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Perinatal Morbidity and Mortality in Rural Community in Beni-Suef Governorate "Upper Egypt"

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Abstract: The exact magnitude of the problem of perinatal morbidity and mortality is one of the most important problems in Upper Egypt particularly rural areas. The study aimed for assessment of the incidence, distribution and underlying factors of perinatal mortality as well as the different neonatal morbidities. A follow up study was conducted in two randomly selected local administrative rural units in Beni-Suif governorate; where all pregnant women attending these centers were interviewed and examined. The study included any pregnant woman in the last expected 4 months (late fetal life) November 2007- February 2008 and throughout their early neonatal period. A questionnaire consisted of 2 parts, the first part concerned with the maternal aspects, while the second part for the neonates. A sample size of 200 pregnant women was calculated to be statistically sufficient but it was increased to 240. A total 240 pregnant women have been followed up, they gave 3 still births (1.25%) and 3 early neonatal deaths (1.25%). As regards morbidity it was observed that (87.8%) of the followed up neonates suffered at least one morbidity problem throughout the early neonatal period (1stweek) whether infectious or non infectious. Infection occupied the top of the list (57.4%). The most common infection detected was acute Respiratory Infection (36%) followed by Gastrointestinal Infection (28.7%). Among the non infectious problems, prematurity (37.5%) and the least was Congenital anomalies (4.2%). Those who attended MCH less than 4 times: of them 84.5% illiterate, 66.7% with perinatal mortality and 69.2% gave low birth weight infants. Neonatal infection was most common among illiterate (93.1%) while it was43.5% among educated mothers (secondary and university), 62.2%of neonatal infections occurred among neonates delivered at home in comparison to 36.8% delivered at health facility. The study stressed on importance of education of women and antenatal care in rural communities besides raising the level of services in MCH in Beni-Suif.

Key words: Gastrointestinal infection · Neonatal morbidities · Pregnant women · Rerinatal mortality · Respiratory infection

INTRODUCTION

It is estimated that more than nine million infants die before birth or in the first few weeks of life each year and that nearly all of these deaths occur in developing countries [1]. Perinatal mortality rate in Egypt is about 45/1000 total births, compared with 11/1000 in the developed countries [2]. Most perinatal deaths are due to Pregnancy and delivery-related complications, including prematurity, intrapartum asphyxia and birth trauma besides infectious diseases, such as sepsis and pneumonia; additionally, there are many indirect causes, including poor maternal health and untreated maternal infections. Other indirect causes of perinatal death include inability to recognize severe illness in a newborn, poor care seeking behavior and inadequate access to good quality medical care [3].

In Beni-Suef rural units there is no information about perinatal problems. Therefore it is important to assess the perinatal health status (morbidityand mortality) and to identify the underlying factors behind the problem.

Objectives:

- Study the perinatal mortality and morbidities in rural community in Beni- Suif.
- Study the underlying risk factors of this problem.

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SUBJECTS AND METHODS

A follow up study was conducted in two randomly selected local administrative rural units in Beni-Suif governorate; where all pregnants attending these centers were interviewed and examined. The study included pregnants during their late fetal life (28-40 weeks) and their neonates during (1st week), at the period of (1st of November 2007 to the end of February 2008). A sample size of 200 pregnants was calculated to be statistically sufficient but it was increased to 240. A specifically designed questionnaire was used to collect the data, aiming at the evaluation of maternal condition during pregnancy and assessing the neonate throughout the early neonatal period in both PHC.units. A pilot study was conducted on 10 pregnant females (results not included).

The data have been analyzed by (SPSS) Statistical Package for Special Sciences version 11 under windows XP.

RESULTS

A total 240 pregnant mothers have been followed up, there were 3 still births besides 3 early neonatal deaths (1.25% for each) while live births constitute 97.5% (Table 1and Figure 1). The highest proportion of perinatal mortality (66.7%) was observed among those born to mothers who received less than 4 antenatal care visits and (33.3%) of them were observed among those born to mothers received 4 or more antenatal care visits, this difference was insignificant (Table 2).

As regards morbidity it was observed that 29 (12.2%) passed the early neonatal period (1st week) without problems while 136 (57.4%) of the followed up neonates suffered at least one morbidity problem while non infectious hazards occurred in 72 (30.4%). In order of frequency, the most common type of infection detected was acute Respiratory Infection (36%) followed by Gastrointestinal Infection (28.7%) and the least was Umbilical Sepsis (0.5%). Among the non infectious

Table 1: Mortality Rates among Studied group.

