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RISK SCORING FOR DOMESTIC VIOLENCE IN PREGNANCY

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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

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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

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

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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% ($57/59 \times 100$) and specificity of 11.8% ($48/407 \times 100$). The positive predictive value is 13.7 ($57/416 \times 100$) and accuracy 22.5% ($57 + 48/466 \times 100$).

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 |
| Alcohol 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.

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