COMPETENCE OF THE PROGRAMME ORGANIZERS IN ANTENATAL CARE : AN ISSUE OF THE QUALITY OF CARE

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EXECUTIVE SUMMARY

BRAC has implemented the Women's Health and Development Programme (WHDP) in the northern and central regions of Bangladesh to reduce maternal and child death. Among the various components of the programme, organization of antenatal care centres (ANCC) is an important activity. This study measured the quality of care in terms of the competence of programme organizers (PO) in antenatal care as provided by the programme in three thanas of Bogra region. Thirty three POs were observed at the ANCCs over a total of 201 consultation sessions with pregnant women. Experienced data collectors carried out their field activities under meticulous supervision of a medical doctor. Competence of the POs in relation to each of the services rendered at the ANCCs was rated on a scale with five levels. Overall competence of the POs was rated on a scale with three levels. Analysis of standards of specific services rendered at the ANCCs ranged competence of the POs high to low levels. But the overall assessment rated competence levels as low.

Competence of the POs in relation to measuring height and weight and providing relevant information was rated as `high' and `moderate-high' respectively. About 80% of the pregnant women were weighed adequately and 75% of the women whose weight was lower than expected were advised to take some measures.

POs' competency with respect to measuring blood pressure and fundal height and providing relevant information was rated `moderate' and `low-moderate'. About 49% were

adequately examined for blood pressure and 57% of the women who were found to have high blood pressure received some advice. Nearly all women were examined for fundal height while only 20% were adequately examined. However, 13% of the women were found to have a fundal height less than the week of gestation and of them, 86% received advice.

Unfortunately, the competence of POs in relation to measuring anaemia and oedema and providing relevant information was rated 'low'. About 87% of the pregnant women were examined for anaemia but only 19% were adequately examined. At the same time, 40% of the women who were found to be anaemic were advised to take some measures to combat anaemia. About 62% of the pregnant women were checked for oedema but only 8% were adequately examined. However, women who were found to have oedema were advised to take some measures.

Finally, competence with respect to providing information on possible side-effects of iron tablets, haemorrhage and urinary tract infection was rated 'low'. About 14% of the pregnant women were informed of side-effects of iron tablets. Furthermore, only .7% of the pregnant women were questioned about vaginal bleeding or spotting and 11% about urinary tract infections.

Poor screening at the ANCCs may overlook many grave consequences of pregnancy related problems and consequently, narrow down the possibility for taking any effective measures. Besides, inadequate information dissemination at the ANCCs causes women to be unaware of the importance of antenatal care which may result in irregular or discontinuity of attendance. At the same time, lack of awareness about pregnancy-related problems may also keep women unaware of how and where to get correct services at the right time.

Overall performance of the POs may raise many questions in relation to their training in antenatal care and post-training follow-up; training in session management; supervision of the activities; self-awareness; motivation; and working environment. To improve competence of the POs in antenatal care, the following issues need to be considered:

1. Training curriculum needs revision;
2. Training of the newly recruited staff should be ensured;
3. Practical training at the field level should be emphasized;
4. Post-training follow-up must be ensured;
5. Training of the POs on session management can be considered;
6. The programme may liaise with the government health administration to allow their intern doctors to work at the field level as part of their in-service training to provide practical training to the POs at the ANCCs and to assess their competence as well;
7. Effective supervision must be strengthened;
8. The POs should be provided with a checklist for identifying pregnancy-related problems;
9. Periodic assessment of competency should be conducted by written or practical test. Based on the performance, incentives can be given in the form of salary increments;
10. Provisions for recreational facilities, rewards for the best POs, surety of timely promotions, increased facilities for maintaining family life, etc., may raise the impetus of the POs to work more effectively.

11. Responsibilities for certain activities, such as growth monitoring and motivation of the pregnant women for antenatal care can be delegated to the community health workers. This would reduce some of the workload for POs.

INTRODUCTION

Background

Over the past two decades, much attention has been paid worldwide to reducing maternal morbidity and mortality (1). In Bangladesh, reducing maternal deaths has been a major concern of the government and the non-government organizations (NGOs). BRAC, one of the largest NGOs in the world, has implemented multiple strategies to confront causes of maternal morbidity and mortality (2). The majority of the pregnancy-related complications and deaths are avoidable. Antenatal care can contribute to a decline in maternal mortality by detecting and treating complications, educating women to recognize obstetric danger signs, and advising and motivating women and their families how to make appropriate use of available services (3). The necessity of antenatal care to reduce maternal mortality rate is clearly evident in many studies. In a study in Addis Ababa, a maternal mortality rate of 2.4 per 1,000 live births was found among women who had received prenatal care compared with a rate of 6.4 per 1,000 among those who had received none (4).

