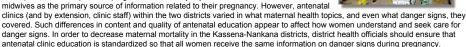
# **KNOWLEDGE OF DANGER SIGNS DURING PREGNANCY:** RECOGNITION OF AND RESPONSES TO DANGER SIGNS AMONG WOMEN IN RURAL GHANA

Silpa Thaivalappil<sup>1</sup>, Catherine Burke<sup>1</sup>, Elizabeth Rafferty<sup>1</sup>, Christina Sperle<sup>1</sup> and John Williams<sup>2</sup> <sup>1</sup>Department of International Health, School of Nursing and Health Studies, Georgetown University, Washington, D.C., USA; <sup>2</sup>Navrongo Health Research Center, Navrongo, Ghana

## **ABSTRACT**

Obstetric complications that occur during pregnancy greatly add to maternal mortality worldwide, yet many of these complications can be easily prevented with proper antenatal education. To further explore antenatal education and maternal health in a rural lowresource setting, investigators undertook a study to: (i) assess the recognition and understanding of six severe danger signs (abdominal pains, anemia, headache, swelling, vaginal bleeding, and vomiting) indicative of a complication during pregnancy among women attending antenatal clinics (ANC) in the Kassena-Nankana (KND) and Kassena-Nankana West (KNWD) districts of the Upper East region of Ghana; (ii) assess the extent to which these pregnant women act upon identified danger signs given the severity of their symptoms; and (iii) identify the sources of knowledge associated with pregnancy-related danger signs among those pregnant women attending ANC in KND and KNWD, 369 women were surveyed at six antenatal clinics within the two districts over a three-week period in November 2009. Based on survey responses, the majority of women attending ANC in the KND and KNWD appeared to recognize and understand danger signs and the need to seek professional health care for these symptoms. Results indicate that a woman's likelihood of seeking care for a pregnancy complication may be dependent upon her knowledge of danger signs during pregnancy, the perceived severity of her complication, and her experiences from previous pregnancies. The majority of the women cited nurses and



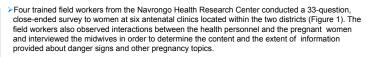
This study interviewed pregnant women living in the Kassena-Nankana District and the Kassena-Nankana West District of northern Ghana during November 2009. Women who had experienced a pregnancy anytime from 2005 to 2009 were eligible for the study.



Figure 1: Map with ANC clinic locations



Figure 2: Danger signs diagram



- Although there are many potential warning signs and symptoms related to pregnancy, the six danger signs utilized by the study were chosen because they were identified in the Maternal Health Record booklet that all the women receive during antenatal clinic visits in the two districts (Figure 2).
- >A total of 369 women were interviewed, exceeding the sample size required to obtain a 95% confidence level. The majority of women interviewed were between 20-29 years of age, had an average parity of 3.1 pregnancies in their lifetime, including their current pregnancy, and had an average of 1.9 children (Figure 3).

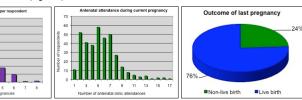


Figure 3: Sample background data from women surveyed

Objective 1: To assess the recognition and understanding of danger signs among women attending antenatal clinics in the KND and KNWD (Figures 4 and 5)

Objective 2: To assess the extent to which these women act upon identified danger signs given the severity of their symptoms (Figure 6)

Objective 3: To determine the sources of knowledge associated with pregnancyrelated danger signs among those pregnant women attending ANC in KND and KNWD (Figure 7 and 8)

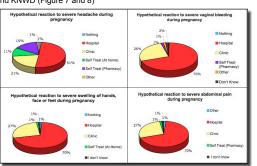


Figure 4: Recognition of danger signs from responses to hypothetical questions

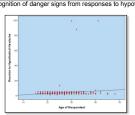


Figure 5: Representative linear regression Age v. Knowledge

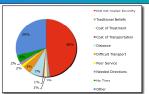


Figure 6: Reasons for delay in care seeking among women who experienced obstetric complications

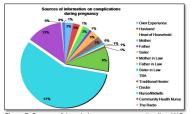


Figure 7: Sources of knowledge among women attending ANC

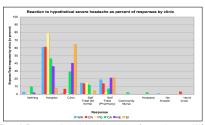


Figure 8: Representative variation in knowledge of women between ANCs

Based on the results of the survey, several factors were significant in relation to the knowledge of danger signs among women in the KND districts during pregnancy.

- Age and school attendance appeared to be a significant factor in the knowledge and understanding of danger signs.
- > The majority of women who did not seek immediate care for a danger sign were not able to recognize that the symptoms they exhibited
- For the majority of women, the primary source of knowledge about obstetric complications was a nurse or a midwife. However, there appear to be marked differences in antenatal education provided between clinics (and by extension, between clinic staff), and resulting knowledge of danger signs and care-seeking behavior among women.

A woman's knowledge of danger signs is related to the source of her information. Our results indicate that there is still unmet need among women attending antenatal clinics to obtain better education on danger signs and obstetric complications. The Kassena-Nankana districts should work to ensure that antenatal clinic education is standardized so that all women receive the same information on what danger signs to be aware of and how to respond to such signs. This standardization may be easier if the danger signs diagram on the back of the Maternal Health Record booklet is consistently used during ANC education.