

## ORIGINAL RESEARCH ARTICLE

# Obstetric Danger Signs and Factors Affecting Health Seeking Behaviour among the Kassena-Nankani of Northern Ghana: A Qualitative Study

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## Abstract

Improving community members' knowledge of obstetric danger signs is one strategy for increasing the use of skilled care during pregnancy and the puerperium. This study explored knowledge of obstetric danger signs among a range of community members, examined the sources of their information, and the perceived factors that affect health seeking behaviour in rural northern Ghana. We conducted 72 in-depth interviews and 18 focus groups with community members. All interactions were audio taped, transcribed verbatim and analysed using NVivo 9.0. Community members demonstrated knowledge of a wide range of obstetric danger signs, including excessive bleeding, stomach aches, waist pains, vomiting and fever. Pregnant women learn about danger signs from a range of providers, and regular contact with formal providers typically coincided with increased knowledge of danger signs. Traditional remedies for problems in obstetrics are plentiful and cultural beliefs often restrict the use of allopathic medicine. Increasing knowledge of obstetric danger signs is necessary but not sufficient to overcome cultural preferences for traditional treatments for pregnancy danger signs. (*Afr J Reprod Health 2014; 18[3]: 78-86*)

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**Keywords:** Obstetric danger signs, knowledge of danger signs, health seeking behaviour, antenatal care, maternal health, Ghana

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## Résumé

Améliorer la connaissance des signes de danger obstétrical par les membres de la communauté est une stratégie visant à accroître l'utilisation des soins qualifiés pendant la grossesse et le post-partum. Cette étude a exploré la connaissance des signes de danger obstétrical parmi un éventail de membres de la communauté. Elle a étudié aussi les sources de leurs informations, et les facteurs perçus qui influent sur le comportement menant à la bonne santé dans les régions rurales du nord du Ghana. Nous avons effectué 72 entrevues en profondeur et de 18 groupes de discussion à cible auprès des membres de la communauté. Toutes les interactions ont été enregistrées sur bande audio, transcrites et analysées à l'aide de NVivo 9.0. Les membres de la communauté ont fait preuve d'une connaissance d'un large éventail de signes de danger obstétrical, y compris les saignements excessifs, des maux d'estomac, des douleurs à la taille, des vomissements et de la fièvre. Les femmes enceintes apprennent des signes de danger grâce à une gamme de fournisseurs et les contacts réguliers avec les fournisseurs officiels ont coïncidé en général avec une meilleure connaissance des signes de danger. Les remèdes traditionnels pour des problèmes pendant la grossesse sont abondants et les croyances culturelles limitent souvent l'utilisation du médicament allopathique. Améliorer la connaissance des signes de danger obstétrical est nécessaire mais pas suffisante pour surmonter les préférences culturelles pour les traitements traditionnels pour des signes de danger de la grossesse. (*Afr J Reprod Health 2014; 18[3]: 78-86*)

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**Mots-clés:** signes de danger obstétrical, connaissance des signes de danger, comportement menant à la bonne santé, soins prénatals, santé maternelle, Ghana

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## Introduction

Although maternal mortality ratios have dropped globally, the rate of decline has been slow in sub-Saharan Africa<sup>1</sup>. Since the launch of the Safe Motherhood Initiative in 1987, several efforts have

been made to improve maternal health and reduce maternal mortality<sup>2</sup>. These have mainly focused on improving referral systems for emergency obstetric care, improving access to skilled attendants at delivery, and monitoring progress through maternal mortality and morbidity audits.

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Increasing knowledge of obstetric “danger signs” is one strategy aimed at encouraging the utilisation of skilled care during pregnancy and the puerperium<sup>3-7</sup>. Yet many pregnant women and their families in developing country settings have limited understanding of obstetric danger signs<sup>8-10</sup>, causing delays in reaching a facility with trained providers when complications occur<sup>9</sup>. Knowledge of obstetric danger signs is related to the first of the three critical delays identified by Thaddeus and Maine; the other two being the delay in arriving at a health facility, and the delay in providing adequate care<sup>11</sup>.

