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RESEARCH ARTICLE

OBSTETRIC FISTULA: RISK FACTORS AND SOCIO-DEMOGRAPHIC CHARACTERISTICS AMONG PATIENT ADMITTED IN AL-SADAQA TEACHING HOSPITAL, ADEN, REPUBLIC OF YEMEN (1ST JAN 2014 - 31ST DEC 2019)

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Abstract

Obstetric fistula is one of the major obstetric problem that results from prolonged obstructed labor. This condition mainly effect on women in the underdeveloped and developing nations of the world specially in Africa and Asia and Yemen one of them. Each year, an estimate of 50, 000-100, 000 women develop obstetric fistula worldwide. It occurs in areas where access to care at childbirth is limited or poor quality care during intrapartum period. to study the risk factors (social, demographic and obstetric) of Obstetric Fistula among Al-Sadaqa Teaching Hospital patients, Aden- Yemen. A hospital based cross-sectional descriptive study was carried out for 51 medical files of obstetric fistula patients admitted to fistula unit in Al-Sadaqa Teaching hospital in Aden city during the study period from 1st Jan 2014 to 31st Dec 2019.Using available data technique and questionnaire were used to collect the study data from medical files available in the hospital . This data were analyzed by SPSS software (version22). Most of obstetric fistula patients were from rural areas (60.8%), in the age group 20-34years (56.9%). Early age of marriage of age group 15-20 years (80.4%), illiterate (47.1%) and still married despite having obstetric fistula (92.2%)with non-used ANC in the causative pregnancy (41.2%) and have history of previous one and more caesarian section (19.6%, 11.8% respectively) .Most of participants delivered vaginally (54.9%) by midwives (72.5%) where prolonged obstructed labor was the most cause (49%) and most common type is rectovaginal fistula (41.2%) and the majority of fistula repair was through transvaginal (68.6%). The risk factors of obstetric fistula are early age of marriage, illiteracy, and lack of antenatal care, while obstructed prolonged labor was most common cause. Rectovaginal fistula is the commonest type. The study findings clear that obstetric fistula is important obstetric problem faced community and increasing maternal morbidity, significance of both treatment and prevention activities needed, also interventions that focus on improving access to maternal health care, emergency obstetric care, and increase rate of caesarean section when indicated.

Keywords: Obstetric fistula, Risk factors, Early age of marriage.

Introduction:

Worldwide each year more than half a million healthy young women die from complications of pregnancy and childbirth. The world health organization (WHO) estimates that globally, over 300 million women currently suffer from short or long -term complications arising from pregnancy or childbirth, with around 20 million new cases arising every year.[1] Yemen remains among the countries with the highest maternal mortality in the region with 148 maternal deaths per 100, 000 live births.[2]

Around two million women live with untreated condition specially in Africa, parts of Asia and the Arab region. [3] The world health organization (WHO) estimate of 50, 000-100, 000 women developed obstetric fistula (OF) each year. [4] The worst affected countries occur in the ' fistula belt' across sub-saharan Africa from Mauritania in the west to Eritrea in the east, where 33000 new fistula

cases develop every year. [5] Obstetric fistula is a common problem in our socioeconomic setup.

Obstetric fistula is a debilitating obstetric condition that resulting from prolonged obstructed labor mostly affected women in the underdeveloped and developing nations of the world specially in Africa and Asia, [6] where obstructed labor occurs in approximately 5% of births, causing 8% of maternal deaths, while obstetric fistula eliminated in high-resource countries.[7]

Obstetric fistula is an abnormal connection between the vagina and rectum (rectovaginal fistula). or between the vagina and bladder (vesicovaginal fistula), due to different reasons, like product of prolonged , obstructed and unattended labor. [8] In severe cases, more than one type of fistula can develop.

