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VESICO-VAGINAL FISTULA IN NORTHERN NIGERIA WITH MEASURES TO PREVENT AND CONTROL

BY

S.T. AHMED, T. AHMED AND Q.B. AHMED

ABSTRACT

Vesico-vaginal fistula (VVF) was found to be caused by both obstetrics and socio-cultural practices either directly or indirectly. The customs of people in northern Nigeria and the culture of her ethnic groups encourage young age marriage and teenage child bearing. Lack of education in women who by their traditions prefer to deliver at home attended by non-medico personal further complicates the problem. Most women have a deep antipathy against antenatal care and hospital delivery. The traditional birth attendant of the performs a crude episiatomy called `Gishiri cut` with a razor blade which mostly ends up in vesico-vaginal fistula.

KEY WORDS

Episiatomy, Gishiri cut, Kunya, Obstructed labour, Partogram, Vesico-vaginal fistula

INTRODUCTION

Vesico-vaginal fistula is an abnormal communication between the epithelial surface of bladder and vagina (Fig. 1) with a total incontinuation of urine. The disease is kept hidden at the initial stage, but when it becomes difficult to maintain personal hygiene due to foul smell, such women become repulsive and are treated as an outcast of the society and left to live as destitudes (Ahmed, 1988). The cause of vesico-vaginal fistula (VVF) are classified into obstetric and socio-cultural. Teenage pregnancy is the main cause of VVF in northern Nigeria (Ahmad and Ahmad, 1994). Traditionally the girls get married under the age of 15 years and most of them enter into their matrimonial home even before they experience menarche (Maduci et al., 1968). At this age the pelvis is bony, narrow and underdeveloped. Also they do have antipathy for antenatal care and hospital delivery (Harrison, 1983). During the delivery, foetus is too large to pass through the birth canal. This coupled with inadequate uterine contractility to push a child as a normal delivery invariably results in obstructed labour (Mati, 1984 and Lawson, 1967) and ends up into a ruptured uterus and vesico-vaginal fistula (Gunaratne and Mati, 1982). Obstructed labour is defined as labour which could only be relieved by surgical intervention. During labour, the bladder is pushed in the abdomen as foetus occupied pelvis. The skull of the fortus lies just behind the bladder neck. This brings bladder between foetal skull and pulses bone. Any crude or careless episiatomy would involve the bladder and results in VVF. If the cut does not extend beyond mucosal layer no problem arises, but in most cases it gets mush deeper causing VVF (Ahmed and Ahmed, 1994). Gishiri cut is believed to be a traditional treatment for an obstructed labour, infertility, dysuria, dysparunia, amenorrhea and backache (Lister, 1980), menstrual and marital problems, coital difficulty, and prolonged labour (Harrison, 1985, a). A severe haemorrhage and genital sepsis may threaten the life of the patient (Harrison, 1980).

The objectives of the present investigations are as follows:

a) To identify group of women predisposed to VVF and compare them with normal women

b) To determine obstetrics causes or socio-cultural practice which either directly or indirectly cause VVF. and

c) Suggest measures to prevent and control vesico-vaginal fistula.

MATERIALS AND METHODS

Geographical, Physical, and Socio-cultural Background of Women under Study

The incidence of VVF was investigated in 5 centres including a private clinic (Mayfair Clinic), a medical centre (Anna-Kitch Medical Centre), a missionary hospital (Wusasa Hospital), a VVF rehabilitation centre (Gidan Mata) and in a satellite village (Tukur Tukur) all at Zaria, Nigeria during December 1987 to January 1988 (Table 1). The women attending the clinic hospitals and a 5 percent random sample of Tukur Tukur village consisting of 180 women were investigated. Some problems were encountered in data collection in Tukur Tukur village due to local custom called `Kunya` which prevents a young woman giving any information about her pregnancy and child birth. Such information was therefore collected through an elderly woman at the house.

The data in table 2 and 3 and columns 2 and 3 is worked out on the basis of a total frequency of 180 women which constituted the investigation material and is expressed in terms of percentage. Therefore, columns 2 and 3 will add to 100. The fourth column is a mean of columns 2 and 3. Columns 5 and 6 are the percentages of frequency of each item within a column either for women with VVF (out of a total frequency of 39) or for women without VVF (total frequency of 141). These columns will therefore add to 100 each. It was done with an objective of comparing the items on a uniform entity in both columns, women with VVF and without VVF.