Mortality in Studied Neonates	No.	%
Still Birth	3	1.25
Neonatal Death	3	1.25
Perinatal Death	6	2.5
Live Birth	234	97.5
Total	240	100

Table 2: Result of gestation in relation to the number of visits to MCH

	Total		No of Antenatal visits: Less than 4		4 visits and more	
Result of gestation	No	%	No	%	No	%
Normal neonates	234	97.5	130	55.6	104	44.4
Perinatal mortality	6	2.5	4	66.7	2	33.3
Total	240	100	134	55.8	106	44.2

P= 0.28

Table 3: Morbidity among the Studied Neonates

Problems among neonates	No	%
No problems	29	12.2
Infectious diseases	130*	57.4
Acute respiratory	49	36.0
Gastro intestinal infection	39	28.7
Conjunctivitis	20	14.7
Napkin dermatitis	19	13.9
Oral moniliasis	6	4.4
Umbilical sepsis.	3	0.5
Non infectious problems	72	30.4
Prematurity	27	37.5
Asphyxia neonatorum	20	27.8
Low birth weight	13	18.1
Birth injuries	9	12.5
Congenital anomalies	3	4.2
Total	237	100

* Some neonates may be affected by more than one disease

Table 4: Maternal Education in relation to presence of infection in neonates

			Presence of infection			
	Total		Present		Absent	
Educational level	No	%	No	%	No	%
Illiterate	58	24.5	54	93.1	4	6.9
Read and write	10	4.2	6	60.0	4	40.0
Primaryand Preparatory	22	9.3	12	54.5	10	45.5
Secondaryand University	147	62.0	64	43.5	83	56.5
Total	237	100.0	136	57.4	101	42.6

P= 0.00001

Table 5: Maternal Education in relation to the number of visits to MCH

			No of Antenatal visits			
	Total		Less than 4		4 visits and more	
Educational level	No	%	No	%	No	%
Illiterate	58	24.5	49	84.5	9	15.5
Read and write	10	4.2	5	50.0	5	50.0
Primaryand Preparatory	22	9.3	9	40.9	13	59.1
Secondaryand University	147	63.0	67	45.6	80	54.4
Total	237	100.0	130	54.9	107	45.1

P>0.05

Table 6: Relation between presence of infection and place of delivery

			Site of delivery			
	Total		At home.		At Health facility	
Infection	No	%	No	%	No	%
Absent.	101	42.6	45	44.6	56	40.6
Present	136	57.4	86	62.2	50	36.8
Total	237	100.0	131	55.3	106	44.7

P= 0.006

Table 7: Relation between presence birth injuries and place of delivery

			Site of delivery			
	Total		At home.		At Health facility	
Types	No	%	No	%	No	%
Absent.	208	87.8	111	84.7	97	91.50
Caput Succedaneum	9	3.8	5	3.8	4	3.77
Neonatal Asphyxia	20	8.4	15	11.5	5	4.73
Total.	237	100.0	131	55.27	106	44.73

P= 0.18

Table 8: Weight of neonates in relation to the number of visits to MCH

			No of Antenatal visits			
	Total		Less than 4		4 visits and more	
Weight	No	%	No	%	No	%
Within normal weight	224	94.5	121	54.1	103	45.9
Low birth weight	13	5.5	9	69.2	4	30.8
Total.	237	100.0	130	54.8	107	45.1