Women suffering from fistula live with chronic urinary and fecal incontinence, and may lead to other medical complications such as infection, genital ulceration, pain and secondary infertility. [9] Many women report feeling ashamed about their condition and therefore alienate themselves from friends and family, because of the smell of urine that results, leading to keeping the victims in poverty, isolation and depression.[10]

The prevalence and incidence of obstetric fistula are not clear, but it is prevalent in areas of world where emergency obstetric care is limited, nutrition is poor, early age of marriage, poor antenatal care, neglected prolonged labor, usually conducted by untrained birth attendants. [11] Obstructed labor remain the most important cause of obstetric fistula in developing countries (overall 90%). Other causes of obstetric fistula include caesarian section with or without hysterectomy. [12]

Major risk factors for obstetric fistula include early marriage, early age at pregnancy , short stature, illiteracy, poverty, not attending antenatal care, rural place of residence or living far away from a health facility, lack of emergency obstetric services, and poor health services.[13] Other risk factors contribute to obstetric fistula include primiparity, prolonged labor, stillbirth delivery, and poor socioeconomic status. [14]

Obstetric fistula is a preventable and treatable condition. Prevention of fistula happens when mothers receiving proper care during child birth through competent birth assistance, potentially including caesarian section to eliminate prolonged obstructed labor. [15] The treatment of obstetric fistula consists of surgical repair of the fistulas, it sometimes need multiple surgeries to get a complete resolve of the problem. [16]

No population-based data for prevalence of obstetric fistula is available. Research on causes and consequences of obstetric fistula is needed. The underestimation of fistula cases is another issue of concern. In Yemen the actual incidence of obstetrical fistula is not well-documented. The best estimates for Yemen suggest that some 5, 300 women and adolescents die each year due to pregnancy- related complications. [17] Additionally, approximately another 106, 000 women and adolescents will suffer from injuries or disabilities caused by complications during pregnancy and childbirth each year.[18] Despite the high burden of obstetric fistula in sub-Saharan Africa and Asia , still the researches not addressing the awareness about the magnitude and the risk factors of obstetric fistula.[19]

In order to determine the risk factors and socio-demographic characteristics of obstetric fistula, we carried out this retrospective study in Al-Sadaqa Hospital, Aden, Yemen, from 1st Jan 2014- 31st Dec 2019.

Method:

Study design:

this study is hospital- based, descriptive cross-sectional retrospective study , for patients diagnosed as obstetric fistula in fistula care center at Al-Sadaqa Teaching Hospital, Aden, Yemen during period from January 1st 2014 to December 31st 2019.

Study population:

Involved all patients that diagnosed as obstetric fistula and admitted in fistula care center at Al-Sadaqa Teaching Hospital during the period of study.

Study area:

Al-sadaqa Teaching Hospital (Aden governorate): is one of the main central hospitals for maternal and childhood services in Aden governorate . The work in this hospital started as main hospital providing different maternal (from 1990), and childhood services (1987), for all population in Aden governorate , in addition to the complicated cases from the governorates of Lahj, Abyan, Al-dala, a, Shabwah and other northern governorates. The hospital consists of Pediatric and Neonatology department, Gynecology and Obstetric department, and Internal Medicine .

The Gynecology and Obstetric departments consists of 140 beds, distributed between the following wards:

- Gynecology ward.
- Antenatal ward.
- high risk wards for admission of all pregnant women with serious obstetric complications.
- Post operative ward

In addition to:

- operation theater : which performs work for 24 hr , deals with all patients who need emergency surgical intervention in addition to the daily ordinary operations.
- Labor delivery unit which consist of the following rooms:

- pre labor room: where all the cases that have labor pain spontaneous or induced are received in addition to any patients during the duty , before referring them to specific ward.

This room was supplied by two additional services since 2001, tococardiographic machine for continuous monitoring for fetal heart activity and uterine contraction, and ultrasound machine .

- delivery room: at which vaginal delivery is happen.
- post delivery room: here women after delivery kept for couple of hours for observation before discharging.

In this labor unit, there are 3-4 resident doctors, one on call medical specialist and one obstetrician for 24 hours duty.

In addition there is obstetric fistula unite which was organized by help of UNFPA in 2012 and contain about 18 beds.

Inclusion and Exclusion Criteria:

Inclusion Criteria:

All patients that admitted in fistula care center at Al Sadaqa Hospital and diagnosed as obstetric fistula and with complete obstetric history.

Exclusion Criteria:

1- Other patients with fistula that caused by non-obstetric causes (sexual abuse, malignancy, gynecological operation and post chemotherapy).
2- women with incomplete data.

Data Collection:

By well designed closed questionnaire will be used for data collection with the variables. The data will collected by the author from patient's record in the archiving department of the hospital .

