, 2014). Since midwife's act as the first line of defense, their services need to be scientifically assessed in River Nile State in order to provide information on the actual level of acquired knowledge and skills and to determine accordingly the future training they need. Also, when the

services are studied and analyzed, the quality can be improved.

SUBJECTS AND METHODS

Study Design and Setting and Population

A cross-sectional community-based study using quantitative method.

- The study was conducted in River Nile State which is located between Latitudes 16-22 north and Longitudes 32-35 south. The State's area is 124,000 square Kilometers. The population is 1,393,467. The women at reproductive age are 338,526. It ranked as sixth state in terms of area among the Sudan states. It has 7 localities, 706 villages and city blocks. There is a midwifery school in Atbara with an estimated production of 100 midwives if functioning at its full capacity. The localities are: Addamer, Atbara, Barbar, Abuhamad, Shendi, Elmatamma, and Elbuheera. The study population divided for the purpose of study to; Midwives and Married women.

Inclusion criteria

For midwives:

- All midwives who worked at the community village and city blocks,
- Midwives who are living in the area
- Midwives who are working for more than one year.

For married women:

- Women who delivered within 3 months
- Women who delivered anywhere (home and hospital).

Exclusion criteria

For midwives:

- Midwives who worked at hospitals
- Midwives who are working less than one year.

For married women:

- Women who delivered more than months
- Women who came to the study area after delivery.

Sample Size

For the married women the sample size was calculated using this formula: n=z2 pq/d2 Where: n = the sample size. z (the standard normal deviation) = 1.96 at 95% CI. p (mother satisfaction) = 0.90 (28). q = 0.10. d = 0.05. Design effect = 2.

n = [z2 pq / d2] *2, so n = (1.96)2 * (0.90*0.10) / (0.05)2 and n = 138*2 = 276

For each 3 married women the researcher has interviewed one midwife, so the sample size of midwives was (276/3) = 92 midwives. (1:3 was obtained after personal communication with midwives).

Sampling Technique

Multi-stage cluster sampling technique was used for selecting the localities which will be representative for the state. Three localities have been selected accordingly. These localities were Atbara, Elmatamma, and Barbar. The calculated sample size for married women then divided between the three selected localities proportional to size of midwives per each locality (total sample of married women * no. of midwives in the locality/total no. of midwives). Then simple random sample was used for the selection of midwives in each locality. While 3 women were selected with any midwife.

Distribution of calculated sample size married women per selected localities

Locality	No. of midwives working at community level	%	Sample size women (3 per midwives)	Sample Size Midwives
Atbara	73	29.5	81	27
Elmatamma	87	35.0	96	32
Barbar	88	35.5	99	33
Total	248	100%	276	92

Data collection tools and technique (Questionnaire)

The data were collected by using structured pre-tested pre-coded questionnaire for collecting quantitative data from midwives. The questionnaire included 4 main sections. Section one covered the demographic information and midwife's qualification (graduation school, years of experience, training courses), section two concerned about antenatal care services provided by midwives, section three covered the delivery care services provided by the midwives, and lastly section four was for postnatal care services provided by midwives.

Second structured pre-tested pre-coded questionnaire for the mothers. It also included 4 main sections, section one covered the demographic information of the mothers, section two concerned about antenatal care services received by mothers, section three covered the delivery care services received by the mothers, and lastly section four was for postnatal care services received by mothers.

To facilitate well understanding to participants, both questionnaires were translated into Arabic language.

Checklist used for assessing the midwife's kit contents status and completeness through direct observation.

Table 1. Distribution of mothers according to general characteristics in River Nile State, Sudan, 2017 (n=276)

Variable	Categories	No.	Percentage
Age in years	Less than 25	93	33.7
	25 to 40	175	63.4
	More than 40	8	2.9
Locality	Barbar	99	35.5
	Elmatamma	96	35.1
	Atbara	81	29.3
Education	Illiterate	17	6.2
	School education	101	36.4
	University and above	158	57.2
Mother job	Housewife	255	92.4
	Employee	21	7.6
Number of children	Less 3	110	39.9
	3 to 5	130	47.1
	More 5	36	13.0

Study variables

The dependent variable of study was Mothers' satisfaction with community-based midwifery services. Independent variables included; Antenatal care variables, Delivery care variables and postnatal care variables. Background variables were the Age, Residence, Education, Occupation and Number of children.

