# Commonalities among women who experienced vesicovaginal fistulae as a result of obstetric trauma in Niger: results from a survey given at the National Hospital Fistula Center, Niamey, Niger

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**OBJECTIVE:** The purpose of this study was to evaluate the histories of women with urinary incontinence caused by vesicovaginal fistulae in Niger. This is an exploratory analysis to investigate possible contributing factors to the development of vesicovaginal fistulae.

**STUDY DESIGN:** From September 2005 to January 2006, 58 women who were treated for vesicovaginal fistulae at the National Hospital Fistula Center, Niamey, Niger, were interviewed.

**RESULTS:** The average age of marriage was 15.6 years and of first pregnancy was 17.3 years; 44.9% of the women were primigravid; and 94.8% of the women began labor at home. By delivery, 91.4% of the women sought additional care. The average labor lasted 2.61 days. An average of 1.61 days passed before further assistance was sought; 91.4% of infants were stillborn.

**CONCLUSION:** Early marriage, young age at first pregnancy, and labor length are common findings in our population of women with vesicovaginal fistulae. Most women who experienced fistulae also had poor obstetric outcomes. Increasing access to emergency obstetric care is of paramount importance to prevent fistula formation.

**Key words:** Africa, incontinence, obstructed labor, vesicovaginal fistula

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Vesicovaginal fistulae (VVF) that results from obstetric trauma remains a significant cause of female urinary incontinence worldwide. In the developing world, it is a largely neglected reproductive health concern that has remained hidden because it affects some of the most marginalized members of the population: poor, young, illiterate women who live in rural areas with little access to the healthcare system. On a global scale, the incidence of obstetrics-related vesicovaginal and rectovaginal fistulas in resource-poor settings continue to be 1 of the most visible indications of the vast disparities that continue to persist between the developed and developing world. These disparities include the lack of accessible quality maternal healthcare, family planning services, skilled birth attendants, and emergency obstetric care. The burden of VVF is complex. Not only are there the physical aspects of constant leakage of urine, infection, dermatologic changes, and associated neurologic injuries from obstructed labors, but also there are devastating social consequences. Many women with VVF experience the social stigma, shame, loss of place in society and family, divorce, separation from family, and worsening poverty and malnutrition.

Reliable data on the incidence and prevalence of VVF and rectovaginal fistulas have never been established. The World Health Organization has estimated that 2 million women are affected with vesicovaginal fistula and rectovaginal fistula, with an estimated 50-100,000 new cases annually.[1] However, global prevalence estimates are based on women who seek treatment and therefore may be grossly underestimated.

Given the paucity of published data on the subject, the objective of this study was to evaluate the histories of women with urinary incontinence because of VVF as the result of obstetric trauma by questioning women who underwent

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**TABLE**
**Distribution of ethnic groups and forms of employment**

| Ethnic group | Percentage |
|---|---|
| Hausa | 39.7 |
| Zarma | 37.9 |
| Tuareg | 8.6 |
| Fulani | 6.9 |
| Songhai | 3.4 |
| Beri-Beri | 1.7 |
| Employment | |
| Homemakers without income | 50 |
| Farmer | 30.8 |
| Craft-maker | 6.9 |
| Weaver | 5.2 |
| Food vendor | 3.4 |
| Unemployed | 3.7 |

VVF repair at the Niger Fistula Center at the National Hospital in Niamey, Niger. This is an exploratory analysis to define possible factors that contribute to the development of VVF and to identify social or medical practices that could decrease the incidence of this devastating birth-related injury.