Data Processing and Analysis:

Data processing and analysis are performed using the statistical package for social sciences (SPSS) software version 22. The qualitative variables are presented as frequency and percentage, difference are tested by using chi-square or Fischer's exact tests as indicated, assuming 95% confidence limits and p-value of less than 0.05 as statistically significant ($p<0.05$).

For the quantitative variables with normal distribution , the results presented as mean values with standard deviation.

During the study period (Jan.1st 2014 to Dec.31st 2019), there is medical records of the 51 patients who had obstetric fistula in Al-Sadaqa Teaching Hospital, Aden, Yemen.

Results:

In table 1, the mean age of participants was 30.88±7.967 and majority of them (56.9%) at age 20-34 years old, and those at age <20years old consisted only 9.8% of the participants. Women from rural areas in this study consisted the majorities with 60.8%. About 92% of women were married and 94% were house wives. nearly to half (47.1%) of participants were illiterates.

Table 1: Distribution of studied sample by socio-demographic characteristics

Variables	No.	%
Women's age (Mean 30.88±7.967)		
<20 years	5	9.8
20-34 years	29	56.9
>34 years	17	33.3
Residency		
Rural	31	60.8
Urban	20	39.2
Marital status		
Married	47	92.2
Divorced after problem	4	7.8
Occupation		
House wife	48	94.1
Professional	3	5.9
Educational Level		
Illiterate	24	47.1
Read and write	9	17.6
Primary	10	19.6
Secondary	6	11.8
University	2	3.9

In table (2) the majority of women marriage (80.4%) at age 15-20 years old, while age at causative delivery was 20-34 years old with 70.6%. Parity with ≥5 consisted 41.2% followed by those with parity 2-4 (31.4%).

Table 2: Distribution of Studied sample by obstetric characteristics

Characteristics	No.	%
Age at Marriage (mean 18.41±2.707)		
<15 Years	7	13.7
15-20 Years	41	80.4
>20 Years	3	5.9
Age at causative delivery (mean 28.33±6.653)		
<20 years	6	11.8
20-34 years	36	70.6
>34 years	9	17.6
Parity		
1	14	27.5
2-4	16	31.4
≥5	21	41.2

Note: % taken form total of Cases (51)

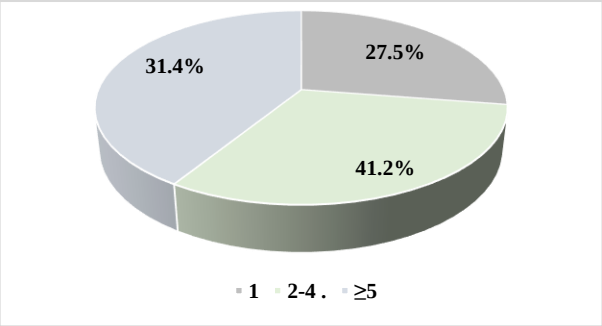

Fig 1: Distribution by Parity

More than half (54.9%) of participants delivered normally, and 54.9% of them delivered at hospital. Those delivered by midwives consisted 72.5%, while those delivered by doctors appeared among 25.5% of participants. 66.7% of mothers delivered during duration <24 hours, and 64.7% of them had alive birth baby. 68.6% of mothers had no history of CS, shown in table (3).

Table 3: Distribution of Studied sample by delivery characteristics

Characteristics	No.	%
Mode of delivery		
Vaginal	28	54.9
Abdominal	23	45.1
Place of delivery		
Home	20	39.2
Health center	3	5.9
Hospital	28	54.9
Person attendant delivery		
Doctors	13	25.5
Midwives	37	72.5
Relatives	1	2
Duration of delivery		
<24 hours	34	66.7
>24 hours	17	33.3
Delivery outcome		
Live birth baby	33	64.7
Stillbirth	18	35.3
Previous CS		
One	10	19.6
Two or more	6	11.8
No CS	35	68.6

Note: % taken form total of Cases (51)

In table (4) we found that nearly to half of mothers had fistula (49%) due to obstructed and prolonged labor followed by 4th degree perineal tear (39.2%) and with lower percentage (11.8%) caused by post CS.

Table 4: Distribution of Studied sample by Fistula causes

Characteristics	No.	%
Causes of fistula		
Obstructed and prolonged labor	25	49
Post CS	6	11.8
Others (perineal tear)	20	39.2

Discussion:

In this study we aimed to determine the risk factors associated with obstetric fistula among patients admitted in AL-Sadaqa Teaching Hospital Aden, Yemen.