Data management and Analysis

After completion of the field work, data was entered and cleaned using Standard Package of Social Services (SPSS) software version (20). Data was analyzed using the same software. Frequency, tables and figures were formulated as appropriate to give clear description of the study population. Further analysis was conducted including regression analysis. The level of statistical significance considered at < 0.05.

Ethical Consideration

Ethical clearance from the Sudan Medical Specialization Board (SMSB), and River Nile State Ministry of Health ethical committee was obtained. The midwives and women at reproductive age were informed about the objectives of the study and written consent was obtained from them. Rights of respondents and confidentiality was assured.

RESULTS

A total of 276 mothers were interviewed during this study in the River Nile State from three localities: Atbara (81), Elmatamma (96), and Barbar (99). The response rate was 100%. Results were displayed in tables and figures. About two thirds of the included mother were at 25- 40 years, 57.2% of them were graduated, and 92.4% of the mothers were housewives (Table 1). More than half of the mothers have had normal delivery at home (56.1%) with all outcomes alive and well and only (0.6%) occurrence of complications during labour. In spite of that mothers' satisfaction with midwifery delivery care was also high (82.8%). Causes of dissatisfaction mentioned by mothers were that midwife's labour was expensive. After delivery 85.8% of mothers have been visited. Main causes of postnatal visits were episiotomy examination and neonatal examination which represented (95.5%) and (82%) respectively. Mothers' satisfaction with the midwifery postnatal care was very high (94.2%). Part of the small percentage who were dissatisfied said that midwives did not visit them post-delivery, and another group said that midwives did not give them the birth certificate (Tables 2 and 3, Figures 2-4). A total of 92 midwives were interviewed during this study from the three localities in the state: Atbara (27), Elmatamma (32), and Barbar (33). More than half of the midwives' age ranges between 30 to 40 years (55.4%), most of them were educated (74%), (87%) of them were graduated from Atbara midwifery school, over (80%) of them have more than 10 years of experience, majority of them (88%) took post-graduation courses within the last three years and gained knowledge, reporting skills, and clinical skills (100%), (54%), and (35%) respectively (Table 4). Almost 88% of midwives have performed labor in the three months preceded the study, (96.3%) of the deliveries were at the mother home, (65.4%) of midwives has referred cases of high risk pregnancy, prolonged labor, obstructed labor, intra-partum hemorrhage, and retained placenta. Majority of the midwives (93.5%) conducted postnatal visits to mothers mainly to examine the episiotomy wound (98.8%) and the infant (94.2%). Only 3% of midwives were supervised by the health visitor in