The geographic, ethnic and physical and socio-cultural features of the women population under study is shown in table 1. About half of VVF cases were recorded from Mayfair Clinic which is the main centre for VVF reports in Zaria, followed by Gidan Mata, a rehabilitation centre for VVF patients in Zaria (table 1.1). The state of origin of the VVF patients revealed that Kaduna, Kano, Katsina, Sokoto and Bauchi ranked in the above order for the number of patients recorded (table1.2). When the frequency was examined in respect to their ethnic faith, Hausa (79.6%), Fulani (15.3%) and Nupe (5.1%) were inflicted with VVF (Fig.2) and there were no VVF cases reported in Igbo and Yoruba tribe within the period of investigation (table 1.3). A great majority of the patients (84.7%) were short in status and measured less than 1.5m among the women with VVF group (table 1.4). A majority of the women (48.6%) among the VVF were in the age group of 15-24 years which is about twice the normal women (table 1.5). As regards their marital status 38.4 percent of the VVF patients were separated, followed by married (28.2%) and divorced (23.1%) as shown table 1.6. All the VVF patients (100%) had no formal education as compared with only 35.5 percent of the women with out VVF had no formal education (table 1.7). When their occupation was examined, a majority of them (46.3%) were house wife, Followed by food seller, trader and seamstress (table 1.8).

TABLE 1: Geographic, ethnic, physical and socio-cultural characteristics of women population under study.

Factor under study	Total frequency (%) of women With VVF	Without VVF	Mean	Frequency of women VVF(%)	Without VVF (%)
1.1: **Centre of Study**					
Mayfair Clinic	11.3	17.7	14.5	51.8	22.6
Anna-Ketch Med. Cent	2.1	0.0	1.1	9.6	0.0
Wusasa Hospital	2. 1	0.0	1.1	9.6	0.0
Gidan Mata	4.2	0.0	2.1	19.3	0.0
Tukur Tukur	2.1	60.5	31.3	9.6	77.4
Total	**21.8**	**78.2**		**99.9**	**100.0**
1.2 :**Name of State**					
Bauchi	2.2	0.0	1.1	10.2	0.0
Kaduna	7.7	70.2	39.0	36.0	89.3
Kano	4.4	0.0	2.2	20.6	0.0
Katsina	4.4	0.0	2.2	20.6	0.0
Sokoto	2.4	0.0	1.2	12.6	0.0
Other	0.0	8.4	4.2	0.0	10.7
Total	**21.0**	**78.6**		**100.0**	**100.0**
1.3: **Ethnic faith**					
Hausa	17.2	58.8	38.0	79.6	74.8
Fulani	3.3	8.8	6.1	15.3	11.2
Nupe	1.1	1.6	1.4	5.1	2.0
Igbo	0.0	6.1	3.1	0.0	7.8
Yoruba	0.0	3.3	1.6	0.0	4.2
Total	**21.6**	**78.6**		**100.0**	**100.0**
1. 4: **Height (cm)**					
130-139	7.8	10.0	8.9	35.9	12.8
140-149	10.6	9.5	10.1	48.8	12.1
150-159	3.3	18.3	15.8	15.2	36.1
160-169	0.0	30.5	15.3	0.0	39.1
Total	**21.7**	**78.3**		**99.9**	**100.0**
1.5: **Age (Years) at the time of study**					
15-24	10.5	20.6	15.6	48.6	26.3
25-34	6.1	37.3	21.7	28.2	47.6
35-44	2.8	17.2	10.0	12.9	21.9
45-54	2.2	3.3	2.8	10.2	4.2
Total	**21.6**	**78.4**		**99.9**	**100.0**
1.6 :**Marital status**					
Single	0.0	0.0	0.0	0.0	0.0
Married	6.1	72.3	39.2	28.2	92.3
Widowed	2.2	1.1	1.7	10.2	1.4
Separated	8.3	2.3	5.3	38.4	2.9
Divorced	5.0	2.7	3.9	23.1	3.4
Total	**21.6**	**78.4**		**99.9**	**100.0**