Every pregnancy carries some degree of risk<sup>6,12</sup>, and for every maternal death, between 15 to 30 women who survive childbirth suffer from short- and long-term disabilities such as obstetric fistula, ruptured uterus, or pelvic inflammatory disease<sup>13-15</sup>. Complications can occur any time from conception to the postpartum period. Fortunately, many obstetric complication can be effectively managed if warning signs are detected early and acted upon promptly<sup>11</sup>. Information on obstetric danger signs is usually delivered to pregnant women during antenatal clinics, but the quality of the service in low-income settings has been described as inconsistent<sup>16</sup>. In northern Ghana, only 65% of women attending ANC report being told about obstetric danger signs<sup>17</sup>.

This study explored knowledge of obstetric danger signs among a range of community members, examined the sources of their information, and the perceived factors that affect health seeking behaviour.

## Methods

*This study was nested within the Stillbirths and Neonatal Deaths Study (SANDS) conducted from July-October, 2010 in the Kassena-Nankana East and West Districts (KNDs) in Northern Ghana<sup>18-20</sup>.*

### Research site

The research was carried out in KNDs under the purview of the Navrongo Health and Demographic Surveillance System (NHDSS). The predominantly rural districts have a population of 152,000<sup>21</sup>. The two districts are served by one hospital which acts as a referral facility for six

health centres and about 33 community health compounds.

### Sampling

Purposive sampling was done across two geographical zones within the KNDs to maximise the diversity of respondents: women with newborn infants - categorised according to place of delivery, parity and literacy - grandmothers, compound heads, household heads, community leaders, formal health care providers and traditional health care providers. “Women with newborn infants” were defined as women who had given birth within 8 weeks of the study in order to optimise their recall of information given on danger signs during pregnancy by health workers. “Grandmothers” were defined as any woman who had at least one grandchild born within the previous year. “Formal health care providers” who have the responsibility within the health system to provide information on obstetric danger signs to pregnant women and their families included physicians, community health officers (CHOs), midwives, and medical assistants. “Traditional health care providers” included traditional birth attendants (TBAs), herbalists, and other local healers not recognised by the formal medical establishment.

We conducted in-depth interviews (IDIs) with 35 women with newborn infants, 8 traditional birth attendants and local healers, 16 community leaders (chiefs, assembly members, women group leaders, community key informants (CKIs) and 13 health workers. A total of 18 focus group discussions (FGDs) were conducted with household heads, compound heads and grandmothers.

### Data collection

All IDI and FGD instruments were developed, pretested, and revised to ensure validity. Six trained field staff employed by the NHRC conducted all IDIs and FGDs, which typically lasted between 45 and 90 minutes. All interactions were transcribed into English, but local expressions without equivalent translations were retained in the local language. Interviews with health care providers were conducted in English and transcribed verbatim.

### **Data analysis**

Three of the researchers coded the text 'in vivo'. This involved making written notes on hard copies of the transcripts and reviewing the notes together. A preliminary coding structure was agreed upon and a codebook was created. Transcripts were imported into NVivo 9.0. Focused coding (using the initial coding structure as a guide) was conducted by four separate coders, including one of the researchers. Data were looked at separately by category of respondent and then in aggregate.

### **Ethics**

Ethics approval for the study was obtained from the institutional review boards of the Navrongo Health Research Centre (NHRCIRB091), the University of Michigan, and the University of North Carolina. Participation in the interviews and discussions was possible only after we obtained verbal consent from potential participants.

### **Results**

The findings were inconsistent across types of community respondents with regard to knowledge of obstetric danger signs, sources of information regarding danger signs, and factors affecting health seeking. Thus, data are presented in aggregate rather than separated by respondent type.

