Nigerian Journal of Clinical Practice
March 2008. Vol 11(1):18 -21

RISK SCORING FOR DOMESTIC VIOLENCE IN PREGNANCY

N. Ameh, S.O. Shittu, M.A. Abdul
Department of Obstetrics and Gynaecology Ahmadu Bello University Teaching Hospital Zaria Nigeria

ABSTRACT

Background: Most studies and work on domestic violence against women are aimed at helping victims. Studies aimed at detecting those at risk of domestic violence are few. Risk identification has important implications for early detection and prevention.

Methods: A risk scoring tool was developed and tested on 466 antenatal clinic attendees at 3 levels of health care in Zaria, Nigeria.

Results: The prevalence of domestic violence was 11.8%. The sensitivity of the tool was 96.6% and specificity 11.8%. The positive predictive value and accuracy were 13.7% and 22.5% respectively.

Conclusions: The tool has a high sensitivity and could be a good screening tool for identifying those at risk for domestic violence in pregnancy.

Key words: Domestic violence, pregnancy, risk scoring tool *(Accepted 5 March 2007)*

INTRODUCTION

Domestic violence is a common phenomenon and studies of its adverse effects on maternal health have been well established. These adverse effects include, unintended pregnancy, psychological trauma and low birth weight infants.[1, 2]

In the ongoing global effort at safe motherhood aimed at eliminating maternal morbidity and mortality, it is necessary to identify and eliminate domestic violence.[3, 4] Pregnant women may be exposed to domestic violence and they experience it in various forms and severity, with concomitant differences in consequence.[5] The need to prevent these adverse outcomes of pregnancy necessitates the development of a means of identifying the various severity of exposure to domestic violence and the use of a risk assessment tool is considered most appropriate for this purpose.[6]

Risk assessment and scoring is used in public health to identify individuals most predisposed to an adverse situation by virtue of being associated with some relevant factors, in order for preventive measures to be instituted.[7] Other scoring systems like the Bishop's has made the practice of labor induction easier.[8] A good screening test has high sensitivity because it identifies most of the people who have the disease.[9] Whereas most studies have identified predispositions and consequences of domestic violence, risk scoring to identify those at risk is not available. Thus, there is a need to develop a risk scoring tool for domestic violence by putting together those factors that have been identified from previous studies as predisposing factors.[10]

Correspondence: Dr N Ameh
E-mail: nkeiruameh@yahoo.com

MATERIALS AND METHODS

A risk scoring tool was developed by a collation of known predisposing factors from a previous study from the same environment and other studies on domestic violence amongst pregnant women. This tool was tested on 500 pregnant women recruited from the antenatal clinics of the three Nigerian levels of health care system: Ahmadu Bello University Teaching Hospital Zaria, a tertiary health center (300 women), Saint Luke's Anglican Hospital, Zaria, a secondary health center (100 women) and Babandodo Health Centre, Zaria, a primary health center (100 women). A questionnaire designed for the study was administered to consenting pregnant women, who completed them personally, except for the less literate who were given interpretational assistance by the first author. A total of 466 women completed the questionnaires.

The sample size was obtained using the formula: $N = Z^2\alpha PQ/d^2$, where $Z\alpha$ = standard normal deviation at 95% confidence interval =1.96, P = proportion or prevalence of the condition = 0.28, Q = 1 - P = 0.72, d = precision limit = 0.05. This yielded a sample size of

310 but this was increased to 500 in order increase the power of the study. Allocation of different values to various health institutions was based on the proportion of patients attending each health facility for antenatal care. Each risk factor was scored on a scale of 1- 3. A total score of ≥15 was considered as high risk and <15 low risk (these cut off points were arbitrarily chosen) (Table 1). The sensitivity, specificity, prevalence and positive predictive value Were calculated using EPI Info statistical software.

RESULTS

Of the 466 antenatal attendees interviewed, 59 experienced domestic violence, giving a prevalence rate of 11.6% (Table 2). Of the 59 who experienced domestic violence, 57 (96.6%) were scored as high risk and 2 (3.4%) low risk. This gives a sensitivity rate of 96.6% (57/59 x 100) and specificity of 11.8% (48/407 x 100). The positive predictive value is 13.7 (57/416 x 100) and accuracy 22.5% (57 + 48/466 x 100).

Table 1: **A Risk Scoring Tool For Domestic Violence In Pregnancy**

Risk factor	**Score**		
	1	**2**	**3**
Woman			
Age	≤21	>30	22-30
Parity	2-4	<2	>4
Occupation	Civil servant	Business	Unemployed
Marital status	Married	Single	Divorced
Alchohol Drinking/smoking	No	Yes	
No of male children	≤2	1	None
Experienced domestic violence before	No	Yes	
Husband			
Occupation	Civil servant	Business	Unemployed
Alcohol drinking/smoking	No	yes	
Family			
Type of marriage	Monogamy	Polygamy	
Type of accommodation	Separate	Family house	Shared compound

Divorce is given a higher score as divorce may be because of domestic violence or may predispose to domestic violence.

Table 2: **Risk Scoring For Domestic Violence In 466 Pregnant Women**

Score	**Domestic violence in Pregnancy**		
	Present	**Absent**	**Total%**
High risk: 15 and above	57	359	416(89.3%)
Low risk: less than 15	2	48	50(10.7)
Total%	59(13)	407(87)	466(100)

DISCUSSION

Domestic violence has come into limelight as a result of its infringement on human rights and contribution to maternal morbidity and mortality.[11]

The prevalence of domestic violence in this study is 11.6% which is lower than the 28% observed from an earlier study in this North-western part of Nigeria, [10] and also lower than those reported from South-Eastern Nigeria, [12] but higher than in Ghana. [5] The lower incidence observed in this study compared to the earlier one from the same environment, may be explained by the fact that this study was carried out at all three levels of health care rather than at the tertiary level alone. It is well known that the profiles of antenatal attendants to tertiary-level facilities may not be reflective of those of the indigenous population, largely because of their patient-selection criteria and relatively high user-charges, both of which obstruct access to some women.