Nevertheless, success of antenatal care largely depends on the quality of care.[1] The mere existence of health services is not enough to meet the need of the clients; its acceptance and utilization is very much associated with the quality of care. Competence of the health providers is a critical aspect of the quality of care. Competence not only ensures an adequate level of health care

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[1] Quality of care refers to the way the individuals and clients are treated by the system providing services (5).

but also meets individual health needs and expectations. As Donabedian's work states: the central essence of competence is the application of knowledge and technology in a manner that maximizes benefits and minimizes risks of health (6). Incompetency of health providers in providing services at antenatal clinics may contribute to adverse outcomes of pregnancy. A study in Mozambique revealed that in spite of attending the ante-natal clinics 80% of deaths were from preventable causes such as anaemia and eclampsia, because they did not get a proper ante-natal checkup (7). Another study showed that in Primary Health Centres of India many women attending for antenatal care were not screened either for anaemia or blood pressure (7). Further poor quality of antenatal screening affects women's faith in the health providers and hence, reduces the usefulness of antenatal care.

BRAC has extended services to pregnant women at its primary health facilities through the Women's Health and Development programme (WHDP). The programme organizers (PO) provide antenatal care at the grassroots level through the antenatal care centres (ANCCs). Although activities of antenatal care seems to be successfully implemented in the operational areas of WHDP, a literature survey revealed that such was not the case in all spheres of antenatal care (8,9). A number of studies have focussed on the quantity of services rather than on the quality of care. Moreover, whereas several studies reported knowledge of the community health workers about antenatal care and tuberculosis, there has been no information regarding competence of the POs in antenatal care (10,11,12). Recently, by applying Bruce's quality of care framework, a study was effectively carried out in a community-based TB control programme of BRAC where

competence of the POs was also observed (13). That methodology is quite different from the one used in this study.

There is much hope that POs' competency in antenatal care may bring some changes in the state of mortality and morbidity. Since the programme has passed more than five years, it is an appropriate time to assess the competence of the POs to know how effectively the programme has provided services at the ANCCs. The importance of assessing POs' competence also lies in the fact that it provides opportunities for further training of the staff and helps planners to plan more effectively for improvements in programme functioning and service quality. This study has been undertaken in the WHDP areas to assess the competence of the POs and thus to draw attention to the quality of antenatal care provided at the primary health facilities.

Objectives

Broadly, the objective of the study was to determine the quality of antenatal care in WHDP by assessing the competence of the POs. Specifically, the objectives of the study were as follows:

1. To examine competence of the POs with respect to clinical

testing, identifying pregnancy-related problems and providing relevant information; and

2. To raise policy and programmatic issues as well as recommendations for making the programme more effective.

Operational process of antenatal care in WHDP

BRAC launched WHDP (2) in 1991 in the northern and central parts of Bangladesh. Of the 10 thanas under WHDP, a pilot programme on maternal mortality reduction operates in two thanas following BRAC's community approach[2], and the target approach[3] has been followed in the remaining eight thanas. Besides, being provided with antenatal care at the ANCCs, women are regularly informed of pregnancy related care through different meetings and forums.

The ANCC, an outreach station of WHDP, is organized in a village once a month to deliver services to pregnant women. The POs are BRAC-appointed female health workers who have the overall responsibility of organizing and managing maternal health care at the village level. They identify pregnant women during their household visits (once in every three months). They are assisted by the trained traditional birth attendants (TBAs), Shasthya Shebikas (SSs), and members of the Gram Committees (GC). Services provided at the ANCCs are as follows:

-Recording of height, weight and blood pressure

-Examination of abdomen

-Examination for anaemia, oedema and jaundice

-Test of urine for albumin and sugar

-Examination of breasts, if history suggests its needs

-Education on health and nutrition

Community approach is that when service is given to people irrespective of socio-economic condition.

Target approach is that when service is given only to target population. Target population includes households having less 50 decimals of land, and a household member (12+ years old) who sells manual labour for at least 100 days a year for val.

-Provision of iron and folic acid tablets

-Identification and referral of high risk cases to hospitals

Records of antenatal check-ups are maintained in two antenatal cards. One card is given to the pregnant woman. The other is kept with the PO. It records information of present and past obstetric history, antenatal check-up, child-birth, postnatal care, etc.

Overall activities of the POs are supervised by senior POs, area managers, area-coordinators and medical officers. The medical officer, in particular supervises the technical aspects. In addition, medical officers discuss different technical issues with programme staff at the area office. In weekly meetings, the problems arising in the field are discussed thoroughly. Moreover, WHDP has its own management information system (MIS) which informs the programme managers and staff continuously about the progress and deficiency of the programme.