#### **Knowledge of obstetric danger signs**

Community members were able to list a wide range of obstetric danger signs. These included vaginal bleeding, vomiting, headaches, dizziness, edema of the legs, abdominal pains, waist pains, fever, and prolonged labour. A few respondents also mentioned the absence of fetal movement, loss of appetite, body weakness, looking pale, broken water, and difficulty in breathing. Both community members and health workers reported that women with previous births and antenatal history are more likely to be aware of obstetric danger signs than their counterparts.

*"For those who have given birth before, when some things happen to them, she will know it is a sign of danger because during the other pregnancy*

*she never experienced this, so she will go to the clinic."*(IDI, TBA)

#### **Vaginal Bleeding**

Vaginal bleeding was well recognised as a danger sign. However, it was sometimes difficult to distinguish in the course of the discussion whether this related to abnormalities in menstruation or bleeding in pregnancy. Regardless, the predominant response was to not seek treatment at a health facility for bleeding.

*"When the pregnant woman is bleeding from her vagina, we have herbs for its treatment. Women don't go to the clinic for its treatment because of poverty, so we use herbs in treating that one."* (FGD, Household heads)

#### **Vomiting**

Community members reported that vomiting is a normal phenomenon during pregnancy, yet others were of the view that once a pregnant woman starts vomiting, she must visit the health facility. Continuous vomiting was reported as dangerous to the woman and the fetus and therefore required medical attention to avoid miscarriages.

*"There are some when they are pregnant they vomit a lot, so they have to go to the hospital to check it out to see whether the pregnancy would hold (carried to term) or not."* (FGD, Grandmothers)

#### **Pain**

Pain was listed as an important indication of potential danger, occurring in the abdomen, waist, chest, pelvis, or elsewhere in the body. Interpretation of the significance of the pain was easiest for those who had a prior experience of pregnancy, but generally, it was considered a medical emergency. Sometimes, pain was confused with labour symptoms, thus prompting a visit to the health facility for appropriate diagnosis.

*"If I am getting any pains different from my previous labour then I would have to go to the hospital to get help."*(IDI, Woman with newborn

infant).

In some communities, herbs are used for managing abdominal pains during pregnancy.

*“The reason is that if you are pregnant and since you do not see what goes on in the stomach, you have to take some drugs to see whether the pains will stop or if you come to the clinic and they realise that they cannot treat you, they will refer you to the big hospital. If you get to the hospital they will examine you and will know what is worrying you and will treat you.” (IDI, CKI)*

Waist pains were often mentioned with another sign; either with abdominal pain, headache, edema of the legs or vaginal bleeding. Regardless, most community members reported that a woman having waist pain ought to seek medical attention.

### **Headache**

Headaches, which community members often associated with malaria, were most often either ignored or self-managed with analgesics. Severe headaches that occurred with other symptoms compelled some pregnant women to seek treatment outside the home.

*“They do go (to the hospital), but those who do not know will also take those herbs that treat headache that they call ‘zuu-masede’ (‘cold’ headache). They will go there with a fowl (for the traditional healer) to treat the headache and others too will go to the hospital.” (FGD, Household heads)*

### **Fever**

Participants agreed that fever is a sign of illness in pregnancy, but they differed as to whether to seek care for such a symptom, and what type of care to seek. According to some community members, a pregnant woman with untreated fever could develop psychological problems.

*“... If the people around understand her situation, they will say it is fever and will take her to the hospital ... so that it will go away. And those who will not will be following bad spirits, saying the woman has been poisoned. In such cases, the people will make the problem worse and it might*

*develop into what we call ‘zologo’ (madness).” (IDI, Women’s group leader)*

### **Source of information for obstetric danger signs**

Health professionals confirmed that as part of routine antenatal services, expectant mothers are given information on danger signs in pregnancy through verbal communication, pictures on the walls in the clinic, and pictures on the back of ANC cards illustrating danger signs. Pregnant women who attend ANC are expected to be competent in the recognition of danger signs in pregnancy.

