

Abortion in the North of Burkina Faso

Karl Lorenz Dehne¹

ABSTRACT

Knowledge and use of abortifacients were investigated in a remote ethnically heterogeneous area in the north of Burkina Faso. A questionnaire survey was carried out among 320 married women in 21 villages and supplemented with key informants' interviews, clinical observations at the provincial hospital, and observations in one of the villages. Almost half of the sampled women of all ethnic groups admitted to the existence of abortions carried out by their peers. Response rates and knowledge of abortions were lower among younger women and among those belonging to the Islamic Hamallist and Wahabiya sects. Abortions were commonly induced by drinking a watery solution of the roots and leaves of a commonly found bush — *Securidaca longepedunculata*. The plant contains uterine contraction stimulating ergot-alkaloids, but also strychnine-like toxic substances. It is reportedly effective in provoking abortions within one day of treatment, but its side-effects are severe and include heavy vaginal bleeding, abdominal pain, diarrhoea and vomiting, and death. There is a need for the rapid introduction of safer birth control methods in the region. (*Afr J Reprod Health* 1999; 3(2):40-50)

RÉSUMÉ

L'avortement au nord du Burkina Faso. L'étude a porté sur la connaissance et l'emploi des abortifs dans une région éloignée et ethniquement hétérogène au nord du Burkina Faso. Elle est basée sur un échantillonnage au sein de 320 femmes mariées dans 21 villages. On s'est servi des interviews accordées par les informateurs et des observations cliniques recueillies d'un des villages. A peu près toutes les femmes enquêtées de tous les groupes ethniques ont reconnu l'existence de l'avortement procurés par leurs paires. Les taux de réponse et la connaissance de l'avortement s'étaient révélés plus bas chez les plus jeunes femmes et chez les fidèles des sectes islamiques Hamallist et Wahabiya. Les avortements étaient provoqués en buvant une solution aqueuse des racines et des feuilles d'une buisson qu'on trouve partout: *Securidaca longepedunculata*. La plante contient des alcaloïdes de l'ergot de seigle qui stimulent la contraction de l'utérin. Elle contient aussi des substances toxiques d'allure strychninienne. Elle est efficace dans la provocation de l'avortement en moins d'un jour de traitement. Ses réactions secondaires sont sévères et comprennent une lourde hémorragie vaginale, des douleurs abdominales, la diarrhée, le vomissement et la mort. Il est nécessaire d'introduire des méthodes de limitation des naissances dans la région. (*Rev Afr Santé Reprod* 1999;3(2):40-50)

KEY WORDS: Burkina Faso, Fulbe, Gourmance, abortion, abortifacients, ergot-alkaloids

¹Department of Tropical Hygiene and Public Health, University of Heidelberg

Correspondence: Karl L. Dehne, Department of Tropical Hygiene and Public Health, University of Heidelberg, Ringstrasse 19, 69115 Heidelberg, Germany.

Introduction

Many traditional African societies are believed to have abhorred abortion.¹ In Caldwell's view, the practice was only known because some circumstances, such as the fear of illegitimacy, were so serious that they overrode the objections.¹ On the other hand, many pre-modern African societies had lower fertility levels than those established in demographic studies during the 1970s and 1980s — a fact that led demographers to argue a two-stage fertility transition.² Abortions may well have also played a role in the regulation of fertility. For example, pregnancy control existed among the Asante of the 19th Century in Ghana, although the methods used have been described as drastic.³ Historians also agree that fertility among slave populations, whose descendants make up half or more of the total population in many areas of the West African savannah, was particularly low. It is not clear through which mechanisms (abstinence, traditional means of contraception, abortion or infanticide) these low levels of fertility were achieved.⁴

Till today, levels of abortion in Africa are believed to be relatively low as compared with other world regions. Available data suggest that between 20 and 30% of women of the towns in southern Ghana and Nigeria may have had an abortion during their lifetime.⁵⁻⁷ A survey among 3000 randomly selected family planning and prenatal clinic attendees in Bamako, Mali, revealed that one out of seven women had attempted an abortion,⁸ and Pazié reported that in Burkina Faso, 5% of all women admitted to maternity wards in two main hospitals in Ouagadougou and Bobo Dioulasso were treated for induced abortion.⁹

Very little is known about abortion in rural areas, partially due to methodological difficulties in collecting data on a subject that is surrounded with a strong taboo. Where pro-natal attitudes are still strong, access to health services is minimal and abortion is illegal, few options for research are available. In one study in rural Ethiopia, researchers came to the belief that only one out of 300 abortions that had actually taken place had been identified with the random survey technique they had used.¹⁰ In Ile-Ife and Jos Local Government Areas of Nigeria, approximately 20% of women reported having had an unwanted pregnancy, and 70% of this 20% reported having resolved unwanted pregnancies

with abortion. Abortion was, however, consistently less frequently reported from rural than from urban areas.¹¹ In Senegal, Huntington *et al* experimented with indirect and filter questions to elicit better information on abortion in both clinic and community-based studies.¹² However, the chosen filter topic, pregnancy unwantedness, was judged to be too sensitive, and the 2% reported level of unwanted pregnancy was very low.¹² The usefulness of including any question on abortion into questionnaire surveys needs to be carefully weighed against possible drawbacks such as the hostility of the villagers surveyed.

