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High Risk Pregnancy: A Retrospective Study

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Abstract

The records of 408 pregnant women were reviewed to measure staff performance and work efficiency in four maternal and child health centers in Southern Iraq. Under-recording was evident as only 18% of the women were identifed as high risk by the health staff; whereas, the author identified two thirds of the pregnant women (66%) as high risk because of having one or more of the risk factors. The results of the study show the inability of staff to recognize the importance of risk identification and antenatal care continuity. No correlation was found between antenatal care and the place of delivery. The performance of some of the necessary screening tests was poor. Discussion will include further staff training and a new risk scoring system as a means to improve the efficiency of health workers and improve the effectiveness of the risk strategy in antenatal care in that setting.

Key words: Antenatal care, pregnancy, risk factors, scoring system.

It is commonly accepted that the two main goals of health planners are to provide equitable health services and good quality of care. These goals are rather difficult to achieve, particularly in developing countries, due to scarcity of both human and financial resources.

The equitable provision of health services may reduce the quality of the services provided, which are as undesirable as not providing the services at all. This applies particularly to maternal and child health services as they serve a vulnerable group which is subjected to higher risks when compared with the general population.

A strategy has been adopted to provide services for all the vulnerable groups with special attention to cases in need.[1,2] This high risk strategy was adopted by the WHO as a crucial step in compensating for an increased workload.[3]

The Ministry of Health (MOH) in Iraq adopted almost the same risk criteria used internationally for the selection of high risk pregnant women. These include, for example: age of less than 20 years; primigravida over 35 years; multigravida over 40 years; pre-pregnancy weight of more than 95 kg and of height less than 145 cm; poor obstetric history; poor medical history; poor family history; and the presence of abnormal test results, which refer mainly to abnormal urine, such as the presence of albumin or glucose, or abnormal blood results, such as sickling or anemia.

Any woman having one or more of these risk criteria was identified by the health staff as a high risk case and a large red letter R was marked on her card; furthermore, her name and address were registered in a special book kept at the center for follow-up of the nonattendees (no shows).

The present study was carried out to examine the current high risk selection system employed by the Ministry of Health at maternal and child health centers in Basrah (Southern Iraq) Governorate. The study mainly examined the implementation of the program. The criteria of high risk

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selection, the efficacy of recording of those criteria by the health staff, and the main areas of under-recording were highlighted.

Methods

The women using antenatal care services at four maternal and child health centers in Basrah City, Southern Iraq, were the study population.

Twenty percent of each months' records were reviewed at each one of the four maternal and child health (MCH) centers for one year.

A total of 408 women's records were studied. Data were extracted mainly on the total number of risk factors for each case, whether the health staff identified the risk, follow-up procedures and the number of antenatal visits, investigations and screening tests performed, place of delivery, and the most common risk factors that have been identified by the health staff and those they have missed.

The author used the same risk criteria adopted by MOH (Iraq) to categorize risk status at pregnancy and compared the results with staff performance.

Results

Four hundred and eight antenatal records were analyzed at the four MCH centers. Almost a third, 122 (33%), of those women were primiparous. There were 269 high risk women (66%); only 74 (18%) were identified by the health staff (Table 1).

Out of the 269 high risk women, more than half, 153 (57%), had only one risk factor; more than a third, 87 (32%), had two risk factors; nearly 29 (11%) had three or more risk factors (Table 2). The risk criteria related to poor medical or obstetric history were mainly missed while Rh negative status was easily identified in the majority of cases.

Furthermore, Table 2 shows no difference between women of different risk status with respect to the place of delivery. It appears that even those pregnant women who had three or more risk factors had delivered at home in a similar proportion to those women without risk factors.

Women also were compared according to the number of antenatal care visits appearing on their antenatal cards. Though the proportion of women making more than three visits (63.2%) was higher among the high risk group (Table 3), the difference was not statistically significant.

Performance of the main antenatal screening tests was poor. Table 4 shows that only 73% of the high risk women had hemoglobin estimation during pregnancy. Simple urine tests were done for only 132 (49%) of the high risk group. Blood grouping and Rh typing were done only for 54% of the women in the high risk group.

During physical examination, blood pressure readings were carried out on 230 (85.5%) of women in the high risk group and 115 (82.7%) of women without risk factors.

One hundred and eighty-five (69%) of the high risk group women were weighed as well as 91% of the group of women with no risk factors. Height was not measured or recorded for any of the studied women.

Table 1. Risk status of the 408 women studied by source of identification.