In this study we are found that most patients their age are 20-34y group (29 cases) by56.9%, this is similar to study in Tanzania by 57.2%, [21] and in Afghanistan about 60% were in age group 20-34y.In Uganda there is study that show about 47.7% were in age from 25-34y (21), there is study in sanaa shows that 76.8% were ages from 25-35y .[22] Opposites to study in Niger, which found high percentage 86.5% less than 20y, [23] a study in Ethiopia shows about 31% were above 34y.[24]

The mean age in my study is 30.88_+ 7.967, that similar to study in Afghanistan was 31.39 years, in Ethiopia study shows mean age was 26.60_+ 5.072, [25] also a study in Sudan was 31y.[26] While study in Uganda the mean age was 21y.

Majority of participants in this study from rural areas 31 (60.8%) and from urban 20 (39.2%) this result may due to there is lack of emergency obstetric care services in rural area.

These result correspond to study in Tanzania by 96.2% in rural areas, in Ethiopia by 84.6%, [27] in Sanaa the study represent that about 58.1% from rural areas. In the other hand a study in Ethiopia found the opposites where patients from urban represent as 71.4%.

About 92.2% of patients they were still married , and 7.8% they divorced after problem of fistula in my study, these findings were observed in Sanaa where show about 83.7% were married, in Zambia about 75.7% were married , [28] also in Ethiopia the study shows about 99.3% are married, a study in Afghanistan represent 97.66% are married while 0.36% are divorced. opposite studies like in Nigeria shows that most patients are divorced.[29]

Regarding to occupation of women , in this study we found 94.1% are house wives and 5.9% are professional jobs. Similar to Ethiopia study house wives women about 60% , also in Sudan study that found 69.2% are housewives.[30]

The proportion of women who suffered from obstetric fistula varied with educational status. Majority of patients (47.1%) of them are illiterate, while (17.6%) are

read and write, and (19.6%) (11.8%) (3.9%) are primary, secondary and university level respectively. This explain because most of patient from rural area, this correlate with study in Sanaa which were about 69.8% illiterate, in Sudan by (75%) were illiterate, also in Afghanistan there is study found that most of patient were illiterate (91.7%) and in western Kenya study by were 61% of patients illiterate, [31, 32] in Niger and Nigeria studies show illiterate patients are higher with 84.5%, 96.3% respectively, [33, 34] these studies justify the link between the level of education and the health problem woman might face, illiterate women have a little concern of antenatal benefit that reduce obstetric complication like obstetric fistula. There is study in Ethiopia that results different which found 26.2% only illiterate patients, while 30.2%, 22.8%, and20.8% were primary , secondary and university level of education, also studies in Zambia 2007, and Malawi 2007 founded that illiterate patients were by 19.7%, and 37.8% respectively.[35, 36].

Several studies showed that the association of obstetric fistula with early age of marriage, in this study show the mean age was(18.41+-2.707), and most of patients were in group of age 15-20y by 80.4%, while13.7% were less than 15y and 5.9% were above 20 years of age, this close to result in Ethiopia, and Weteren Kenya by (51.2%) , (67%) respectively were in group 15-20y of age.[27, 37] In Afghanistan about 53.9% were from 15-20y, 38.8% less than 15y and 7.30% were more than 20 y of age, study in sudan (58.8%) married before reaching 18y .[38] In Ethiopia a study found opposite result were 81.5% married at 18y and above age.

According to the WHO those under 18 years who get married may subsequently get pregnancy soon after marriage at time where they are not adequately physically developed to permit the passage of the baby and so they are trapped in obstructed labor and development of fistula, this explain early marriage itself not direct cause to obstetric fistula.

So in our study for the age of causative delivery or age at index pregnancy , the mean age is 28.33+- 6.653, most of patients were in group of age from 20-34y by 70.6%, 11.8% less than 20y and 17.6% above than 34y old. In Uganda there is study found the mean age was 21.7+-4.85 , while 50% of patients were less than 20y of age, 29.5% were in group of age 20-24y and 11.5% were from 30-34y of age.[23]In Ethiopia found that most patients were less than 20y by 84%.[39]

Majority of patients in our study (41.2%) were grandmulti at the time of development of fistula, 31.4% were multi and 27.5% were primiparous. In Ethiopia there was study found that 64.2% were multi and 35.8% were primi, a study in Yemen showed that about 46.5% were grandmulti.[22] In Afghanistan study that found most patients were multi by 42%, grandmulti by 33% and 25% were primi. In Uganda the study found most patient were primi (47.7%), then multi (40.9%) and grand multi were(11.4%). In sudan study showed 59.6% were primi.