Factor under study	Total frequency (%) of women			Frequency of women	
	With VVF	Without VVF	Mean	VVF(%)	Without VVF (%)
1.7 :**Educational level**					
No education	21.7	27.8	24.8	100.0	35.5
Primary school	0.0	35.0	17.5	0.0	44.7
Secondary School	0.0	6.1	3.0	.0.0	7.8
Post-Secondary	0.0	9.4	4.7	0.0	12.0
Total	**21.7**	**78.3**		**100.0**	**100.0**
1.8 : **Occupation of women**					
House wife	10.0	50.6	30.3	46.3	64.5
Food seller	5.6	8.9	7.3	25.9	11.4
Trader	3.3	12.2	7.8	15.3	15.6
Seamstress	2.7	0.0	1.3	12.5	0.0
Other	0.0	6.7	3.3	0.0	8.5
Total	**21.6**	**78.4**		**100.0**	**100.0**

A critical analysis of general demographic nature of the women population under study revealed that out of a total 180 women investigated 39 were VVF inflicted. On percentage basis it becomes 22 percent. This high percent incidence of VVF in this study was due to the nature of investigation procedure employed. At 3 centres. i.e. Anna-Kitch Medical Centre, Gidan Mata and wusasa Hospital only VVF patients were investigated. Therefore in table 1.1 column 3 women without VVF are zero. This has inflated the percentage of VVF patients to total women population. The fact that all VVF cases belonged to 5 northern state is a clear indication that it is influenced by socio-cultural customs. The customs are early marriage and teenage child bearing which have a direct bearing with the incidence of VVF. This investigation was further supported by the occurrence of VVF in Hausa (79.6%). Fulani (15.3%) who are the main residents of this region. A close examination of the data on marital status revealed that a majority (61.5%) of VVF patients do not live at their matrimonial homes. They are either separated (38.4%) or divorced (23.2%) are either at the initial stage of VVF infliction or live at the out houses. The society treats women with VVF as those who have disgraced themselves. They are ignored and neglected by .heir own people. All VVF patients have no formal education at all. Education increases their awareness against orthodox medical treatment like gishiri cut or customs like kunya and promotes the use of available medical facilities including antenatal clinics. Studies in 47 countries of Africa, Asia and Middle East has revealed that a formal education is a fundamental need for health care of mother and baby (Northern and Hofatatter, 1981). Tahzib (1983) also reported that 98 percent of the VVF cases had no formal education. The result of present investigation also confirm that 100 percent of the VVF cases had no formal education.

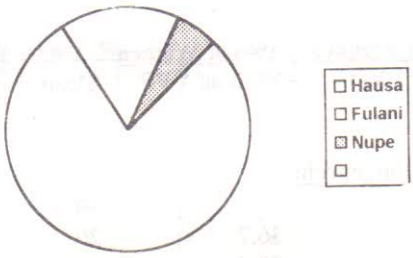

Fig.2 Ethnic groups of recorded VVF cases

RESULTS

The obstetric causes of VVF include age at menarche, antenatal care, duration of labour, age at first delivery, parity, height of women and mode and out come of delivery (table 2). A majority of VVF cases (84.7%) attained menarche at the 10-14 years (table 2.1) When the data for antenatal care within the VVF group was examined 71.1 percent did not attend any antenatal clinic The corresponding figure for non VVF women was only 19.1 percent (table 2.2)The frequency for the duration of labour was found to be inversely proportionate in women with VVF when compared with women without VVF (table 2.3). A high frequency (71.1%) of women was found with duration of labour between 25-72 hours in VVF patients. Thus, such an obstructed labour is the main cause of Gishiri cut. A majority of women within VVF group (82.4%) delivered at the youngest age of 10-14 years (table 2.4) and were at the first parity (81.1%) (table 2.5) The mode of delivery for VVF women was mainly instrumental and 29 percent of the babies survived (table 2.6) none of the spontaneous vaginal deliveries resulted in live birth. When the relationship between the height of women and mean duration of labour was considered, it was found that the taller the women shorter was the duration of labour both in women with and without VVF (table 2.7).