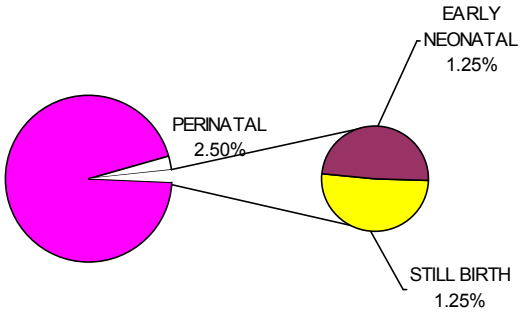
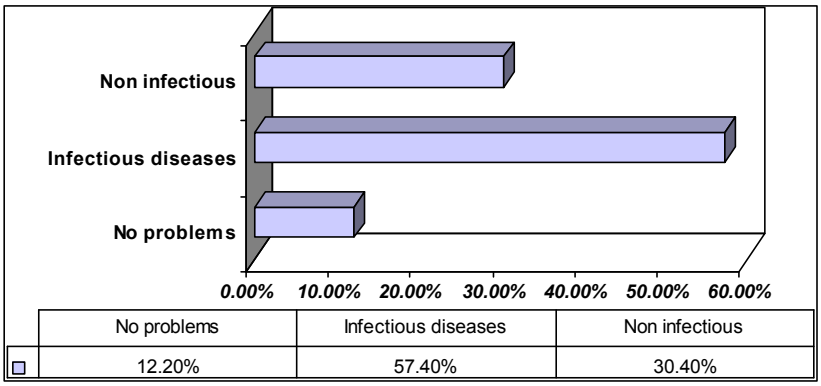
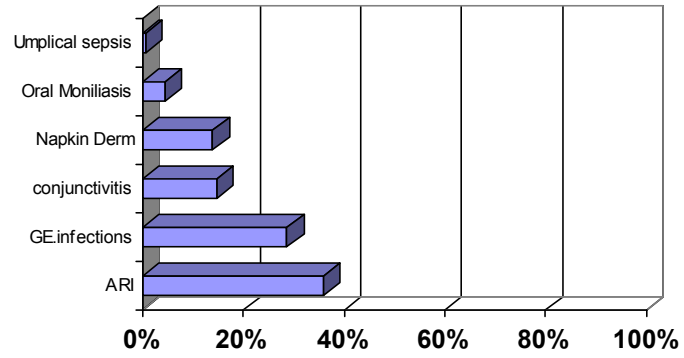


Fig. 1: Types of mortality encountered among the studied neonates



	No problems	Infectious diseases	Non infectious
□	12.20%	57.40%	30.40%

Fig. 2: Incidence of different morbidity problems among the studied neonates



ARI	GE.infections	conjunctivitis	Napkin Derm	Oral Moniliasis	Umplical sepsis
36.00%	28.70%	14.70%	13.90%	4%	0.50%

Fig. 3: Incidence of different types of infection

problems, prematurity was the most common morbidity (37.5%), followed by asphyxia neonatorum (27.8%) and the least was Congenital anomalies (4.2%) (Table 3 and Figures 2, 3). Infection was present in 54 (93.1%) of neonates to illiterate mothers while it was in 64 (43.5%) of neonates related to educated mothers, the difference was significant (Table 4). Also 84.5% of illiterate mothers visit the MCH less than 4 times while 54.4% of the educated (secondary and highly educated) visited the MCH more than 4 times; the difference was also significant (Table 5). Infection was present in 62.2% and 36.8% among those who delivered at home and at health facility, respectively and the difference was significant (Table 6). Birth injuries (caput succedaneum and neonatal asphyxia) were not affected by the site of delivery as the difference was insignificant (Table 7 and Figure 4).

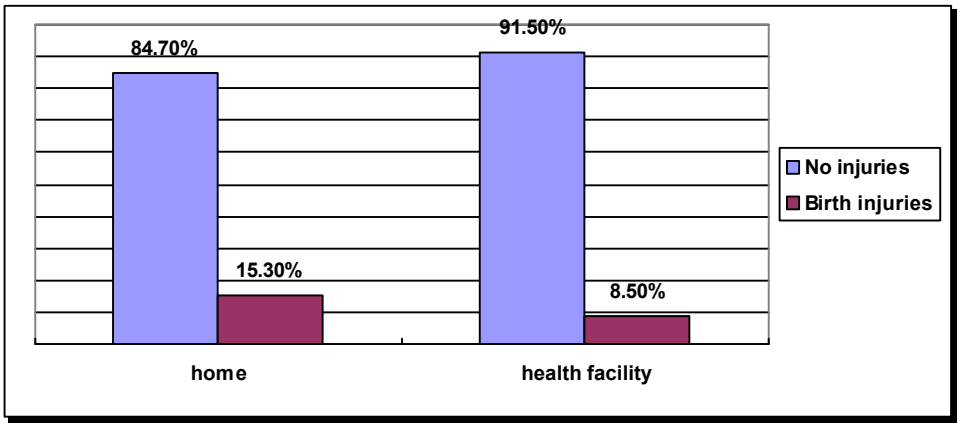


Fig. 4: Relation between neonatal injuries and place of delivery

Based on the weighting within 48 hours after birth, only 13 (5.5%) of neonates weighed less than 2500 gm, of them 69.2% were observed among those born to women with less than 4 antenatal care visits and (30.8%) to those who visited MCH more than 4 visits, this differences was statistically insignificant (Table 8).