Regarding to the mode of delivery, our study show that, majority of women delivered vaginally(54.9%), followed by cesarean section(abdominal) (45.1%). Similar study in Yemen Sanaa showed vaginal delivery (53.5%), in Guinea study showed vaginal delivery were represent the majority by (64.9%) and c/s by (31.4%), a study in Ethiopia found that also most patients were vaginally delivered (89.3%) while c/s were(10.7%), [25] there are studies showed that c/s were 20.2% in Niger , [40] 36.4% in Malawi, and 50.2% in Zambia, while there are studies found the opposite that's most patients were delivered by c/s , in Uganda study found that patients delivered by c/s(67.4%) and vaginally (32.6%) , [21] another study in Uganda showed c/s (59.7%) and a study in Ethiopia (54.7%) were by c/s.[41] This result may due to many of patients still stay in home to deliver and reach hospital after prolonged time of labour.

Fifty four point nine of patients delivered at hospital , (39.2%) (5.9%) delivered at home and health center respectively. Similar study in Uganda found that (84.1%) delivered at hospital , (13.6%) (2.3%) delivered at home and health center respectively, a study in Niger found (59.5%) delivered at hospital and (40.5%) delivered at home, in Ethiopia study also showed that 65.9%) delivered at health institution while (34.1%) at home. Another studies found other results like in Sudan there is study showed that about (57.4%) delivered at home and (27.7%) at hospital, a study in Ethiopia found that (87.1%) delivered at home , (7.4%) (4.5%) delivered at health center and in another place respectively. Also study in Afghanistan found (47.2%) delivered at home while (37.2%) delivered at hospital and (15.6%) delivered at health center.

In our study we found the most attendant persons at delivery were midwives(72.5%), (25.5%)were doctors and (2%) were relatives, similar study in Afghanistan found (55.90%) were by midwives, (20.90%) by doctors and (23.20%) were by relatives, in Ethiopia sudy found that (65.9%) were by health workers, (15.4%) were by relatives and (18.7%) were by TBA(training birth attendant). A study in Sanaa found 20.9% were by doctors.

Most women in this study were experienced labour less than 24 hours by 66.7% and 33.3% more than 24 hours, similar result to study in Saudi Arabia(80%) duration less than 24 hours and (20%) more than 24 hours.[42] In Afghanistan found the opposite (64%) were their labour duration more than 24 hours while(36%) were less than 24 , a studies like in Cameroon, Niger, Zambia, and Pakistan found also most patients their labour duration was more than 24hrs by 95.7%, 93%, 95.7% and 72.5% respectively.[35, 40] In Sanaa the study found 81.4% the duration was more than 24 hours.

In this study there is high percent of live birth (64.7%) and (35.3%) stillbirth, there some studies found opposite result like in Tanzania were (38.5%) live birth and (61.5%) were stillbirth, [20] in Congo found (90%) stillbirth, in Uganda study also found high percent were stillbirth (76.8%) , in Sanaa found (76.7%) were stillbirth.

Majority of our cases (68.6%) with non history of CS, (19.6%) with history of previous one CS, and (11.8%) with history of more than one CS, this correlate with study in Sanaa were found (63.7%) (20%) and (16.3%) patients were with non history of CS, history of one CS, and with history of more than one CS respectively.

This study showed a high incidence obstructed prolonged labour as cause of fistula (49%), about (11.8%) by post CS and (39.2%) by other causes (perineal tear). In Nigeria showed obstructed and prolonged labour (82%), [43] also a study in East Africa found obstructed labour by (100%).[44] In Ghana found about (16%) fistula caused by post CS and in Uganda by (25%). The study in Sanaa found (80.5%) fistula caused by obstructed and prolonged labour and (5.9%) by post CS.