The socio-cultural causes of VVF are shown in table 3. The include attendant during delivery, choice of treatment for labour lasting more then 24 hours, reason for Gishiri cut, mean age at first marriage in respect to the ethnic faith, complications associated with VVF and age at first marriage. Within the VVF group of women a high percentage of deliveries (48.7%) was attended by traditional birth attendant (table 3.1) followed by mother (35.5%). The choice of treatment for labour lasting more than 24 hours revealed that the highest percentage (51.5%(was traditional birth attendant (table 3.2) and the least was for the hospital (6.6%). The main reason for Gishiri cut (table 3.3) was no menses (50%) followed by prolonged labour (25%) within the VVF group. The mean age at first marriage (table 3.4) was found to be 13.7, 14.5 and 14.8 for Fulani, Nupe and Hausa ethnic groups, respectively. The major complication associated with VVF were cessation of menses (45.5%), followed by foot drop (33.3%) and loin pain (18.2%) as shown in table 3.5. The age at first marriage (table 3.6) within the VVF group revealed that 54.2 percent of the women belonged to the group of 10-14 years and the rest 45.8% percent were in the age group of 15-19 years. When the VVF population was investigated according to their cause, 77.7 percent owe their origin to obstetric cause and 22.3 percent due to socio-cultural causes (Fig. 3).

Table 2 : Obstetric causes of vesico-vaginal fistula

Factor Under VVF(%)	Total Frequency (%) of Women With VVF	Without VVF	Mean	Frequency of Women WithVVF(%)	Without
2.1: **Age (years) at menarche**					
10-14	18.3	41.7	30	84.7	53.2
15-9	3.3	36.7	20	15.3	46.8
Total	**21.6**	**78.4**		**100.0**	**100.0**
2.2 **Antenatal Cases**					
Received	5.7	**65.0**	35.4	28.9	80.9
Not Received	14.0	15.3	14.6	71.1	19.1
Total	**19.7**	**80.3**		**100.0**	**100.0**
2.3 **Duration of Labour(hrs)**					
1-24	2.5	69.5	36.0	12.7	86.6
25-48	7.6	10.8	9.2	38.6	13.4
49-72	6.4	1.1	3.2	32.5	0.0
73-96	3.2	0.0	1.6	16.2	0.0
Total	**19.7**	**80.3**		**100.0**	**100.0**
2.4 **Age (yrs) at first delivery**					
10-14	17.8	0.0	8.9	82.4	0.0
15-19	3.8	53.6	28.7	17.6	68.4
20.24	0.0	21.0	10.5	0.0	26.8
25-29	0.0	3.8	1.9	0.0	4.8
Total	**21.6**	**78.4**		**100.0**	**100.0**
2.5 **Parity**					
1	15.9	15.3	15.6	81.1	19.0
2	0.0	13.4	6.7	0.0	16.7
3	0.0	15.4	7.7	0.0	19.2
4	1.2	10.8	6.0	6.1	13.4
5	2.5	25.5	14.0	12.8	31.7
Total	**19.6**	**80.4**	**100.0**	**100.0**	

2.6 **Mode and outcome of delivery of VVF cases**

Mode of delivery	Live birth	Still birth	Mean
Spontaneous Vaginal	0.0	58.5	29.0
Instrumental	12.9	29.0	21.0
Total	**12.9**	**87.1**	

2.7 **Height and mean duration of labour**

Height (cm)	Mean duration of labour (hrs) in women With VVF	Without VVF	Mean
130-140	64.5	31.2	47.85
141-150	40.5	28.1	34.30
151-160	24.0	11.5	17.75
160-170	0.0	11.5	5.50
Mean	**43.0**	**20.58**	

Table 3: Socio-cultural causes of VVF

Factor under study VVF	Total frequency (%) of Women With VVF	Without VVF	Mean	Frequency of Women With VVF	Without
3.1 **Attendant during delivery**					
Self	0.0	9.6	4.8		
Medical Peers.	3.1	43.3	23.2	15.8	12.0
Mother	7.0	11.5	9.3	35.5	14.3
Trad. Birth Attend.	9.6	15.9	12.8	48.7	19.8
Total	**19.7**	**80.3**	**100.0**	**100.0**	
3.2 **Choice of treatment for labour lasting more than 24 hrs**					
Stay home	5.1	12.1	8.60	25.8	15.1
Hospital	1.3	47.1	24.20	6.6	58.7
Koranic verses	3.2	2.5	2.85	16.2	3.1
Trad. Birth Attd.	10.2	18.5	14.35	51.5	23.1
Total	**19.8**	**80.2**	**100.0**	**100.0**	
3.3: **Reason for "Gishiri" cut**					
No meses	36.4	9.1	22.75	50.0	33.3
Prolonged labour	18.2	0.0	9.10	25.0	0.0
Childlessness	9.1	18.2	13.65	12.5	66.6
Dyspareunia	9.1	0.0	4.60	12.5	0.0
Total	**72.8**	**27.3**		**100.0**	**99.9**
3.4 **Mean age at first marriage (yrs) according to ethnic faith**					
Hausa	14.80	14.77	14.79	79.6	74.8
Fulani	13.66	13.87	13.77	15.3	11.2
Nupe	14.50	15.33	14.92	5.0	2.0
Yoruba	0.00	22.00	22.00	0.0	7.8
Igbo	0.00	25.27	25.27	0.0	4.2
Mean	**14.32**	**18.25**			
Total	100.0	100.0			