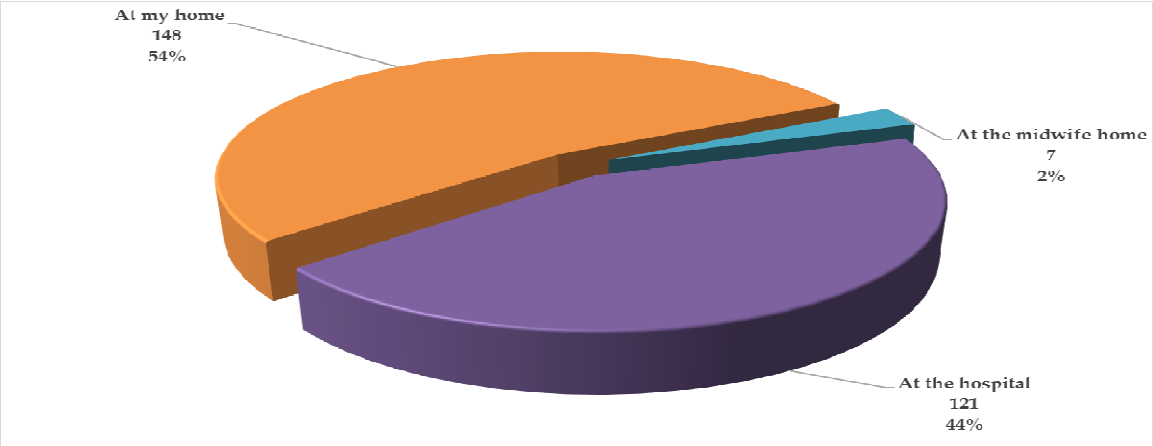

Figure 1. Distribution of mothers according to place of delivery in River Nile State, Sudan, 2017 (n = 276)

Table 2. Distribution of mothers according to delivery stage events and care in River Nile State, Sudan, 2017

Variable	Categories	No.	Percentage
Midwife brought her kit (n=148)	Yes	147	99.3
	No	1	0.7
Duration of delivery (n=155)	Less than one hour	9	5.4
	1 to 2 hours	70	45.3
	More than 2 hours	76	49.3
Frequencies of cervix measurement (n=155)	Once	29	18.7
	2 to 4	123	79.4
	More than 4	3	1.9
Frequencies of FHS hearing(n=155)	Once	85	54.8
	2 to 4	67	43.2
	More than 4	3	1.9
Interval between FHS hearing (n=70)	Less than one hour	3	4.3
	1 to 2 hours	14	20.0
	More than 2 hours	53	75.7
Any complications during labour(n=155)	Yes	1	0.6
	No	154	99.4
The midwife did an episiotomy (n=154)	Yes	50	32.5
	No	104	67.5
The midwife did circumcision and re-circumcision (n=154)	Yes	138	89.6
	No	16	10.4
Post-delivery, duration the midwife stay with the mother (n=155)	Less than 2 hours	44	28.4
	2 to 4 hours	88	56.8
	More than 4 hours	23	14.8

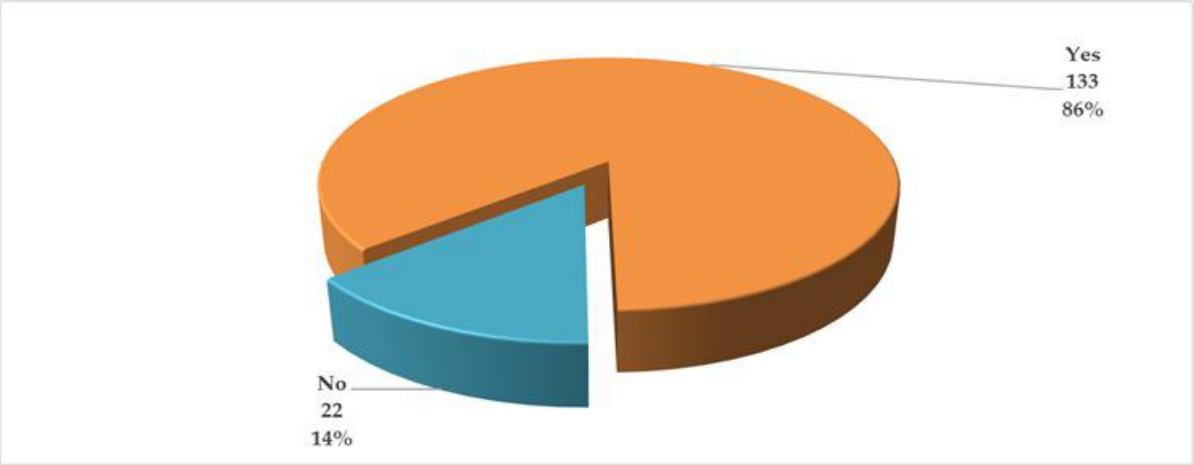

Figure 2. Distribution of mothers according to the postnatal follow up visits conducted by midwives in River Nile State, Sudan, 2017 (n= 155)