Some authors hold that abortion in Africa predominantly pertains to young and childless urban women, because "it is the fact of bearing children which may change life courses by forcing marriage or cessation of schooling or training",¹ but in at least one study an equal rate of abortion among married and unmarried women was reported.¹¹

Traditionally, abortions have been attempted by four methods in sub-Saharan Africa — by spells and witchcraft; by means of vegetable extracts, usually from leaves and barks of trees; by massaging, squeezing and beating the abdomen; and by the introduction of a foreign body into the cervix, often from a specific bush or leaf.¹ Anthropological studies have documented knowledge of abortifacients in many countries and areas,¹³⁻¹⁵ while the use of the other methods appears to have figured much less frequently in historical and anthropological reports. Today, in urban areas in Burkina Faso, a variety of modern and traditional chemicals (the oral application of potassium permanganate, chloroquine, large quantities of honey and extracts of local trees) and mechanical methods (fish bones, leaf ribs, ball-points, bottle glass and currettes) are being used.¹⁶ In smaller towns, both traditional chemical abortions and curettage seem to be well known.¹⁷ Except for Prost's ethno-botanical study among the Mossi and a folk-demography study among four ethnic groups, which both mention the knowledge and use of abortifacients,^{18,19} little is known about abortion in rural Burkina Faso.

This study was carried out to investigate the knowledge and practice of induced abortion in a remote rural ethnically heterogeneous society in Burkina Faso, the former Yagha Emirate.

Geographical and Ethnographic Background

Today the Yagha population of approximately 80,000 is mainly composed of Fulani (Fulbe and Rimaibe, former Fulbe vassals) and several thousands Gurmance. Ethnic minorities include Mossi, Sonrhai, Hausa and Bella. Fulbe/Rimaibe and Gurmance have basic ethnographic similarities, such as patrilinearity, patrilocality and polygamy, but differ on many determinants of social organisation, including modes of production, settlement and land use patterns, and religion. The Fulbe are traditionally pastoralists, with their life revolving around their herds. Anthropologists have described the Fulbe society in terms of individualism and personal freedom.²⁰ As women in other pastoralist societies, Fulbe women have been described as enjoying relatively more autonomy and independence from men's decision-making than those of the surrounding agriculturist societies. Nevertheless, a strong behavioural code expressed in the concept of *Pullako* (*Fulani-ness*) prescribes self-discipline and reservedness, for both males and females,²¹ a feature which, among other things, strongly influences data collection choices. In contrast, the Gurmance are a typically gerontocratic society in the sense of Meillassoux.²² The authority and power of the patrilineal extended family and its virtually absolute control over women's fertility and sexuality were still standing during colonial times and even thereafter.²³ Their strong ancestor belief has tended to consolidate these power structures and control mechanisms.

The Yagha has had very little intervention from development programmes. School enrolment is very low and the literacy rate of 5% is the lowest in the country. Less than 2% of women report using modern contraceptives (oral contraceptives or condoms) with their husbands (K Dehne, unpublished data). As modern contraception is uncommon, infrequent abortion was expected to be one of the few options left for women to widen their otherwise narrow margin of reproductive decision-making. One of the two main ethnic groups, the Gurmance, had been reported to know about abortive plants,¹⁹ while hardly anything had been documented about abortion from among the other group, the Fulani, both in the Yagha itself and elsewhere across the West African savannah. Sev-

eral authors have stressed the importance of social rather than biological means to reduce the number of unwanted (illegitimate) children, either through marriage or their recognition by their fathers with or without removal of inheritance rights.^{24,25}

Data Sources

Sources of data include clinical findings, key informant interviews and a sample survey. Clinical findings came from Yagha women referred to the provincial hospital in Dori (located in the neighbouring department) for vaginal bleeding. Key informant interviews were conducted among five male village leaders, including two imams and one nurse, as well as one female nurse working at one of the three rural health centres, and two trained village midwives. In addition, three questions on abortion were included in a reproductive and health sample survey, which also covered themes such as marriage, delivery practices and postpartum behaviours.

Survey interviewers were recruited from among the few women in the provincial capital who were literate in both French and one of the two main local languages — Fulfulde and Gurmancema. They were taught the main topics of the survey, including abortion, and were trained in interview techniques in a two-week course. They then conducted the survey under the supervision of an experienced field worker recruited from outside the study area. Given the sensitivity of the topic, individual, rather than group, interview was preferred.