	High risk	%	No risk factors	%
Author	269	66	139	34
Staff	75	18	333	82

Table 2. Number of risk factors in high risk women by place of delivery

Place of delivery	1 (153)	3 (87)	≥3 (29)	Total
Hospital	109	62	20	191
Home	44	25	9	78
Percent (home delivery)	29	29	31	29

Discussion

High risk pregnancy strategy has been implemented for a number of years in Iraq. Yet, the value and effectiveness of such a program need to be evaluated, as there are yet few experiences in Iraq and in other parts of the developing world regarding the impact and value of the risk detection system for mothers and children. The main objectives required from high risk strategy are:[2]

1. Better quality of care
2. More time available for the staff to care for needy cases only
3. Competent use of available resources

This study shows that more than two thirds of the pregnant women (66%) were high risk. The large size of the high risk group seems to be greater than the capacity of the services in place to handle them adequately and fulfill those objectives efficiently. Consequently, to master the load, we have to increase the resources available, which allows special care for all pregnant women regardless of their risk status.

The other option is to decrease the size of the risk group and provide a special care program for only the most needy cases. The latter view might meet the objectives required by the high risk strategy.

We think that the criteria for high risk selection as defined by MOH are too sensitive and result in such a high proportion of high risk group. Nevertheless, if we consider the current inaccuracy of recording at these centers, a larger number of high risk pregnant women will be identified if the staff inaccuracy in risk selection is corrected.

We expect a difference between women at risk and those without risk factors with respect to the number of antenatal visits and place of delivery. Our expectation was based on the women being advised and referred by the staff for better care and more frequent visits. However, our results do not

show the differences we expected. It seems that women choose their delivery place according to their beliefs. Evidence shows that in many cases women delivered at home with the help of untrained persons after attending antenatal visits.[4] Thus, the value of those visits will be questionable in such cases.

The number of antenatal visits often is used to indicate quality, though quality does not depend on quantity alone. There is no agreement as to the optimal number of antenatal visits. The fact that a woman has made several antenatal visits is no guarantee that all screening procedures were undertaken. Barros[3] showed an inverse relationship between a risk score and the number of antenatal visits. Although in our study we did not find this inverse relationship, no difference was found between the high risk and those without risk factors, regarding the number of antenatal visits. Again this reflects the staff's inability to educate women, particularly those at risk, to have more frequent visits.

Low performance indicates low quality of care. Low performance for a number of important screening antenatal test was also evident. The fact that mothers who did not receive these tests were more likely to be of the high risk group is a serious deficiency in the organization of antenatal services.

The health staff seems keen to identify some risk factors, such as Rh negative status or sickle cell disease, while the presence of other risk factors such as poor obstetric or poor medical history was not appreciated by the staff as risk factors.

Lastly, the risk detection system is worthless if necessary health measures were not taken for those identified as high risk.[6] It appears from the study that women with identified risk factors were recorded in a register book for special follow-up arrangements. However, at each visit, they were mixed with pregnant women with no risk factors. We believe that the use of special colored cards for such cases will help identify the high risk pregnant women and distinguish them easily from other attendees.

In summary, the results show a poor standard of staff performance and low quality of antenatal care. We think that the problem reflects:

First, the staff's lack of knowledge and adequate training, which impairs their performance in this new program.

Second, the problem of a heavy workload has not been solved by using this high risk strategy. Thus, staff find it hard to provide a good quality of care with a high number of attendees each day. Further training programs are needed to improve staff knowledge and performance.

A weighted scoring system would be useful to decrease the size of the high risk group, whose members need the more specialized care. The weight given for each score would depend on the magnitude of the relative risk caused by the studied factor and the unwanted outcome. For example, a score of one will be given to pregnant women under 20 years or to multiparous women over 40 years of age. A score of two will be given for high parity (seven or more), etc. Each woman will be grouped by her aggregate score. This scoring system needs to be explored further.

Further studies are recommended to follow-up on those not identified as high risk and compare their outcome with those identified by the health staff as high risk.

Table 3. Number of antenatal visits by risk status

Number of visits	High risk	%	No risk factors	%
<3	99	37	59	42
≥3	170	63	80	58
Total	269		139	

Table 4. Performance of screening tests by the women's risk status.

	High risk	%	No risk factors	%
Hb%	195	73	122	88
Urinalysis	132	49	79	57
Blood group & Rh typing	142	54	80	58
Blood pressure	230	86	115	83
Weight	185	69	126	91
Height	0	0	0	0

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