3.5 **Complications associated with VVF**	
Recto-vaginal fistula	3.0%
Loin pain	18.2%
Foot drop	33.3%
Cessation of menses	45.5%
Total	**100.0**

3.6: **Age (yrs) at first marriage**					
10-14	11.7	31.7	21.7	54.2	40.4
15-19	9.9	33.9	21.9	45.8	43.2
20-24	0.0	6.1	3.1	0.0	7.8
25-29	0.0	6.7	3.3	0.0	8.5
Total	**21.6**	**78.4**		**100.0**	**99.9**

DISCUSSION

Bearing a child at a young age was one of the crucial causes for VVF (Ahmad and Ahmad, 1994). In the present investigation, among VVF group 82.4 percent of the women delivered at the age

between 10-14 years (table 2.4). Bearing a child at this young age is like a child bearing a child of her own. At this tender age the growth of pelvis may not have completed. This predisposes the young mother to caphalopelvic disproportion which result in obstructed labour. Moerman (1982) concluded that the height of a woman may not be a good indicator of the size of bony pelvis and birth canal as their development is much slower than the height and it takes 2-3 years more for completion of their development after the height has ceased. Thus, the development of pelvic bone is complete at the age of 18 years. Therefore, women after the age of 18 years are not predisposed to obstructed labour. Reports from advanced countries suggested that teenage pregnancy is only maginally risky when compared with the matured women (Russell, 1982; Dott and Fort, 1976; Sandstorm, 1977 and Bremberg, 1977). This conclusion may not hold true in developing countries and to Nigeria in particular, especially under the current depressed economy. In advance counties, girls are educated, eat balanced diet, attend antenatal clinics and use birth control measures at their young age, marriage or child bearing. Harrison et al. (1985,d) observed that out of 1065 booked cases of Hausa-Fulani primigravidae, half of them were aged 10-16 years and grew on an average 4 cm between the time of booking and delivery. In another study Harrison et al. (1985,c) reported that out of a total of 69 primigradae, 59 were age between 13-16 years. When they were placed on antimalaria drug, folic acid and iron during the second half of their pregnancy, grew from 2-16 cm. This is a clear indication that these teenage mothers have not completed their skeletal growth. At this young age their pelvis is bony, narrow and underdeveloped. These young mothers are illiterate, illnurished,, do not attend the antenatal clinics, have antipathy for hospital delivery and bear child during their own childhood period. Therefore, teenage child bearing is much more risky than what it is considered in advanced countries (Effiong and Banjoko,, 1975 and Harrison et al. 1985,f). Labour is one of the most horrifying experience for women in general and in the third world in particular where facilities are underdeveloped (Rao, 1975; Zake, 1982; Karan et al,. 1983). Duration of labour was more than a day in 87.3 percent of the VVF cases and less than a day in 86.6 percent in the women without VVF. The mean duration of labour in VVF women was found to be 40.3 hours as against 13.7 hours only in women without VVF in the present study. Labour monitoring by a simple chart called Partogram may quickly and easily predict the cases of obstructed labour to refer them to specialist hospital to avoid any clamity of VVF. Harrison (1985,b) reported that out of 79 unbooked cases 66 developed into VVF. Although these women delivered in the hospital, yet, their critical examination revealed that their injury was associated with cranitomy. Virtually in every case the damage to the bladder and vaginal wall had occurred during the prolonged obstructed labour at home. In addition, 65 children born to women with VVF only 5 survived, 3 with spontaneous delivery, one each from forced delivery and caesarean section. Forty six foetuses were dead on admission, 6 died vetro after admission and 8 were neonatal deaths. Gunaratne (1982) reported still births among VVF s high as 79 percent and those who were born alive, more then 50 percent died in neonatal period due to intrauterine infection. In the present investigation also 87 percent of the VVF cases gave birth to still born.