Ninety-four villages had been officially recognised in the Yagha at the time of the survey, but about half of these villages had not yet been enumerated. In an economic household survey carried out the year before our reproductive health survey, the United Nations Sahelian Office (UNSO) had attempted to approximate representation, despite the lack of reliable population data, by dividing the area into five socio-economically, historically and geographically distinct zones.²⁶ According largely to geographical criteria (e.g., distance to rivers or lakes) UNSO chose three or four villages per zone, and after several sensitisation meetings and group interviews estimated the number of sub-villages (quarters), their ethnic composition and relative sizes. Approximately ten heads of households per village were selected for the survey.

With authorisation of the UNSO, we used the same sampling frame for our reproductive health survey, interviewing the wives of those heads of households interviewed by UNSO the previous year, and systematically adding younger women. As the men selected by UNSO were all between 30 and 60 years old, most of their wives were expected to be at least 25 years old. Therefore, in each village, two or three heads of households who were married to at least one younger woman were added to the sample, and their wives were interviewed. Two villages, close to a religious centre located in a part of the Yagha, and which seemed to have been neglected by the UNSO, were also added to the list of villages selected for interviews.

Given the many pitfalls with direct questioning and quantification, no attempt was made to ask the women about their own experiences with abortion. When it emerged from obstetrical practice at the hospital that the application of indigenous plants appeared to be the most common abortion method in the Yagha, the decision to formulate indirect questions on the women's knowledge of the use of abortifacients in their villages, and to incorporate them in a section of the questionnaire, which dealt with local medicines, was taken.

Three questions, one closed and two open, were asked:

1. "Do you know about women in your village that have used local medicines (plants) to make their periods come?" (Note: The Fulfulde and Gurmancema expressions used were widely understood as referring to induced abortion).
2. "If yes, are these plants effective? Please describe their effects."
3. "If not caused by abortive plants, how would you explain vaginal bleedings among (Yagha) women referred to the hospital?"

The interviewers either returned to or stayed at each individual village for several consecutive days, and stayed in the Yagha for a total of three and half months. They were instructed to look for, and, if possible, observe and report any activities related to induced abortions in the villages, including conversations related to the topic between villagers, the preparation and use of abortifacients, and the actual induction of abortions. They were also instructed to request from all women who admitted to knowing about induced abortions in their villages, the locations where abortive plants grow,

and to provide them with a sample of their leaves, barks or roots.

Findings

Clinical Findings

During the six months preceding the survey, more than 40 women, including 12 women from the Yagha, were treated at the provincial health services for strong vaginal bleeding. None had clinical signs of infection. As vaginal manipulations are more likely to be associated with infections than abortions induced through the oral application of drugs, it was assumed that if the bleedings were at all due to induced abortions, they were likely caused by oral abortifacients. There were also a few anecdotal reports from among the nursing staff of other abortion methods being used in the surrounding villages, including witchcraft and the use of chalk (used for writing verses of the Koran), but no reports or clinical evidence of vaginal manipulations or modern curettage.

Attempts by health workers to clarify the 12 Yagha women's histories during their stay at the hospital failed. Abortions are illegal in Burkina Faso, and possibly because they were interviewed far from their homes by mostly male nurses from a different ethnic group, the women felt too uncomfortable to talk freely about this sensitive topic.

Key Informants

The Fulfulde speaking male key informants all reported about abortions being carried out, both in their own villages and in the Yagha in general. But they claimed that they were hardly ever informed about such events and not involved in the decision-making. The two Muslim religious leaders interviewed were strictly opposed to abortions, as they contradicted religious norms. The health centre nurse reported that he would usually only get involved when complications (severe bleedings) had already occurred. Two key informants mentioned that abortions were probably being induced by means of abortive drinks, but none admitted knowing any detail about the treatment.

One 32-year-old animist Gurmance woman also mentioned the use of oral abortifacients. She described in some detail what she knew about the social role of abortions in the Gurmancema speaking part of the Yagha:

Clandestine abortions do occur in our villages. The practice concerns young unmarried women who happen to fall pregnant. They go into hiding in order to abort. It is forbidden to do so, but for unmarried women to keep the pregnancy is also impossible, as this would mean disobeying parents and local customs. Before the abortion is carried out, it is necessary to consult an earth chief. He will decide. If she does not consult him, she will die or her family will be struck by bad luck.

The other female key informants' responses, including those by the two birth attendants, did not significantly differ from the women interviewed during the sample survey and are therefore reported together with the survey findings.