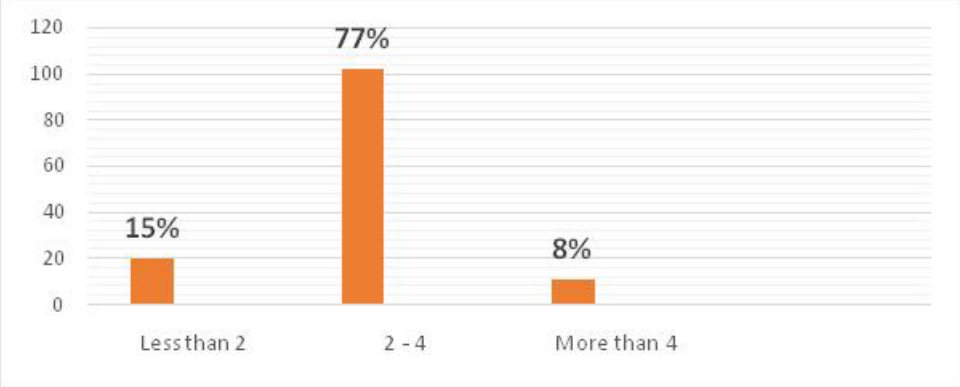

Figure 3. Distribution of mothers according to the number of postnatal follow up visits conducted by midwives in River Nile State, Sudan, 2017 (n= 133)

Table 3. Distribution of mothers according to postnatal events and services in River Nile State, Sudan, 2017

Variable	Categories	No.	Percentage
Place of the visit (n=133)	Mother home	129	97.0
	Midwife home	4	3.0
Time of the first visit (n=133)	Less than 2 weeks	9	6.8
	2 to 4 weeks	93	69.9
	More than 4 weeks	31	23.3
The visit was for (n=133)	Episiotomy examination	127	95.5
	Neonate examination	109	28.0
	Uterus examination	10	7.5
	Breast feeding	3	2.3
	Importance of immunization	3	2.3
	Family planning methods	1	0.8
Birth notification given by the midwife (n=155)	Yes	105	67.7
	No	50	32.3
High payment for the midwife (n=155)	Yes	9	5.8
	No	146	94.2
Availability of the midwifery services at any time (n=155)	Yes	150	96.8
	No	5	3.2

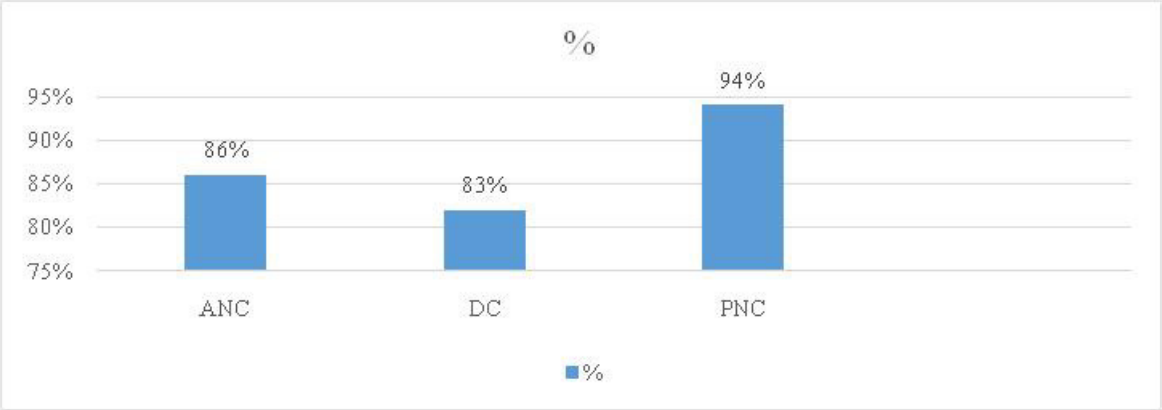

Figure 4. Distribution of the mothers according to their satisfaction with ANC, DC, PNC services in River Nile State, Sudan, 2017

Table 4. Distribution of the midwives according to their general characteristics in River Nile State, Sudan, 2017 (n=92)