Predisposing factors to domestic violence have been previously identified in several reports.[13-18] However, identifying those at risk based on individual predisposing factors may not be too helpful. A risk assessment tool based on several important factors is desirable. The risk scoring tool

in this report should be useful. The tool has a high sensitivity at 96.6% but the specificity is rather low. A sensitive test is a good screening test because it identifies most of the people who have the disease, and perhaps a few who do not.[9] This test has a high sensitivity thus is a good tool for screening pregnant women to identify those most prone to domestic violence. The weighting of the scores in the scoring tool is based on identified importance in each predisposing factor in previous reports. [13 - 18]The ultimate criterion for the usefulness of a screening test is whether it adds information beyond that otherwise available and whether this information leads to a change in management that is ultimately beneficial to the patient.[9] This screening tool adds information to the management of domestic violence and will benefit patients by drawing attention to those at risk of experiencing it so that it can be avoided. This should help in protecting those at risk by close monitoring and education of spouse and family.

The accuracy and positive predictive values of this screening tool are low but the instrument is useful in drawing attention to pregnant women at risk of experiencing domestic violence so that appropriate action can be taken to avert it. Further studies are required to validate this scoring tool and improve the specificity. It would be useful to include topics related to domestic violence, sexual and reproductive rights of women in the curriculum for doctors and nurses. [19] This is because doctors and nurses are the health care providers for pregnant women and need to have a good appreciation of issues concerning domestic violence; many victims do not easily disclose their experiences with domestic violence and need to be asked directly and specifically. Counseling and psychological support may also need to be given by doctors and nurses.

REFERENCES

1. Ending violence against women. Population Reports 1999; XXVII, December: 8 21.

2. **Pallito CC, O`campo P.** The relationship between intimate partner violence and unintended pregnancy: analysis of national sample from Columbia. International Family Planning Perspectives 2004; 30: 165-173.

3. **Egwuatu VE.** Reflections on maternal mortality in Nigeria-the fifth Okoronkwo Kesandu Ogan Memorial Oration. Tropical Journal of Obstetrics and Gynecology 2003; 20: 76-82.

4 Safe motherhood: a matter of human rights and social justice. Safe Motherhood Fact Sheet. Family Care International, New York, 1998.

5. **Kwawukume EY, Kwawukume SB.** Violence against pregnant women. Niger J Clin Pract 2001; 4:76-79.

6. **Little KJ.** Screening for domestic violence: identify, assisting and empowering adult victims of abuse. Postgrad Med J 2000; 108; 135-141.

7. **Colley Gilberts BJ, Johnson CH, Morrow B, Gaffield ME, Ahluwalia I.** Prevalence of selected maternal and infant characteristics. Pregnancy risk assessment monitoring system (PRAMS), 1997. MMWR CDC Surveill Summ 1999; 48: 1 37.

8 **Ekele BA, Isah AY.** Cervical ripening: how long can the Foley catheter safely remain in the cervical canal? Afr J Reprod Hlth 2002; 6:98-102.

9 **Lang AT, Secic M.** Determining the presence or absence of disease. In: How to report statistics in medicine. American College of Physicians, Philaldelphia. 1997; 147-169.

10. **Ameh N, Abdul MA.** Prevalence of domestic violence amongst pregnant Women attending the antenatal clinic of Ahmadu Bello University Teaching Hospital, Zaria. Annals of African Medicine 2004; 3:4-6.

11. **Baccbus L, Burley S, Mezey G.** Domestic violence and pregnancy. Obstetrician and Gynecologist 2001; 3: 56 - 59.

12. **Ezegwu HU, Ikeme AC, Onwasigwe CN.** Domestic violence against pregnant Nigerian women. Tropical Journal of Obstetrics and Gynecology 2001; 20:116 - 118.

13 **Weiss E, Maman S, Lary H, Mbwambo J, McCauley A.** Preventing HIV and partner violence. Horizons Report 2004; 7-9.

14. **Coker AL, Richter D.** Violence against women in Sierra Leone: frequency and correlates of intimate partner violence and forced sexual intercourse. Afr J Reprod Hlth 1998; 3: 61 -72.

15 **Parish WI, Wang T, Laumann Copan S, Luo Y.** Intimate partner violence in China 1. national prevalence, risk factors and associated health problems. International Family Planning Perspectives 2004; 30:174-181.

16. Society and Violence: Reflections on the role of women in the perpetration of violence in the home. In: Robson E (Ed). Women and violence. Proceedings of the 10th anniversary of Women in Nigeria Conference, Kaduna. 1993; 105-107.

17. **Graham MJ, Larsen U, Xu X.** Son preference in Anhui province, China. International Family Planning Perspectives 1998; 24:72-77.

18 **Amobi LI, Okonkwo PI, Adogu P.** Intimate partner violence among women of childbearing age in a primary health care centre in Nigeria. Afr J Reprod Hlth 2002; 6 : 53-55.

19 **Adeyemi AB, Irinoye OO, Oladimeji BY, Fatoye FO, Fatusi OA.** Detection of indices of violence against women by health professionals in a Nigerian Teaching Hospital. Tropical Journal of Obstetrics and Gynaecology 2005; 22: 27-32.