Questionnaire Survey Results

Characteristics of the sample — The modified UNSO sampling scheme generated interviews with 320 married women of all main ethnic groups, from 21 villages. Between 10 and 25 women per village were interviewed, depending on the village size and

ethnic composition and the number of wives among the sampled heads of households. Among the 320 women interviewed, 81 were Gurmance, 72 Fulbe, 123 Rimaibe, while 44 belonged to other ethnic groups, including Mossi, Sonrhai and Hausa. Two hundred and seventy-six (86%) of all women (including all Fulbe and Rimaibe) were Muslims belonging to various Islamic sects and movements (171 Hamallists, 9 Wahabiya and 92 "moderates"). About half of the 81 Gurmance were either animists (39) or Protestants (4). Ages varied between 15 and 60 years, with a median age of 38 years (Table 1).

Knowledge of abortions — Of 320 women asked whether they had heard about plants being used to induce abortions in their villages, 231 (72%) responded while 89 (28%) refused to discuss the issue. The response rate varied between 66% among the Rimaibe and 83% among the Gurmance, with the Fulbe women and the minority groups responding at average rates. Response rates were lower among animists and "moderate" Muslims than among Hamallists and Wahabiya Muslims (Table 2).

Table 1 Knowledge of Abortion by Age Group, Yagha, 1993

Age group	Total	Total respondents	Among respondents, those who knew about abortions (%)
15-29	103	67	23 (34.3)
30-39	86	64	40 (62.5)
40-49	83	60	41 (68.3)
50+	48	40	27 (67.5)
Total	320	231	131 (56.7) ^a

^a Excluding those who admitted to knowing about abortions after being prompted by another question.

Table 2 Knowledge of Abortion by Religion, Yagha, 1993

Religion	Total	Total respondents	Among respondents, those who knew about abortions (%)
Animists	39	34	20 (58.8)
"Moderate Muslims"	92	74	45 (60.8)
Hamallists	171	115	59 (51.3)
Wahabiyya	9	4	3 (75)
Protestants	5	4	2 (50)
Total	316 ^a	231 ^a	129 ^a (53.5)

^a Four women did not report on their religious affiliation.

Among the 231 women who responded to that question, 129 (56%) admitted knowing about abortions being carried out in their villages, and 102 (44%) denied having heard of abortions. Response rates by age group are given in Table 1. Among those who knew about abortions, more than half spontaneously mentioned the use of a specific abortifacient. Almost half responded to the second question by describing the effects of using this plant, and several described in detail their sources of information and the mode of preparation of the abortive drink. When prompted by the third question about vaginal bleedings of doubtful origin at the provincial hospital, 24 of the 102 women who had initially denied any knowledge of induced abortions stated that they, as a matter of fact, knew about such practices, but:

...not in this village.

[Only] among the others.

Among single mothers only.

Most of those mentioning "others" or "single mothers only" were Fulbe women.

Reasons for unexplained vaginal bleedings other than voluntary abortions — The 78 women who denied having any knowledge of voluntary abortions, despite having been prompted by the third question, stated alternative reasons for vaginal bleedings. These included spontaneous abortions, side effects of modern contraceptives, metrorrhagias and witchcraft, among others (Table 3). Answers referring to non-voluntary abortion were sometimes intentionally kept ambiguous. For example, three women said:

I would simply say 'abortion'; I would not like to say more.

Knowledge of specific abortive plants — Seventy-five women, more than half of those who stated they knew about abortions, mentioned that one specific plant, the *tchébé* (tree, bush) *dalali*, was an effective abortifacient. Several Gurmance women mentioned a plant called *opolou*, which, according to two assimilated and bilingual women, was identical to *dalali*. Others (4) mentioned honey, a combination of honey and *dalali* (3), other herbs and plants (4), and blue ink. Knowledge about *dalali* (or *opolou*) causing voluntary abortions was reported from 19 out of 21 villages, all ethnic groups and all surveyed zones.

Table 3 Suggested Causes of Vaginal Bleeding among 78 Women who Denied Knowledge of Induced Abortions^a

Suggested causes	Number
(Spontaneous) abortions	28
Menstruation	3
Pregnancy and birth complications	8
Modern contraceptives	1
Side effects of other treatments	2
Unknown illnesses or witchcraft	44
"Other reasons than the plants"	11
"Such plants do not exist"	3
Don't know	18
Total	118

^a Multiple answers were accepted.

Sources of information — The main sources of information appeared to be older women and the women's own observations. Two women, one Gurmance and one Rimaibe, stated that they had seen other women taking the herbs, and one 40-year-old woman from a small Fulbe sub-village stated that her best friend had taken abortive drinks:

My best friend was three months pregnant. She drank the plants, and the pregnancy was aborted; but she had strong abdominal pains.

First-hand information seemed likely among those who described the effects of taking the plants in greater detail, for example, when stating that they tasted very bitter. But none of the women interviewed admitted to having tasted them. Others reported more indirect experiences:

Some women abort in hiding.