Variable	Category	No.	Percentage
Age in years	Less than 30 years	6	6.5
	30 to 40 years	51	55.4
	More than 40 years	35	38.0
Locality	Atbara	27	29.3
	Almatamma	32	34.8
	Barbar	33	35.9
Education	Illiterate	24	26.1
	School	67	72.8
	Graduate	1	1.1
Graduation school	Atbara	80	87.0
	Alfashir	1	1.1
	Kosti	1	1.1
	Omdurman	7	7.6
	Port Sudan	1	1.1
	Shendi	2	2.2
Study duration in years	Less than 1 year	2	2.2
	1 to 1.5 year	16	17.4
	More than 1.5 year	74	80.4
Functional classification	Village midwife	56	60.9
	Health visitor	4	4.3
	Nurse midwife	8	8.7
	Community midwife	24	26.1
Work experience	> 17 years	57	62.0
	10 years	20	21.7
	< 7 years	15	16.3

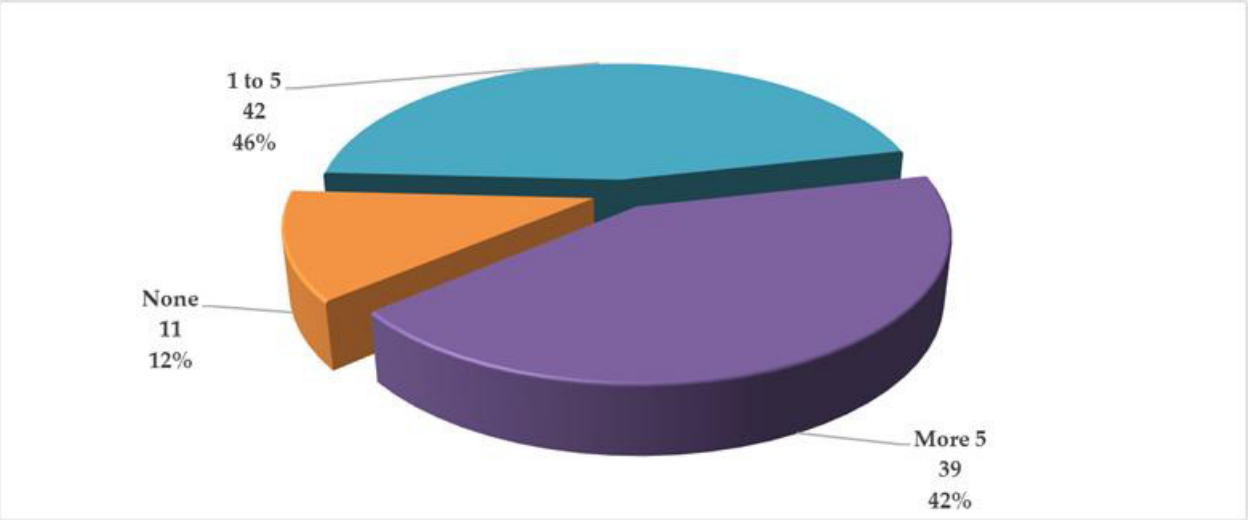

Figure 5. Distribution of midwives according to the number of deliveries attended in the last 3 months in River Nile State, Sudan, 2017

Table 5. Distribution of midwives according to delivery care in River Nile State, Sudan, 2017