*“When they come for antenatal registration, we educate them on the danger signs of pregnancy. So we tell them about all these things. So when they see them, they know that her life and the child’s life are in danger so they have to come.” (IDI, CHO)*

In addition, women share information when they congregate in the market place, carry out communal labour, travel long distances to fetch water, or during women’s group meetings. Women who have delivered previously often share their experiences with first-timers and their peers. This was reported as an important mechanism for pregnant women to share information on obstetric danger signs.

*“When they (health workers) warn me, anytime I am with my fellow pregnant women doing work or fetching water, I have to tell them what I was told.” (IDI, Woman with newborn infant)*

*“Over here we have women’s groups, and anytime we meet each other we talk about it. When one of us experiences something she can discuss it with her friend, and if anyone knows, she will explain.” (IDI, Woman with newborn infant)*

TBAs and grandmothers also provide information to pregnant women. TBAs reported advising expectant mothers on how to manage danger signs or where to seek care.

*“If you see any pregnant woman around, you can go to her house and have a chat with her and tell her what to be doing to keep her healthy. Also, you*

*can advise her to be going for antenatal care services in the clinic.” (IDI, TBA)*

***Factors affecting health seeking for obstetric danger signs***

Providers complained that despite being given information on danger signs and appropriate care seeking, some women do not follow their advice. Non-compliance was attributed to either women’s uncertainty about the severity of symptoms or poor understanding of health messages. First-time mothers and illiterate women were singled out for non-compliance.

*“...Some (women) you (will) talk (to), and after that, you will ask and they will still be confused. ...Those who can read, if they take the cards and just turn behind, they will see the danger signs there.” (IDI, CHO)*

Even though some pregnant women may know the danger signs in pregnancy, participants reported that there are families that prohibit hospital attendance or the use of allopathic medicine.

*“...if someone doesn't allow a woman to go to a facility, it is because the woman is in a house that still has old taboos. Most of them still pour libation concerning their health because they do not go to the hospital.” (IDI, Women’s group leader)*

Most of these individuals treat themselves with herbs at home or they consult traditional healers.

*“...usually the tendency is to self-medicate, following that maybe a visit to the traditional healer, and only then will they go to the clinic.” (IDI, Medical Doctor)*

Women whose hospital treatment fail or whose symptoms were perceived to be caused by evil spirits or witches, were reported to use herbalist and traditional healers for treatment. One participant cited a case where hospital treatment

failed and the nurse asked the pregnant woman to seek treatment at home. The reverse, where traditional treatments are initiated and the cases later end up at the hospital, was also reported.

*“There was a woman who was pregnant and the pregnancy was 'porisa' (bleeding) and she took it to the hospital. ... She said there was a day when the nurses told her that she has to come to the house for them to look for local treatment for her so that if the pregnancy will stay she will know. But she should come back to the hospital after applying the herbs for two weeks so they can observe the progress of the pregnancy.” (FGD, Compound heads)*

One household head recommended the blending of both traditional and allopathic medicine for the management of obstetric danger signs.

*“But the local herbs are also there; for me, I think we should to fifty-fifty; use the white man's medicine and local herbs. When the woman tries the hospital and it does not help, she can try the local herbs so that she can get well.” (FGD, Household heads)*

In addition, pregnant women may recognise that a particular sign or symptom could be dangerous to her health, but the choice to seek care may not be hers. Decision-makers may be her husband, the elderly male in her household, or the compound head. Once a decision to seek care is made, then the choice of either traditional or allopathic treatment must be considered.