I know a woman who has taken the herbs, because after the abortion we other women found out about it.

Six women spontaneously reported that *dalali* was very well known throughout the Yagha, and stated:

[The plant exists] in our village.

[It is] well known in our village.

[It can be found] in the bush surrounding our village.

Three others thought:

[The plant] does not grow in our village.

[We] would have to go up to Faga on the road to Mansila [to find it].

Information about the plant was apparently not easily shared between women of different age groups, suggested by statements such as:

We are too young to know.

We, it's only the old women who talk among themselves.

It is possible that such plants exist, but I am not part of the milieu.

Efficacy of abortifacients — The 131 women, who admitted to knowing about abortions, when asked whether the plants were effective in provoking abortions (second question) replied by describing its effects, the time lapse before an effect becomes noticeable and the outcome of the treatment. Fifty-four women stated that the plants were effective or very effective (even though dangerous):

It resolved our problems.

It cleans out everything, if taken.

They are even effective in animals (mentioned in one case).

Only four women, including one of the birth attendants, were more skeptical and stated:

The plants only cause abdominal pain.

They never work.

They often do not work but with the help of God.

With good luck, the entire pregnancy will be aborted, but with bad luck some parts will still remain.

Many others stressed the speed at which the drug acts. More than 30 women mentioned that the desired result would be achieved within one day. Frequent statements were:

It does not even take one day.

If you drink the liquid in the morning, you will bleed in the evening.

However, if the pregnancy was older than four months, it was believed to take two days or more to abort, and:

If the pregnancy is further advanced, trying to abort it is very dangerous; the woman might die.

On the effects of *dalali*, other than the expected final result, 55 women spontaneously mentioned vaginal bleeding and abortion. These effects include abdominal pain, backache, diarrhoea and vomiting, general malaise, dizziness and death (Table 4). Twenty women thought that the plant was very dangerous, and five added that women risk dying from it if they did not take the correct doses. The plant was also described as being useful in inducing contractions during labour and in getting rid of a retained placenta.

Eight women mentioned the strong smell of *dalali*. Pregnant women who would come too close to the tree, intentionally or not, are believed to inevitably and instantaneously abort.

Table 4 Symptoms and Side Effects of Dalali other than Vaginal Bleeding, as Reported by 55 Yagha Women^a

Effects (other than vaginal bleeding)	Number
(Very strong) abdominal pain	48
Backache	3
Diarrhoea	6
Vomiting	5
General malaise	7
Dizziness	2
Death	5

^a Multiple answers were accepted.

Preparation of the abortive drink — Five women spontaneously described the preparation and application of the herbal drug. The roots (or bark) of the bush/tree are usually crushed and boiled in water, and the liquid mixture given to the woman to drink. Slightly different recipes were quoted because either both roots and leaves are to be used together or the roots only. The strong smell of the plant is considered dangerous for those pregnant women in the village who do not want to abort; they therefore have to be kept away from places where the plants grow or where the liquid is being prepared. Those who are planning to abort are to take just a few drops to avoid serious side effects.

Observation of an Induced Abortion

The Gurmance interviewer observed an attempted abortion in a 17-year-old girl when she was staying overnight in one of the surveyed villages. Several older women and one younger woman were seen sitting around a fire with a pot of boiling water, leaves and roots. The next morning the young woman was suffering from life-threatening vaginal bleeding and was carried to the next health centre, 20km away, on a stretcher. She was then taken further 100km to the provincial hospital by car.

Identification of the Abortive Plant

Two interviewers were ultimately successful in identifying the *dalali* plant in one of the surveyed villages. They were taken to a place where the bush was growing and were able to collect branches and leaves. There was great secrecy surrounding the location of the plant, with the old woman, who agreed to collect the plants, apparently ambivalent as to whether her knowledge was a privilege or a reason for embarrassment.

Discussion

The survey findings show that detailed knowledge of abortion and abortive plants is common among both Fulani (Fulbe and Rimaibe) and Gurmance in the study area. More than half of the women of all ethnic groups who responded to the questions stated that they had heard of abortive plants, and a large proportion either mentioned the name of the one most commonly used with its effects or the way it is administered. These figures might yet represent an underestimation of the true extent of knowledge, as some women may have denied knowing about abortions, due to their reluctance to talk about such a sensitive subject. Openness and a willingness to collaborate appeared to depend more on age and religion rather than on ethnicity. For young women and those belonging to the Hamallist and Wahabiya sects, whose teachings strongly condemn abortion, to admit to the existence of abortion seemed to be particularly difficult. Several elderly Fulbe women were also among those who denied having any knowledge of induced abortion. Some of them were apparently well aware of reproductive functions but were reserved and clearly unwilling to fully co-operate with the interviewers. The widespread knowledge

of abortion and abortive plants in the Yagha, found in this survey, contrasts with the relative silence on this issue in the ethnographic literature on the two main ethnic groups.