Variable	Category	No.	Percentage
The last delivery at (n=81)	Your home	3	3.7
	Mother home	78	96.3
The pregnant was (n=81)	Primigravida	5	6.2
	Multipara	65	80.2
	Grand multipara	11	13.6
Stage at which midwife find the pregnant (n=81)	Stage 1	16	19.8
	Stage 2	23	28.4
	Stage 3	42	51.9
Hearing the fetal heart sounds by (n=92)	The ear	29	31.5
	Fetal stethoscope	63	68.5
Episiotomy done (n=81)	Yes	30	37.0
	No	51	63.0
De-circumcision and re-circumcision done (n=81)	Yes	66	81.5
	No	15	18.5
Any referral case in the last 3 months (n=81)	Yes	53	65.4
	No	28	34.6
Number of cases which have been referred (n=53)	Less than 3	36	67.9
	3 to 5	15	28.3
	More than 5	2	3.8
Causes of referral (n=53)	Obstructed labor	1	1.9
	Intra-partum hemorrhage	1	1.9
	Prolonged labor	4	7.5
	Early rupture of membrane	0	0.0
	Retained placenta	1	1.9
	Convulsions	0	0.0
	High risk pregnancy	47	88.7
	Premature labor	1	1.9
	Others	4	7.5
To where was the referral (n=53)	The nearest health center	0	0.0
	The nearest governmental hospital	51	96.2
	Others	2	3.8
Following mothers to the referral site (n=53)	Yes	50	94.3
	No	3	5.7

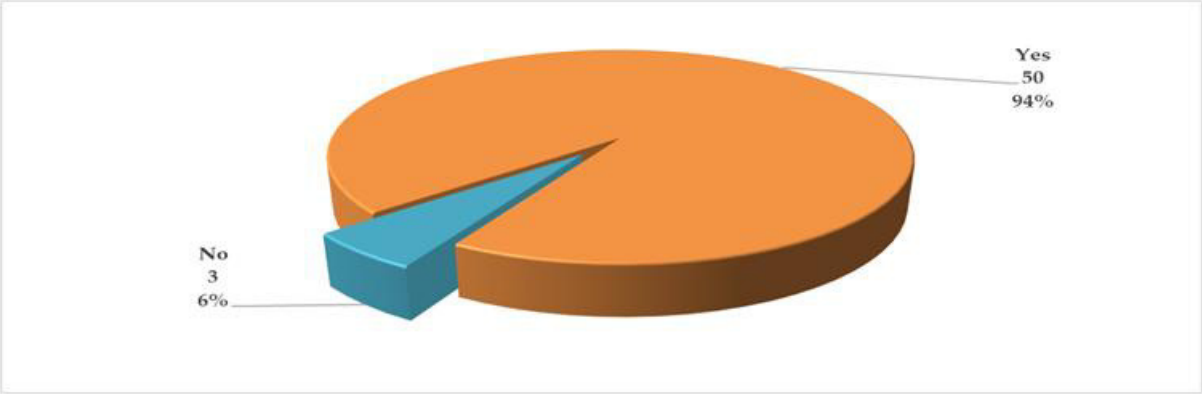

Figure 6. Distribution of midwives according to the post-natal follow-up visits in River Nile State, Sudan, 2017

Table 6. Distribution of the midwife according to postnatal care in River Nile State, Sudan, 2017

Variable	Category	No.	Percentage
Reasons for postnatal visits (n=86)	Social	0	0.0
	Episiotomy examination	85	98.8
	Uterus examination	29	33.7
	Infant examination	81	94.2
	Breastfeeding advice	15	17.4
	Family planning methods	1	1.2
	Importance of immunization	1	1.2
	Others	14	16.3
Supervision visits (n=92)	Yes	3	3.3
	No	89	96.7
The last supervision visit– in years (n=3)	One year	1	33.3
	1.5 year	1	33.3
	2 years	1	33.3
Number of supervision visits per year (n=3)	1 visit	1	33.3
	2 visits	2	66.7
Any cooperation with the health team in the area (n=92)	Yes	66	71.7
	No	26	28.3
Any link with the nearly facility (n=92)	Yes	65	70.7
	No	27	29.3
Provider of the deficient items (n=92)	MOH	0	0.0
	Locality	0	0.0
	The market	88	95.7
	Others	4	4.3

- There was one mother referred after delivery, the cause of referral was hypotension.

