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Implementing Women's Health Programs in the Community: The Bangladesh Experience

Effectiveness of Antenatal Risk Screening: A preliminary analysis of pregnancy records from BRAC's Women's Health and Development Program

AMR Chowdhury
S.A. Chowdhury

Introduction

The aim of BRAC's Women's Health and Development Program (WHDP) was to reduce maternal mortality and morbidity through the provision of antenatal and internatal services. Based on the fieldworker's assessment of each woman's risks, the fieldworker advised the woman whether to deliver the baby at home or to go to a hospital or a similar facility. The criteria for risk assessment are provided as Annex-I. Within these criteria, a woman was considered at risk if she presented with any of the following:

- If she was a primi-gravida of age 18 or lower and shorter than 145 cms.
- If she was a grand-multipara (3-4) and 35 years or above
- If she had a history of pre-eclampsia; eclampsia; ante or postpartum hemorrage; prolonged labor with forceps delivery, cesarian section, still birth, or prolapse of any extremities
- If she presented with no movement or abnormal movement of the fetus
- If she presented with a combination of albuminuria and a diastolic pressure higher than 90 mm of Hg in her current pregnancy or odeama (any two symptoms)
- If she presented with sugar in the urine or symptoms of jaundice

Materials and Methods

The data for this analysis came from three field areas of WHDP, i.e.-- Dinajpur, Bogra and Fulbaria. Every woman at the time of registration was provided with an antenatal card with the purpose of recording information on the woman including her demographic and socioeconomic status, and obstetric history. The card was also used to update information on her current pregnancy. The information contained in the card assisted BRAC fieldworkers in determining whether the woman was at particular risk; if so, it helped the worker to take preventive or preemptive action.

The risk factors

The program used a series of factors in identifying pregnancy risks. These factors can be categorized into the following four broad groups. Annex-1 gives a complete list of the factors: a) demographic and other personal fctors, b) previous pregnancy-related complications, c) present pregnancy, d) familial history of chronic diseases.

Cards of all women who were identified as pregnant during 1994 and 1995 were included in the analysis. A total of 11,240 cards were brought from the field and entered into the computer. Analysis was done using SPSSPC+.

In analyzing the effectiveness of risk screening, we used sensitivity and specificity concepts. We also calculated the positive and negative predictive values. The following provides the definition of the concepts as used in our analysis.

Definitions

Sensitivity : Percent of outcomes correctly predicted by the risk factor (A ÷ G)

Specificity : Percent of persons without the outcome who were correctly predicted (E÷H)

Positive predictive value : percent of persons with a particular risk factor who developed the complication (A ÷ C)

Negative predictive value : percent of persons judged to be risk free who did not go on to develop the complication (E ÷ F)

Table 1. Risk analysis concepts

	Outcome		
Risk factor	present	absent	Total
Present	A (true positive)	B (false positive)	C (total defined at risk)
Absent	D (false negative)	E (true negative)	F (total defined risk free)
Total	G (at risk)	H (not at risk)	Total

Source : Fortney (1995)

Results

Background Information

Age : Over 80 percent of the women were in the age group 18-35 years. Just over 16 percent were in the 'risk' age of either under 18 or over 35 (Table 2). The mean age of the women and their husbands was 23 and 30 years respectively.

Table 2. Age of pregnant women

Age (Years)	Frequency	Percent
<18	1464	13.0
18-35	9377	83.4
35+	399	3.5
Total	11240	100.0

Households owning less than 50 decimals of land were considered as 'poor'; i.e., the same definition used by the major poverty alleviation programs in Bangladesh. Eighty-five percent of all women were classified as poor. Only 3.3 percent of women reported a familial history of the identified chronic diseases.

Each woman made on average four antenatal visits with 61.5 percent making four or more visits (Table 3).

Based on their assessment of risk for each woman, the fieldworker recommended where the delivery should take place. Half the women were advised to have their babies delivered at a hospital. However only 10 percent of the deliveries took place at hospitals.

Table 3. Pregnant women by number of antenatal visits

No. of AN visits	Frequency	Percent
1	1238	11.9
2	1150	11.1
3	1602	15.5
4	1868	18.0
5	1999	19.3
6	1493	14.4
7	814	7.9
8	181	1.7
9	20	.2
	10365	100.0

There were 15 deaths recorded among all the 11240 pregnant women. Assuming that all deaths were recorded, the maternal mortality rate was 134. Table 4 shows the cause of death as recorded on the pregnancy card.

Table 4. Cause of pregnancy-related death

Cause	Frequency	Percent of death
Eclampsia	3	20.0
Retained Placenta	1	6.7
Puerperal Sepsis	1	6.7
Antepartum Hemorrhage	2	13.3
Postpartum Hemorrhage	1	6.7
Postoperative Shock	3	20.0
Weakness	1	6.7
Diarrhea	1	6.7
High Blood Pressure	1	6.7
Abdominal Pain	1	6.7
Total	15	100.0

Of the 15 deaths, we have further information on 11. Ten of the women who died were advised to have their delivery at hospital, but only 3 did. The one who was advised to have the delivery at home was taken to a hospital where she died.