Despite similar levels of knowledge of abortion, and the apparent use of the same plant by the Gurmance and the Fulfulde-speaking Islamic groups, key informant interviews suggested that the decision-making process with regards to abortion differs. According to the folk-demography study quoted above, Fulbe and Rimaibe women would often consult Islamic leaders (imams and/or marabus) before deciding to attempt an abortion.¹⁹ However, this was not confirmed by this study, as all five male key Fulbe and Rimaibe informants, including the two imams interviewed, denied that men were involved in the decision-making. Decisions on abortion are apparently in the women's domain, unless if complications occur and funds are to be raised for referral to the hospital. In contrast, among the stricter gerontocratic Gurmance, male diviners are reportedly asked for permission before an abortion is attempted. The pressure on women to avoid illegitimate births by carrying out abortions seems to be almost absolute, as differences in the number of illegitimate children between Fulbe/Rimaibe and Gurmance villages also confirmed (K Dehne, unpublished data). Once the Gurmance diviner has been consulted, abortion probably proceeds without much regard for the woman's health.

An initial hypothesis that the cases of severe vaginal bleedings seen at the hospital may have been caused by induced abortions was confirmed. Bleek has suggested that even where they are not widely used, herbal abortifacients were probably known in traditional African societies in the past either because they were identical with medicines used to clean out the uterus after a birth or because they were used by witchcraft to attempt to make one's enemies abort.⁶ Both uses — witchcraft and medicinal use during the postpartum period — were also mentioned in this study, although infrequently. The fear of accidental abortion following exposure to the strong smell of the plants' exudes can also be interpreted as belief in witchcraft. But the role of *dalali* in the traditional obstetrics of today's Yagha goes well beyond its application during the postpartum period, or as witchcraft. Reports by both Fulbe and Rimaibe women about voluntary abortions among close friends and the one ob-

served in a Gurmance village all confirmed that:

- a. abortions are indeed attempted;
- b. the herbs used are effective in causing severe bleedings; and
- c. women with life-threatening bleedings are referred to the hospital.

The alternative causes of vaginal bleedings stated by the women reflected a mixture of good knowledge of reproductive functions (menstruation, birth complications, effects of modern hormonal contraceptives and spontaneous abortions), myths and fears (unknown illnesses and witchcraft) and denial that abortions might have been induced ("other reasons than abortive plants", "such plants do not exist"). Difficulties in distinguishing between induced and spontaneous abortion are common in abortion research, even in hospital-based studies when information is directly elicited from women on their own maternity histories.²⁷

For an accurate assessment of abortion incidence in the Yagha, long-term ethnographic studies in single villages, or follow-up questionnaire surveys in the same villages, should be conducted. Unless evidence emerges of abortions being induced by other methods than indigenous plants, for example, vaginal manipulations and curettage performed by health workers or village women, questions referring to abortifacients may well be useful as introduction and/or filter questions.

In order to assess both the historical relevance and today's practical importance of abortion in the Yagha better, the traditional use of *dalali* and its pharmacological qualities were investigated. The leaves and branches collected were examined by an experienced botanist who identified them as belonging to a bush of the *Polygalaceae* family, well known throughout Africa as *Securidaca longepedunculata* (Fresen).²⁸ According to traditional medicine literature, the bush is found in the savannah region and on forest fringes from West Africa to East and Southern Africa. It has been given various local names, including *alali* by Fulani groups in Senegal, Gambia and Niger, *alale* in Mali and *alebi* in Nigeria, *opolou* by the Gurmance and *pelga* by the Mossi in Burkina Faso.²⁹⁻³² The name *dalali*, reported by the interviewers in the Yagha, is probably a French transcription of the Fulbe word *alali*, *ichébé* (tree) *d'alali*. The Gurmancema name, *opolou*, corresponds with that in literature.

The bush is described as having great importance in traditional medicine ("the mother of medicine"), with various parts of the plant being used in different parts of Africa as antidote against snake bites, diarrhoea, worms, malaria, migraines, sexually transmitted diseases (syphilis and gonorrhoea);^{29,31} as laxative and purgative;³³ and for a variety of other purposes. Dalziel (1960) mentioned that the root was sold as medicine and charm in local Hausa markets.³⁰ Importantly, the plant has also been used as an oxytocic, i.e., causing uterine contractions.³² Prost, describing the "main plants of the Mossi country", states that "*Securidaca longepedunculata* is the usual abortifacient" in Burkina Faso.¹⁸