*“It’s one thing for them to recognise that this is a danger sign, and it’s another thing to make the decision, and the decision is not made by her. A lot of the times it has to be in conjunction with the partner. And even when the decision has been made to seek treatment, then you are right at another decision-making point; should we go the traditional route or should we go orthodox?” (IDI, Health worker)*

**Table 1:** Strategies to improve knowledge of obstetric danger signs at the community level

Strategy	Quote	Implementers	Platforms	Target Population
<b>Individual Counseling</b>	<i>"What the nurses can do is to have one on one discussions with the pregnant women during antenatal to know each woman's problem". (IDI, woman with new born infant)</i>	Midwives, CHOs	Antenatal clinics	Pregnant women
<b>Peer Counseling</b>	<i>"When we go for antenatal the nurses talk to us and when we come home we also talk to each other".(IDI, Women group leader)</i>	Pregnant women	Social gatherings	Pregnant women who do not attend antenatal
<b>Community meetings</b>	<i>"Outside of ANC, we would need a whole lot of community sensitisation. Meeting opinion leaders and these should be channeled through the chiefs to the people; the natural flow; how generally information flows in the community. That's from the chiefs to the elders to opinion leaders. Yeah, these are people to rope in, in order to get information like this to seep down to women in the community. Of course women should be greatly involved in this".( IDI, Medical Doctor)</i>	Midwives, CHOs	Meetings	Opinion leaders (Chiefs, elders, women group leaders, assembly members)
<b>Group Discussions</b>	<i>"If you could have focus group discussions of just women only, they would be able to bring up their problems or issues that they feel really strong about. And then this would be fed back to the men folk, and then a consensus builds. And you'll be surprised if you get opinion leaders to buy into this, how the information will spread like wildfire in the community". (IDI, Medical Doctor)</i>	Midwives, CHOs	Focus Group Discussions	Pregnant women, TBAs , traditional healers, Opinion leaders (Chiefs, elders, women group leaders, assembly members)
<b>Engaging the Significant others</b>	<i>"Every pregnant woman is a sick person so have to be taking advise always. That is why people like us always advise them".(IDI, TBA)</i>	Midwives, CHOs	Home visits	Mother in-law, grandmother, older women in the compound, household and compound heads, TBAs
<b>Periodic community sensitization</b>	<i>"We need to have durbars periodically to educate the women about these signs. Also, the health staff, community volunteers, and traditional birth attendants need to educate them too". (IDI, CKI)</i>	CHOs, Community volunteers, TBAs, Assembly members, Women who have ever suffered a complication	Community Durbars	Community members including pregnant women
<b>Improve health worker handling of pregnant women</b>	<i>"I can tell you, there was an instance, I won't mention the health facility, but there was a health facility at one point where clients wouldn't just patronise that particular health facility because there was the perception that, the clinician there wasn't the best clinician in terms of PR (public relations), the personal relationships. So for a long time, people weren't patronizing that clinic, including pregnant women". (IDI, Medical Doctor)</i>	District Health Management Team	In-service training	Midwives and CHOs

### ***Suggestions for improving community knowledge of obstetric danger signs***

Respondents made suggestions for improving community knowledge of obstetric danger signs at the community level which are summarised in Table 1.

## **Discussion**

Community members in rural northern Ghana demonstrated knowledge of a wide range of obstetric danger signs, including excessive bleeding, stomachaches, waist pains, vomiting, and fever. Pregnant women learn about danger signs from a range of providers, and regular contact with formal providers typically coincided with increased knowledge of danger signs. Traditional remedies for problems in pregnancy are plentiful, and cultural beliefs often restrict the use of allopathic medicine.

Many studies carried out in the field have recorded pregnant women's limited knowledge of obstetric danger signs<sup>22-25</sup>, yet our data suggest that basic knowledge of obstetric danger signs was common. Nonetheless, widespread misconceptions about the cause of such danger signs influenced care seeking.

In Ghana, health workers counsel women about obstetric danger signs and provide all women attending ANC with cards illustrating potential danger signs. However, according to Nkiema et al. (2009), pregnant women are not routinely advised on obstetric danger signs during ANC visits in sub-Saharan Africa<sup>6</sup>. Considering that only 65% of women attending ANC in Ghana reported receiving such information<sup>17</sup>, the health system may need to re-examine current approaches for delivering such information. Suggested approaches could include individual and peer counseling as well as group discussions with pregnant women.