Table 5 shows whether fieldworkers were able to predict the onset of complications that the women experienced during deliveries. The table indicates that those who were advised to deliver at a hospital indeed experienced slightly more complications especially prolonged/obstructed labor and retained placenta. This difference is not significant.

Table 5. Recommended place of delivery and type of complications during delivery

	Type of complications (percent)						
Recommen-ded Place of Delivery	Prolonged/ Obstructed Labor	Retained Placenta	Prolapse of cord	Eclampsia	Others	No Complications	Total
Hospital (n= 1755))	19.9	8.3	.9	.6	1.0	69.3	100.0
Home (n=704)	13.4	6.6	.8	.6	.7	77.9	100.0
Total	16.7	7.4	.9	.6	.9	73.6	100.0

Table 8. Recommended place of delivery and presence of complications during actual delivery

Recommended Place of delivery	Some complication	No complication	Total
Hospital	538 (30.6%)	1217 (69.4%)	1755
Home	376 (22.1%)	1328 (77.9%)	1704
Total	914	2545	3459

Sensitivity 58.9; Specificity 52.2

+ve pred. value 30.6; -ve pred. value 77.9

Table 9. Recommended place of delivery and actual outcome of pregnancy

	Outcome of pregnancy		
Recommended place of delivery	Others*	Live birth	Total
Hospital	469 (9.5%)	4481 (90.5%)	4950
Home	381 (8.0 %)	4410 (92.0%)	4791
Total	850	8891	9741

* Others included undesired termination of pregnancy through still birth, premature birth, abortion, etc.

Sensitivity 55.2 ; Specificity 49.6
+.ve pred. value 9.5 ; - ve pred. value 92.0

Table 10. Recommended place of delivery and birth weight of baby

Recommended Place of delivery	Weight <2.5kg	Weight >2.5kg	Total
Hospital	281 (28.8%)	1072 (79.2 %)	1353
Home	266 (20.9 %)	1008 (79.1%)	1274
Total	547	2080	2627

Sensitivity 51.4; Specificity 48.5

+ve pred. value 20.8; -ve pred. value 79.1

Discussion

In this paper we analyzed field data from BRAC's Women's Health and Development Program (WHDP) to determine the effectiveness of the riskscreening procedure used in the program. The women defined as at risk were advised to have their babies delivered in hospitals. In our analysis we tried to determine the value of the screening with respect to a few outcome indicators. We calculated the sensitivity, specificity, the positive

predictive value, and the negative predictive value for each outcome indicator. We also highlighted the false positive and false negative values, which we feel were more helpful in evaluating the screening system. Several issues emerge from this analysis.

We found that the screening system that BRAC used was much too non-specific. This means that it identified a very large proportion of women (50%) who were assessed as high risk. Such a 'liberal' procedure results in very high proportion of 'false positive' cases and low 'false negative' cases. Table 11 gives a summary of false positive and false negative proportions for various outcome indicators.

Having a high proportion of false positives is a problem where cost is an issue and where the referral system is not ready or able to take on a large load of patients. Both are issues in Bangladesh. Even if Bangladesh had the capacity to house 50 percent of pregnant women in waiting homes, they would not come and since most would have normal deliveries, the program would lose credibility.

The challenge is how to reduce the number of false positive cases without significantly increasing the number of false negative cases. This is not easy. In the BRAC case, the screening procedure includes 14 factors, which is far too many. For operational purposes, alone, this number needs to be reduced. If the program can discard less-sensitive factors, then the proportion of false positive cases may be reduced. Factors that give the smallest proportion of both false positive and false negative cases should be chosen and fieldtested. Data are being further analyzed to select a smaller number of these factors.

Table 11. Assessment of BRAC screening indicator : False positive and false negative for various outcomes

Outcomes	False positive (%)	False negative (%)
Live birth/No live birth	90.5	8.0
Delivered at home/ Delivered at hospital	87.3	7.3
Normal delivery/ delivery with interaction	94.2	4.4
No complication in delivery/some complications	69.4	22.1
No maternal death maternal death	99.7	0.04
Birthweight of 2.5 kg or below/LBW	79.2	20.9

A Self Sustainable Adolescent Health and Development Program

Shaheen Akhter Dolly

Nari Moitree is a non-governmental development organization established by a group of women working to bring about changes in society through empowering women. A particularly vulnerable group is urban adolescent girls. They have very little education and are particularly vulnerable to social explotation, undernutrition, and certain diseases such as STDs. For these reasons Nari Moitree has undertaken programs to help adolescent girls in Dhaka City. The project located at Madertake, Ward No. 27, began in May 1996. The reporting period described below was from May to December 1997. A total of 287 adolescent girls were identified as beneficiaries of the program that was designed to provide health services, family life education, professional skill training, and credit. Thirty groups of girls, ranging in age from 9 to 18 years, were formed for the training and education.