Many Fulbe groups across West Africa thus seem to have known *Securidaca longepedunculata*, and given it their Fulfulde name. But they may not have used it as an abortifacient. Dupire, who conducted an inventory of approximately 100 recipes for traditional drugs among the Fulbe of Niger and Cameroon, found only one such recipe containing *Securidaca*, which was unrelated to abortions and listed under witchcraft-type remedies.³⁴ In contrast, several veterinary applications of *Securidaca* are known among Fulbe groups.³² *Dalali* also seems to have been unknown among the four Fulfulde speaking interviewers and their friends from the provincial capital where the Gurmance influence is considerably less important. All these findings support the view that abortion by means of *Securidaca* might previously not have been part of the Yagha Fulani traditional heritage. It is possibly from the influence of the neighbouring Gurmance who were enslaved after the *jihads* of the 19th Century, that led to the conquest of the Yagha by Fulbe herdsmen. The Fulbe may have adopted this practice, as they did other traditional beliefs and practices such as female genital mutilation³⁵ and specific delivery practices.³⁶

Recent pharmacological findings seem to confirm the great "efficacy" and "danger" attributed to the plant by the women interviewed. Neuwinger has summarised what is known about the pharmacology and toxicology of *Securidaca longepedunculata*.³⁷ The bark contains securidine, a toxic substance which stimulates the central nervous system in a similar way as strychnine.³⁷ The therapeutic index of securidine is somewhat higher than that of strychnine.³⁸ Its roots also contain saponins, substances which chemically resemble soaps, and

which should be responsible, among other consequences, for the described strong purgative side effect. These substances are also cardiotoxic, as animal experiments have shown.³⁸ In addition, both the roots and leaves contain plenty of methyl salicylate, which is not toxic but responsible for the strong odour of the plant.

Importantly, in 1992 a specific ergot-alkaloid was identified in the roots of *Securidaca*,³⁹ and in 1994 three more ergot-alkaloids were detected.⁴⁰ Ergot-alkaloids are very rare in higher plants.⁴⁰ Their main pharmacological characteristic is their uterine contracting effect. Very similar molecules are used, in purified form, in modern obstetrical practice. The plant used in the Yagha must therefore be considered to be both toxic and almost certainly effective in causing abortions.

The therapeutic margin of *Securidaca* must be quite limited.⁴⁰ Several women were very much aware that they had to take the correct doses and of the risks associated with attempting to abort with higher doses in cases of advanced pregnancy. Even if an experienced woman supervises the preparation of the drink, the problem of dosage must still be considered because of the purgative side effects of *Securidaca*. The standard view provided by the women that "this plant is very effective, if you drink the liquid in the morning, you will abort in the evening" should therefore be considered as the best case scenario rather than the usual outcome of the treatment.

Conclusion

Knowledge of abortifacients is common among all ethnic groups in the Yagha. The abortifacient best known in the area, *Securidaca longepedunculata*, contains both ergot-alkaloids and several poisonous substances. It is almost certainly effective in provoking abortions, but its therapeutic margin seems narrow. Induced abortions are likely to be the cause of the severe vaginal bleedings that had been reported at the provincial hospital. In the absence of other means of birth control, abortions induced with the help of oral abortifacients form an important part of the Yagha reproductive behaviour repertoire. There is a need to rapidly introduce safer birth control methods.

REFERENCES

1. Caldwell J and Caldwell P. Marital status and abortion in sub-Saharan Africa. In: Bledsoe C and Pison P. *Nuptiality in sub-Saharan Africa*. Oxford: Clarendon Press, 1994:274-95.
2. Lesthaeghe R, Ohadike PO, Kocher J and Page HJ. Child spacing and fertility in sub-Saharan Africa: an overview of issues. In: Page HJ and Lesthaeghe R (eds.). *Child spacing in tropical Africa: traditions and change*. London: Academic Press, 1980.
3. Maier D. Nineteenth-century Asante medical practices. *Comparative Studies in Society and Medicine* 1979; 21(1): 63-81.
4. Klein MA. Women in slavery in the western Sudan. In: Robertson CC and Klein MA. *Women and slavery in Africa*. University of Wisconsin Press, 1983:67-89.
5. Nichols D, Ladipo O, Paxman JM and Otolorrin EO. Sexual behaviour, contraceptive practice, and reproductive health among Nigerian adolescents. *Stud Fam Plann* 1986; 17:100-6.
6. Bleek W. Induced abortion in a Ghanaian family. *African Studies Review* 1978; 21:103-20.
7. Esiet NO. A call for action. *Growing up* 1996; 4(2): 3,10.
8. Pale C. Contribution a l'etude des avortements provoqués. Thèse de doctorat, à propos de 860 cas recensés en milieu hospitalier au Burkina-Faso. Université Nationale du Bénin, 1987.
9. Pazio AJ. State of unsafe abortion in Burkina Faso. Presented at the Conference on Unsafe Abortion and Post Abortion Family Planning in Africa, Mauritius, March 24-28 1994.
10. Chow LP, Grulm W and Chang WP. Feasibility of the randomised response technique in rural Ethiopia. *Am J Public Health* 1979; 69:273-6.
11. Okonofua F. Preventing unsafe abortions in Nigeria. *Afr J Rep Health* 1997; 1(1): 25-36.
12. Huntington D, Mensch B and Miller V. Survey questions for the measurement of induced abortion. Presented at the annual meeting of the Population Association of America, San Francisco, California, April 6-8, 1995.
13. West KM. Practices of untrained TBAs and support for TBA training and utilisation. In: Traditional birth attendants in seven countries: case studies in utilisation and training. *WHO Public Health Papers* 1981; 75.
14. Nyazema NZ. Poisoning due to traditional remedies. *Cent Afr J Med* 1984; 30(4): 80-83.
15. Parrot D. A basis of a local pharmacopoeia for northern Nigeria. *J Trop Med Hyg* 1970; 73:36-38.