Conclusion and Recommendation:

Among the sociodemographic characteristics, women with obstetric fistula are more likely to be illiterate, age (20-34) years, still married, and from rural areas where obstetric care is inaccessible. This study found that experiencing of obstetric fistula was significantly associated with early age of marriage (15-20) years, and in grand multipara. That is why we must encourage patients for family planning and ANC services should be addressed extensively, also awareness to the society and families must be given about the dangerous of early marriage and early pregnancy and ensure the practice of law against the early marriage. The finding also showed that place of delivery and personal who attendant at delivery found to be affect with the incidence of obstetric fistula, so skill and training to the attendant personnel at birth is important to prevent obstetric fistula occurrence.

Prolonged and obstructed labor is the most common cause related and may end up with one of the severe obstetric morbidity called obstetric fistula, which maybe decreased by usage of partograph during observation of labor.

The most common type of fistula occur in women in this study is recto-vaginal fistula , then come after that vesico-vaginal fistula.

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مقالة بحثية

الناسور الولادي: العوامل المؤثرة والخصائص الاجتماعية والديموغرافية بين المريضات المترددات في مستشفى الصداقة التعليمي، عدن، الجمهورية اليمنية من الفترة (1 يناير 2014 - 31 ديسمبر 2019)

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المُلخّص

الناسور الولادي هو أحد المشاكل التوليدية الرئيسية التي تنتج عن الولادة المتعسرة لفترة طويلة. تؤثر هذه الحالة بشكل رئيسي على النساء في الدول المتخلفة والنامية في العالم وخاصة في افريقيا واسيا واليمن. في كل عام، تصاب ما بين 50,000 الى 100,000 امرأة بناسور الولادة في جميع انحاء العالم. ويحدث ذلك في المناطق التي يكون فيها الوصول الى الرعاية الصحية عند الولادة محدودا او تكون فيها الرعاية ذات نوعيه رديئة اثناء فترة الولادة. دراسة العوامل المؤثرة (الاجتماعية والديموغرافية والتوليدية) للناسور الولادي بين مريضات مستشفى الصداقة التعليمي، عدن – اليمن. تم اجراء دراسة وصفية مقطعية على مستوى المستشفى ل 51 ملفا طبيا لمرضى الناسور الولادي الذين تم ادخالهم الى وحدة الناسور في مستشفى الصداقة التعليمي بمدينة عدن خلال فترة الدراسة من 1 يناير 2014-31 ديسمبر 2019. باستخدام تقنية البيانات المتوفرة والاستبيان لجمع بيانات الدراسة من الملفات الطبية المتوفرة في المستشفى. تم تحليل هذه البيانات بواسطة برنامج التحليل الاحصائي (الإصدار 22). معظم مريضات الناسور الولادي كانوا من المناطق الريفية (60.8%)، في الفئة العمرية 20-34 سنة (56.9%). سن الزواج المبكر للفئة العمرية 15-20 سنة (80.4%)، أمية (47.1%) ومازالت متزوجة على الرغم من اصابتها بالناسور الولادي (92.2%) مع عدم استخدام الرعاية السابقة للولادة في الحمل المسبب (41.2%) ولها تاريخ سابق عملية قيصرية واحدة وأكثر (19.6%،11.8% على التوالي). معظم المشاركات ولدن عن طريق المهبل (54.9%) بواسطة القابلات (72.5%) حيث كانت الولادة المتعسرة لفترة طويلة هي السبب الأكبر (49%) والنوع الأكثر شيوعا هو ناسور المستقيم المهبلي (41.2%) وكانت غالبية عمليات اصلاح الناسور عبر المهبل (68.6%). العوامل المؤثرة لناسور الولادة هي سن الزواج المبكر، والامية، ونقص الرعاية السابقة للولادة، في حين ان الولادة المتعسرة المطولة كانت السبب الأكثر شيوعا. ناسور المستقيم المهبلي هو النوع الأكثر شيوعا. توضح نتائج الدراسة ان ناسور الولادة هو مشكلة توليدية مهمة يواجها المجتمع وتزيد من معدلات مراضه الأمهات، واهمية كل من أنشطة العلاج والوقاية اللازمة، وكذلك التدخلات التي تركز على تحسين الوصول الى الرعاية الصحية للأمهات، ورعاية التوليد لحالات الطوارئ، وزيادة معدل العمليات القيصرية.

الكلمات المفتاحية: ناسور الولادة، العوامل المؤثرة والسن المبكر للزواج.

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