DISCUSSION

Perinatal mortality is an important indicator of maternal care and of maternal health and nutrition; it also reflects the quality of obstetric and pediatric care available [4]. A prospective study conducted in Beni-Sueif showed that perinatal mortality was 1.53%, Stillbirth rate was 1.09% while only 2 cases of neonatal deaths representing a rate 0.44% [5].

In the current study perinatal mortality was 25 per thousand and exceeds the previous studies as it was done in rural community only that showed that the health service is in need for more evaluation. Follow up of neonates included in the study showed that (87.8%) of those neonates suffered at least one morbidity problem- whether infectious 57.4% of the total or non infectious problems 30.4%-during 1st week of life. This exceeded, El-Hissi [6] who observed that (55.1%) of neonates suffered one or more morbidity problem, this may be due to illiteracy (93.1% of infection present in infants related to illiterate mothers) or improper health care provided in rural community (infection present in 62.2% of neonates who delivered at home).

Compared to the study of Hassan [5], infectious diseases is much higher (91.07%) while more than half of the followed neonates of the study (57.4%) suffered one or more attacks of infection. This high percentage might be interpreted on the basis that the followed up of that study covered all the neonatal period (the first 4 weeks) but in this current study the follow up covered only the early neonatal period (1st week).

The perinatal mortality is also affected by the number of antenatal care visits where 66.7% of mortalities occurred among neonates born to women who received only less than 4 antenatal care visits. Stoll and Kliegman [7] mentioned that the lowest perinatal mortality rate occurs in infants of mothers who attend antenatal clinics and receive adequate prenatal care. This exceeds that registered in Kuopio University Hospital, Finland where 1.0% had no antenatal care visits and 0.77% had 1-5 visits [8]. This show the importance of prenatal care for the sake of both mothers and babies.

The incidence of LBW in Egypt was 12% and (12.6%) of neonates, respectively [5, 9]. All are higher than that of the current study (5.5%). A possible explanation for this controversy may be that the neonatal care programs initiated by the ministry of health and population are beginning to have an impact on neonatal health.

In the current study, about (44.7%) of deliveries were conducted at health facilities and (55.3%) of deliveries conducted at home. This is reflected on birth injuries as they represent 29 out of 237 neonates (12.2%), where 20 out 0f 131(15.3%) who delivered at home suffering from injuries(caput succedaneum and neonatal asphyxia) and this is in agreement with Hassan [5], where most of deliveries were conducted at home and attended by a daya or a midwife. On the other hand, the overall incidence of birth trauma was (1.31%) [5], where most of deliveries were conducted at home and attended by a daya or a midwife.

Significant birth injury accounts for fewer than 2% of neonatal deaths and stillbirths in the United States; it still occurs occasionally and unavoidably, with an average of 6-8 injuries per 1000 live births [10,11]. Proper antenatal care, improving delivery rooms and training of the newly qualified doctors and obstetricians were believed to reduce the rate of neonatal asphyxia and other birth injuries.

CONCLUSION

- Perinatal mortality sounds to be an important health problem in Egypt that requires careful consideration and meticulous attention, particularly in Rural Upper Egypt.
- Neonatal infections still occupy the top of the list of neonatal health problems.
- MCH unites does not play its role in health education and antenatal, natal and post natal services as more than half of the pregnant women delived at home.
- Illiteracy still forming an important problem in Upper Egypt.

RECOMENDATIONS

- Conduct health education messages aiming at raising the awareness of women about importance of antenatal, natal and post natal care besides the importance of preventing home delivery.
- Encourage girls' education.
- Implementation of premarital care
- Comprehensive care of the female child with concentration on childhood immunizations.
- Training of primary care providers and dayas on management of delivery, early diagnosis of delivery complications and resuscitation of the neonate.
- Supervision of the performance of primary care providers.
- Raising awareness and creating positive attitudes towards healthy practices such as female education, rising age of marriage, women empowerment, care of female child, seeking antenatal and natal care services.

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