16. Ramdé F. Les avortements clandestins provoqués. Thèse pour le diplôme d'état de docteur en médecine, Université de Ougadougou, 1989.
17. Goergen R, Maier B and Diesfeld HJ. Problems related to schoolgirl pregnancies in Burkina Faso. *Stud Fam Plann* 1993; 24(5): 283-94.
18. Prost RP. Principales plantes du pays Mossi. In: Notes et documents voltaïques. Ougadougou, 1971; 4(3): 12-60,4(4): 3-49.
19. INSD Direction de la recherche démographique, Rapport final provisoire, Etude de "Folk-Demography" comme base d'une politique de population en Haute Volta, ORSTOM, 1979.
20. Riesman P. Freedom in Fulani life. University of Chicago Press, 1974.
21. Kirk-Green AHM. Maudu Laawol Pullako: survival and symbiosis. In: Adamu M, Kirk-Greene M (eds). *Pastoralists of the West African Savannah*. Manchester University Press, 1979.
22. Meillassoux C. Femmes, Greniers et capitaux. Paris: Maspéro, 1975. 23. Swanson RA. Gourmantché ethnoanthropology. University of America Press, 1985.
24. Dupire M. Organisation sociale des peul. Etude d'éthnographie comparée. Librairie Plon, Paris, 1970.
25. Hopen CE. *The pastoral Fulbe family in Gwandu*. Oxford University Press, for the International African Institute, 1964.
26. UNSO. Unpublished paper: Enquête socio-démographique dans le département de Sebba. Dori, Burkina Faso, 1991.
27. Figa-Talamanca I, Sinnathuray Ta, Yusof K, et al. Illegal abortion: an attempt to assess its costs to the health services and its incidence in the community *Int J Health Serv* 1986; 16(3): 375-89.
28. Bognounou J, CRNS, Ougadougou, personal communication, 1993.
29. Aubreville A. Flore forestière soudano-guinéenne. Société d'éditions géographiques, maritimes et coloniales 1950:134.
30. Dalziel JM. The useful plants of West Tropical Africa. Appendix to: Hutchinson J, Dalziel JM. The flora of West Tropical Africa, published on behalf of the Federal Government of Nigeria, and the Governments of the Gold Coast, Sierra Leone and the Gambia, Crown Agents for Oversea Governments and Administrations, London 1960:27.
31. Irvine FR. *Woody plants of Ghana*. London: Oxford University Press, 1961:61-62.
32. Khéraro J. *La pharmacopée Sénégalaise traditionnelle, plantes médicinales et toxiques*. Paris: Editions Vigot Freres 1974:663-6.
33. Maydell HJ. Arbres et arbustes du sahel: leurs caractéristiques et leurs utilisations. Eschborn:GTZ 1992:349.
34. Dupire M. Pharmacopée peule du Niger et du Cameroun. *Bull IFAN* 1960; 19(B3/4): 382-417.
35. Dehne KL, Wacker J, Nadembega J and Ira R. Female genital mutilation in the north of Burkina. *Currare* 1997; 20(2): 221-42.
36. Dehne KL, Wacker J and Cowley J. Training birth attendants in the Sahel. *World Health Forum* 1995; 16:415-9.
37. Neuwinger HD. Afrikanische arzneipflanzen und jagdgifte. Wissenschaftliche verlagsgesellschaft mbH Stuttgart 1994:683-9.
38. Yao P'ei-P'ei, Sung Chen-yu. The metabolic fate of securinine. *Chinese Med J* 1975; 1(3): 205-15.
39. Costa C, Bertazzo A, Allegri G, et al. Indole alkaloids from the roots of an African plant, *Securidaca longepunculata*. Isolation by column chromatography and preliminary structural characterisation by mass spectrometry. *J Heterocycl Chem* 1992; 29:1641-7.
40. Neuwinger HD, 68789 St. Leon-Rot, Germany, in a letter to the author, 1994.