Table 7. Result of checklist assessment for the midwives box contents in River Nile State, Sudan, 2017 (n=92)

No	Item	Availability	Percentage
1	Fetal stethoscope	75	81.5
2	Stethoscope + sphygmomanometer	37	40.2
3	Neonatal scale	45	48.9
4	Thermometer	55	59.8
5	Scissors	92	100.0
6	Forceps	92	100.0
7	Suturing needle	91	98.9
8	Urinary catheter	78	84.8
9	Mucus extractor	88	95.7
10	Covered basin	79	85.9
11	Renal basin	53	57.6

Table 7. Continue

12	Steal basin	52	56.5
13	Cloth bib	21	22.8
14	Plastic bib	46	50.0
15	Scaling meter	37	40.2
16	Suture material	91	98.9
17	Umbilical clamp	90	97.8
18	Gloves	80	87.0
19	Syringes	89	96.7
20	Local anesthesia	86	93.5
21	Ergometrin	36	39.1
22	Test tubes	34	37.0
23	Masks	69	75.0
24	Oilcloth	74	80.4
25	Cotton	64	69.6
26	Gauze	39	42.4
27	Soap	74	80.4
28	Spirit	41	44.6
29	Spirit lamp	51	55.4
30	Battery lamp	64	69.6
31	Folic acid tablets	6	6.5
32	Ambo bag	28	30.4
33	Pen + paper note	62	67.4
34	Nail clippers	51	55.4

Table 8. Results of bivariate and multivariate analysis (logistic regression) for the factors that may associate with the mother satisfaction with delivery services provided by midwives in River Nile State, Sudan, 2017 (n=128)

Variables (factors)	**Mother satisfaction (n=128/satisfied)**		**Bivariate Analysis**				**Multivariate Analysis**			
			OR	**95%CI**		***Pvalue***	**OR**	**95%CI**		***Pvalue***
	No.	**%**		**From**	**To**			**From**	**To**	
Place of delivery										
Mother home	123	95.8	2.32	1.22	4.23	**0.009**	2.84	1.25	6.54	**0.013**
Midwife home	5	4.2								
Duration of delivery										
Less than 1 hour	16	12.5	0.17	0.5	2.1	0.621	1.17	0.54	2.59	0.68
1 to 2 hours	48	37.5								
More than 2 hours	64	50.0								
frequency of the cervix measuring										
Less than 2 times	32	25.0	1.21	0.45	3.69	0.754	1.66	0.48	5.69	0.425
2 to 4 times	69	54.2								
More than 4 times	27	20.8								
frequency of the FHS hearing										
Less than 2 times	37	29.2	0.38	0.13	1.06	0.061	0.37	0.10	1.39	0.142
2 to 4 times	80	62.5								
More than 4 times	11	8.3								
Referral cases										
Yes	5	4.2	1.13	0.52	2.06	0.985	0.55	0.19	1.81	0.289
No	123	95.8								
Stay of midwife after delivery										
Less than 2 hours	64	50.0	2.0	1.13	3.87	**0.023**	2.09	1.07	4.06	**0.033**
2 to 4 hours	37	29.2								
More than 4 hours	27	20.8								

Table 9. Results of bivariate and multivariate analysis (logistic regression) for the factors that may associate with the mother satisfaction with post natal care services provided by midwives in River Nile State, Sudan, 2017 (n=146)

Variables (factors)	Mother satisfaction (n=146/satisfied)		Bivariate Analysis				Multivariate Analysis			
			OR	95%CI		*P value*	OR	95%CI		*P value*
	No.	%		From	To			From	To	
Midwife visits in the postnatal period										
Yes	140	95.7	6.33	3.54	11.08	**0.001**	6.18	3.52	10.89	**0.001**
No	6	4.3								
Number of postnatal visits										
Less than 2	25	17.4	0.98	0.62	1.55	0.936	1.19	0.69	1.81	0.684
2 to 4	102	69.6								
More than 4	19	13.0								
Birth notification given to the mother										
Yes	95	65.2	1.32	0.49	2.17	0.965	0.51	0.18	1.60	0.279
No	51	34.8								
High payment to the midwife										
Yes	0	0.0	-	-	-	-	-	-	-	-
No	146	100.0								
Available of the midwife at any time										
Yes	133	91.3	1.41	1.01	2.99	**0.041**	1.32	0.98	0.17	0.061
No	13	8.7								