Our data suggest that families also require information on obstetric danger signs in order to adequately support pregnant women. Community members suggested varied approaches for reaching them with such information. These typically included community meetings, group discussions with community stake holders, engaging the significant others, and periodic sensitizations

through durbars, which are formal community-wide gatherings that include cultural activities such as drumming and dancing and provide an opportunity for information to be shared with a large number of people<sup>26</sup>. Although durbars are usually called by researchers and health authorities, the mobilisation of the community is usually done by the community leadership which includes chiefs, assembly members, TBAs, and CKIs. Apart from health workers delivering messages during durbars, women with previous experiences of obstetric complications could share their experiences with community members.

Our data reinforce the long-held public health aphorism that information alone is insufficient to change behaviour. The community structure and norms in rural northern Ghana suggest that thoughtful engagement of key leaders is necessary to integrate long-held traditions regarding care for pregnant women with more contemporary understanding of etiology of illness and thus the recommended path for treatment.

Traditionally, the hierarchy of care seeking for symptoms such as vaginal bleeding, headaches and fever in the KNDs starts with home remedies, progresses to traditional healers, and ends up at the health facility. For example, headaches and fever are more likely to be associated with malaria than obstetric danger signs in this region, and our data suggest that pregnant women prefer to manage fever and headaches at home to seeking formal health care. This may contribute to the delays in care-seeking that result in malaria accounting for approximately 9.4% of maternal deaths in the country<sup>27</sup>.

In addition to preferences for home treatments, women living in communities with deep-rooted cultural norms that forbid the utilisation of health facilities or treatment with allopathic medicine have difficulties accessing health care even if they recognise obstetric danger signs. This situation is compounded by the status of women in patriarchal societies where women are unable to make decisions regarding where and when they ought to seek care without consulting a male in the family. Our results are similar to those of Doctor et al., who reported limits to women's decision-making ability in Nigeria where families and households are strongly patriarchal<sup>28</sup>. In communities where

such traditional norms conflict with public health recommendations, creative efforts to bridge these gaps must be sought to properly address maternal mortality and morbidity.

### Study limitations

One main limitation of this study is that the cross-sectional design did not allow us to relate reported knowledge of pregnancy danger signs with actual care-seeking behaviour. Future research that follows women prospectively could provide valuable insight regarding whether knowledge of danger signs during pregnancy is indeed sufficient to predict prompt and appropriate treatment seeking. In addition, detailed prospective analysis could shed light on the dynamic nature of recognition of danger signs, perceived causation, and ultimate treatment seeking.

It is also possible the data may have been affected by social desirability bias, causing respondents to report what they believed the interviewer wanted to hear. We attempted to minimize this potential bias with thorough interviewer training, however it may have adversely affected our data nonetheless.

### Conclusions

Efforts geared toward increasing maternal and family knowledge of obstetric danger signs will require innovative strategies to ensure adequate comprehension of health messages during antenatal clinics and will likely require the identification of key opinion leaders such as chiefs, assembly members, TBAs, and CKIs who can serve as champions in broader community-based efforts. However, increasing knowledge will not likely be sufficient to change behaviour unless conscious efforts are made to integrate traditional beliefs and long-held cultural traditions with current public health recommendations. In addition, there is an urgent need to increase family involvement in maternal health services and empower women at the community level to reduce unnecessary delays in care seeking.

### Contribution of Authors

Raymond A. Aborigo, Cyril M. Engmann, Cheryl A. Moyer and Philip B. Adongo conceived the

study, participated in its design, data acquisition and analysis and helped draft the manuscript. Mira Gupta participated in data analysis and drafting of the manuscript. Pascale Allotey, John Williams and Abraham Hodgson had significant intellectual input into the analysis and drafting of the manuscript. All authors read and approved the final manuscript.

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