Goal

To prepare adolescents for adult realities, parenthood, and leadership as well as establishing their position in the family and society as a whole.

Objectives

- To raise awareness among adolescents so that at least 80 percent of them are capable of explaining the basic facts of life
- To raise awareness in 85 percent of adolescents participating in the program about the negative effect of early marriage and adolescent pregnancies
- To inform 50 percent of adolescents about their legal rights
- To develop the skills of 25 percent of adolescents in different trades
- To provide health services to adolescent girls

Components of the program included reproductive health care services; life-oriented education; group formation; numeracy and literacy for illiterate adolescents; skill training; credit; legal support; and programs to increase community and parental awareness of the adolescent programs. Details of some of the components are noted below:

Reproductive Health Care Service

We have one clinic open 9 am to 4:30 pm daily that is specially for all adolescent girls in the area. One female MBBS doctor, a counselor, and an aya run staff clinic with the doctor providing treatment per diagnosis. Clinic services include:

- Antenatal and postnatal services for pregnant adolescent girl
- TT given to married and unmarried adolescents

- General treatment for adolescent girls
- Medicine at purchase cost

A total of 645 patients were seen during the reporting period with the following conditions: Diarrhea (21), RTI (12), Peptic ulcer (39), Gyn. Problems (109), Anaemia (24) Worm infestations (20) and Other (410).

Life-Oriented Education

We have provided adolescents life education in the group meetings where girls learn basic knowledge on family integrity, family norms, civil rights, as well as personal hygiene, etc.

The classes of 15 to 20 girls were held at the group leader's house. Organizers delivered lessons using question and answer method, picture analysis, story analysis, and practical examinations. Nari Moitree is using the VHSS's AFLE curriculum.

The impact of the education could be measured from the attitude and behavior of the girls toward personal cleanliness, gender relations, and human rights. Girls are more tidy and clean than before and they have the courage to express their feelings in front of their parents, relatives, and community people. We have so far provided this life-oriented education to 287 adolescent girls.

Group formation

During the reporting periods, 22 groups of 10-15 members were formed. The group members sit weekly to discuss savings, credit, health, leadership, women rights, daily lifestyles, group ethics, and empowerment. We have also provided training on leadership and entrepreneurship. A total of 22 leaders have received seven days of leadership training, and seven days entrepreneurship training has been given to 171 adolescents.

Skill Training and Credit

Adolescent girls realize that they must do something economically for their family and themselves. A total of 46 out of 287 adolescents have received a 12 to 14 days of training on different trades including packaging, food processing, and embroidery.

After receiving this skill training, the girls expressed the need for credit support Credit support ranging from Tk. 200-3000 was provided to those who are now engaged in small business and earning money. Their parents also are helping them in business while they are in the meetings or in the class.

Credit was given at a 15 percent flat rate for small trade businesses such as vegetable businesses, fruit businesses and other associated ventures.

Awareness activities for community people and parents

We have contacted the community to organize meetings with community people, parents, and the opinion leaders. A total of 12 community meetings were held during this period.

A case study

Rumana, age 16, a beneficiary of NM, has learned about early marriage. Her parents were looking for a groom but she tried to convince her parents that she is too young to take on the responsibilities of marriage both physically and mentally. Because her family was not ready to give up a prospective husband for their daughter, Rumana sought the help of the NM organizer to convince her parents and family. After discussion about the forthcoming marriage and its implications for Rumana's life, the NM organizers convinced her family to stop the marriage. Rumana is now continuing with her studies.

Staff strength for this project

The staff of seven includes: 1 coordinator, 1 doctor, 1 accountant, 2 health workers, 1 organizer, and 1 helper. All are responsible for the implementation of the project. This program is under the direct guidance and supervision of the Executive Director. Supervision and monitoring checklists are used to provide need-based quality services, and to monitor program management and finance activities.

Problems faced over the last eight months

- Most parents did not give completely correct information about their adolescent daughters
- Parents came to the clinic more than their adolescent girls did
- Some parents did not allow us to talk to their adolescent girls about the family planning life cycle, HIV/AIDS, STDs, and the facts of life
- Slum leaders and commissioners were sometimes reluctant to cooperate

Impact of the program

- Parents come to the clinic with adolescent girls to talk about problems
- Parents are pleased that their girls can protect themselves
- Parents want services for the adolescent boys as well
- The community invites us to meetings to discuss and solve social problems
- Adolescent girls are eager to learn computer skills, driving, and want to become electricians and mechanics.

Conclusion

Observing the positive aspects that the project has brought to adolescents, parents, and the community has been a moving experience. We discussed further plans with the community, and they made the following recommendations:

- Essential services are needed for adolescent girls and the program needs to continue
- A more integrated program will help needy families of adolescents
- More advocacy and lobbying with different development activists is needed
- Training for new trades should be introduced
- Quality services should be ensured