their villages or city blocks and these supervisory visits were before more than a year (Tables 5 and 6, Figures 4-6). Approximately all midwives has the kits that used in the delivery such as scissors, forceps, needles, suturing materials, neonatal mucus extractor, and umbilical clamp. Sphygmomanometer, neonatal scale, ambo bag, and scaling meter are very important but their availability percentage are (40%), (48%), (30%), and (40%) respectively. There was variation in availability of consumable materials such a cotton, gauze, and syringes (Table 7). The study revealed an association between mother's satisfaction with delivery care and the place of delivery (95% CI: 1.25 - 6.54, *p-value* = 0.013), duration of midwife's stay with the mother after delivery (95% CI: 1.07 - 4.06, *p-value* = 0.033). Also there was association between mother's satisfactions with postnatal services and midwife's follow up during the postnatal period (95% CI: 3.52 - 10.89, *p-value* = 0.001), availability of midwives at any time (95% CI: 0.98 - 0.17, *p-value* = 0.061) (Table 8 and 9).

During labour there was one woman had convulsions, the mother was referred by the midwife who followed her.
- All delivery outcomes were alive and well.

DISCUSSION

This study was conducted to assess community-based midwifery services in River Nile State, 2017. It was involving collection of quantitative data from midwives and mothers using structured pre-tested questionnaires.

The literatures showed that clients had various expectations about labour that influenced their perception of care. These expectations were based on their own past experiences in labour, experiences of friends and relations, myths about procedures done and societal values. Mother's satisfaction with midwifery delivery care services in this study was high. This result is consistent with that of Ethiopian mothers (Kurabachew et al., 2015) who were highly satisfied with community based delivery services, although this study revealed association between mother's satisfaction and place of labour either mother's home or midwife's home, and duration of midwife stay with the mother after labour, but not duration of labour, mode of delivery, or having plan to deliver at health institute as Ethiopian mothers. It is also consistent with that of Dhaka (Hasan et al., 2007), South Australia (Australian Government, Maternity Service in South Australia Public Hospital, 2007), Assela Hospital mothers (Amdemichael and Tafa, 2014), and Wolayita Zone (Yohannes et al., 2013) study which showed that the satisfaction of mothers who less stayed on labour pain was higher. However, this finding was higher than the study which was conducted in Jimma (Assefa et al., 2011), Amhara Referral Hospitals (Tayelgn et al., 2011), and Pakistan (Mariam et al., 2012). The satisfaction was low in South Africa (Lumadi and Buch, 2011) and Kenya (Bazant and Koenig, 2009). The difference could be explained by a real difference in the quality of services provided, or expectation of mothers as satisfaction may be determined according to mother impression with which she find and which she was expect. In addition, these

studies were facility-based in which the selected referral hospitals in some regions were teaching based which may reduce mother's satisfaction due to reasons such as repeated vaginal examination and absence of privacy.

In a Cochrane review (Hatem et al., 2008) aimed to compare midwife-led continuity models of care with other models of care for childbearing women and their infants suggests that women who received midwife-led continuity models of care were more likely to be satisfied with their care.One study in North Gondar Zonealso indicated that suffering with complication having long labour influence the satisfaction of mothers on health institution delivery service (Bipna et al., 2010). A randomized controlled trial of active management of labor conducted in Auckland, New Zealand, reported that the practice was related to reduction of labor time and a postpartum report of longer labor than expected was strongly associated with reduction of maternal satisfaction (Lynnm et al., 2000; Sadler et al., 2001).

CONCLUSION

– Almost all of the study midwives recognized the indications of referral during pregnancy, labour, and postpartum period.
– During delivery midwives do not frequently heard the fetal heart sounds to detect if the baby is normal, distressed, or died.
– In postnatal carethey examine the wound and the neonate but they did not advice the mother about the importance of breast feeding, family planning and baby immunization. They did not advice the mother about the common neonatal illnesses and how to deal with.
– Mother's satisfaction with delivery care midwifery services, and postnatal care midwifery services was high.
– There was some important kits were not available in a considerable part of the midwives.

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