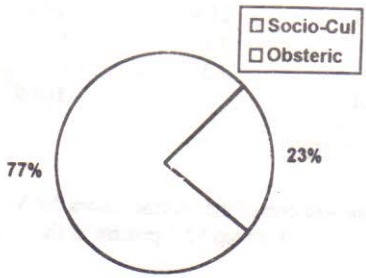

Fig. 3 Causes of VVF population investigated

Fig. 3 Causes of VVF population investigated

Antenatal care has a tremendous impact on the health and care of the baby and mother. The maternal death rate was lowered from 29 to 2.5 per 1000 when the expected mother attended antenatal clinic (Harrison et al., e). In the present investigation also 71 percent of the VVF cases did not attend antenatal clinic, therefore, ended up in VVF. Harrison at al. (1985, f) in another study observed that maternal and fetal health and survival were poorest among primigravidae and highly parous women. Gunarathne (1982) reported that 30.6 percent of the women with VVF were of the parity of 5 or more. He further suggested that VVF in highly parous women is either due to injury during the operative procedure or rupture of uterus. In the present study also the highest frequency of VVF (81%) was in primigravidae as observed by Harrison et al. (1985,f) and in women of 4th and above parity (20%) which is in conformity with the result of Gunaratne (1982).When the socio-cultural aspects were considered, gishiri cut has serious consequences such as VVF (Harrison et al., 1985). It may divide the urethera completely, or may cause sepsis which may even result into death. In another study Harrison et al. (1985,e) observed that girls of northern ethnic groups raised in a traditional system have had a more deprived childhood with poor nutrition at their parental house. When they get married into a similar matrimonial house, their circumstance may not differ much. Her pregnancy is at an increased risk. In addition, the delivery will be managed by an illiterate traditional birth attendant. When the serious complications develop, professional help is sought. Often too late if at all. The problem is deeply rooted in their belief and custom. This has been the results of the present investigation also. Therefore, unless the social attitude is changed completely there will be a limited from the high frequency both in VVF and non-VVF groups (51.1 and 23.1 %, respectably). It is mainly because the traditional birth attendant is a part of their belief and custom. Thus, the labour and delivery conducted by an illiterate non-medical personal shall certainly redispose the women for development of VVF. Harrison et al. (1985,f) reported that out of 79% women, 66 were VVF and percent of them were Hausa-Fulani. In the present investigation also Hausa and Fulani constituted 94.9 percent of the VVF cases. Many women due to lack of education and under their traditional belief and custom regard birth as a natural phenomenon which is surrounded by mysterious and super natural process. It should therefore, be left alone. They therefore, allow prolong labour to stay on itself without knowing its dangerous consequences. Often they ask for traditional treatment called gishiri cut performed by an illiterate birth attendant with a razor blade. This operation ends in most of the cases into a VVF (Harrison, 1981). A young mother is supposed to be shy and should not discuss any thing about her pregnancy and child birth with any one (Trevitt, 1973).

RECOMMENDATIONS

The results of the present investigations lead to the following recommendations to improve the health care system:

1. The unfortunate cases of VVF should not be neglected to live a life as destitudes. The relatives and the non-governmental organisations should raise funds to establish more VVF rehabilitation centres like Gidan Mata. The VVF patients should be taught petty trades to make their living more confortable and respectful.

2. Community should be educated about the importance of female education. The girls should not discontinue their schooling for the purpose of marriage. They should be educated and encouraged to marry at a stage when a female body is fit anatomically and physiologically for child bearing which is 18 years. If possible, state law should be formulated to discourage early marriage and teenage child bearing.

3. Adult education classes should be conducted for women beyond the age of schooling. These who can not afford to attend even such classes, they should be educated through other media like radio, television charts, etc.

4. The hazards of early marriage and teenage child bearing and their consequences like obstructed labour and VVF should be very well explained through all media.

5. The traditional custom like kunya should be abolished as they will discourage a girl to attend antenatal clinic. If the women receive a limited or no antenatal care the problem of VVF shall remain unabated.

6. When the economic condition of the country improves: (a) Subsidised/free surgical treatment for VVF patients (b) More health care centres to be established (one for every 5 km square) and improved roads and communication systems as most people live in rural areas, and (c) Traditional birth attendants to be trained in hygiene, methods of conducting delivery and identification of risk cases and use of partrogram to refer risk cases to the hospital and she should be employed by the health delivery system after such training.

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