## Methods

From September 2005 to January 2006, 58 women who were treated surgically for VVF at the National Hospital Fistula Center in Niamey, Niger, were interviewed with the use of a questionnaire that was developed to investigate demographic, social, economic, and cultural factors that may contribute to the formation of fistulae in the population. After their surgery, the patients remained hospitalized for 2 weeks, pending removal of their indwelling urinary catheters. During this time, each patient was approached by local volunteers, including Peace Corps workers, exchange students, and Nigerian medical students. The patients were asked to partake in a 30-minute questionnaire. If they agreed, they sat separately, away from the other patients and family members, to answer the questionnaire. All questionnaires were completed in 1 sitting. Each study participant was able to speak either Hausa or Zarma and was interviewed by someone fluent in both Hausa and/or Zarma and English. The answers were translated and recorded in English. The study was exempt from Institutional Review Board approval because the patients were not identified in the questionnaire and their medical care was not affected in any way by this questionnaire. Statistics were performed with the SPSS statistical program (SPSS Inc, Chicago, IL). For this study, only means, ranges, SDs, and percentages are reported.

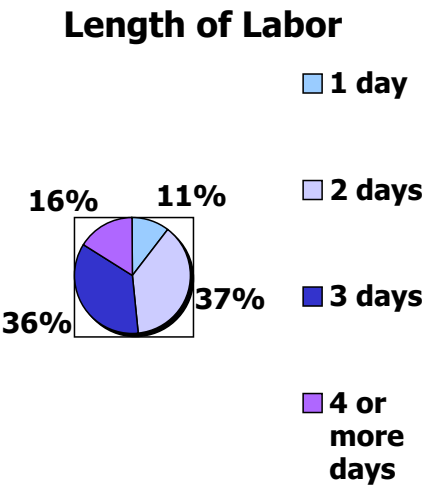
## Results

At the time of surgery, the mean age was 26.14 ± 7.5 years (SD), with a range of 16-44 years; 62% of the study population considered themselves married at the time of the survey. The 58 women represented 7 different ethnic groups and traveled from 57 different villages in Niger. Approximately one-half of the women had no independent form of income (Table). Only 15.5% of women had ever attended school. Of that subgroup, the longest any of these women stayed in school was 3 years. None of the women were able to read or write.

Among the cohort of women who were studied, the average age of marriage was 15.6 ± 2.46 years (range, 10-22 years). The age at first pregnancy was 17.3 ± 3.36 years (range, 11-25 years). For 44.9% of the women, this was their first pregnancy; 51.7% of the women had between 1 and 7 live births before the labor that resulted in the formation of a vesicovaginal fistula. For multiparous women, only 28.1% believed that this labor was different from previous labors in which live infants were born.

Most of the women (94.8%) began their labor at home, primarily cared for by a family member. Labor was described by the questioners as regular, painful contractions that resulted in the eventual birth of the child. By the time of delivery, 91.4% of the women had gone to a healthcare center. The mean length of labor was 2.61 days (Figure). The average length of labor before seeking further assistance was 1.61 days; 22.4% of the women delivered by cesarean section; 13.8% of the women delivered with forceps assistance, and 63.8% of the women delivered by spontaneous vaginal route.

**FIGURE**
**Length of labor**




Most of the women who experienced fistulae from labor had poor obstetric outcomes; 48.3% of the cohort had no living children. The outcome of the labor that caused the fistula was especially poor; 91.4% of these women gave birth to stillborn infants, and by 2 days after delivery, 96.6% of the babies were dead.

## Comment

Although fistula was once common throughout the world, in countries where obstetric care is readily available, obstetric fistulae are virtually unknown. Today the prevalence is thought to be highest in poor communities in Africa and Asia. The region of sub-Saharan Africa is particularly burdened with the many challenges brought on by endemic poverty, famine, infections such as human immunodeficiency virus and malaria, and political instability. These same factors contribute to the lack of healthcare infrastructure and adequate antenatal and emergency obstetric care.

Specific factors also contribute to the burden of obstetric fistulae in Niger. Nigerian women have the highest fertility rate (8) in sub-Saharan Africa and a maternal mortality ratio of 920 per 100,000 live births. Eighty-five percent of women deliver at home, either unassisted or without the help of a trained provider.[2]