Training of POs

During 1990-1991 a comprehensive training course of 45 days was arranged for the POs at the training and resource centres (TARC) of BRAC. The training curricula emphasized human development and technical aspects of primary health care. Human development included issues of communication, social mobilization and training methodology. Technical aspect focussed on reduction of maternal mortality, tuberculosis, acute respiratory infections, common diseases and ailments, family planning, water and sanitation, health education, growth monitoring, etc. Themes included in the training curricula for the reduction of maternal mortality are as follows:

- Anatomy and physiology of female reproductive organs

- Identification of pregnancy and registration of pregnant women

- Goals and objectives of antenatal care

- Activities of the ANCCs

- Identification of pregnancy-related complications

- Pre-eclampsia and eclampsia, blood pressure, anaemia, ante-partum and post-partum haemorrhage

- Urine test and eye estimation of haemoglobin

- Management of labour

- Food and nutrition needs of pregnant women and lactating mothers

- Diagnosis and treatment of pregnancy-related complications

- Maternity waiting home

Of the 45 days, 7 days were spent in Azimpur maternity centre for practical training on maternity care. Moreover, in 1994, a 6-day training course was arranged for newly recruited POs in Bogra region, and for both old and new POs in Dinajpur region. This training basically focussed on orientation to the programme. It was comprised of:

-Goals and objectives of the WHDP

-Different components and activities of the WHDP

METHODS

Quality of care can be viewed from the perspectives of structure, process and outcome (15,16). Various approaches to assess the quality of care have been exercised in health and family planning programmes. Quality assessment of a programme is a judgement on its process of care by the health practitioners (15). Donabedian put a great deal of emphasis on technical competence (15). In this study, we tried to assess the technical competence of POs in terms of their skills and actual performance in following adequate methods for clinical examination, in diagnosing some pregnancy-related problems or complications, and providing information to pregnant women. Technical competence of the POs was assessed by using explicit criteria (15). Essential questions in relation to clinical examination and identification of pregnancy related problems were drafted through extensive literature review, field observation and pretesting of the questionnaires.

The study was conducted in February 1996 in three thanas of Bogra region of the WHDP. The POs who provide services to pregnant women at the ANCCs were included in the study. Due to political problems in the country and sudden change of plan of the POs, we failed to observe activities of all the POs of Bogra region at the ANCCs during our scheduled time. In total, 33 POs were observed at the ANCCs. A total of 201 consultations with pregnant women were observed by seven data collectors under meticulous supervision of a medical doctor. The seven data collectors had been trained for a period of five days with one day training at the field.

The observers went to the ANCCs before the session began and stayed there till it ended. During the session, they sat at the ANCCs with the POs. The POs were not informed about the

objective of the study. Sometimes pregnant women are examined in their houses if they fail to attend the ANCCs. Under such circumstances, the observer accompanied the PO to the pregnant woman's house. It is assumed that the presence of an observer is likely to affect the activities of health providers but we believe it did not in this case. The effect of observer bias was minimized by observing all pregnant women attending the ANCC.

Initial analysis of the data showed some trivial difference between thanas. Hence, all the observations were merged and analysed together. Frequency tables were prepared earlier. Subsequently, the competence of the POs was scored. The variables used to assess the competence of POs were their measurements of anaemia, oedema, weight, height, fundal height, blood pressure, urine test, haemorrhage, urinary tract infection and iron-tablets. The term `adequate' is used when examination procedure for identifying any problem is carried out at a reasonably acceptable level at the ANCCs. Yet adequacy in examination may not mean accurate clinical diagnosis. Since clinical tests are mostly used in diagnosing pregnancy-related problems in the WHDP, we gave more importance to adequacy of examination. Besides providing pregnancy-related information at the ANCCs, BRAC provides relevant information to women through different meetings and forums at the village level. Hence, in this study, information provided to pregnant women who suffer any problem is accepted as reasonable regardless of its source, and is used in data analysis.

Anaemia is said to be adequately examined when in the case of women who are examined for the first time, conjunctiva of both eyes, mucous membrane of the mouth, and nail beds are all observed in proper light. In case of those who are examined for the second or more times,

conjunctiva of both eyes and mucous membrane of mouth must be observed in the same way. Oedema is said to be adequately examined when the ankle below medial malleolus/dorsum of foot and the shin of tibia of both legs are examined. Blood pressure is said to be adequately examined when the meter of the sphygmomanometer is placed at the level of the heart, the bell of the stethoscope is placed over the brachial artery right below the flexor surface of the elbow and the cuff is deflated and wrapped around the arm properly. Weight is said to be adequately examined when the machine is first set at `zero' and placed on the flat surface. Height is said to be adequately examined when the patient is asked to stand against the wall or pole and the top of the head is marked on the wall and a tape is used to measure the length. Urine test for albumin and sugar is said to be adequately done when a stick is dipped in the urine for 5 seconds and observed after one minute to see any change in colour. Fundal height examination is said to be adequately performed if examination is carried out after evacuation of bladder.

Services rendered were rated as `high', `moderate-high', `moderate', `low-moderate' and `low' depending on the performance of the POs. The ways of scoring for anaemia, oedema, weight, height, fundal height and blood pressure are presented below:

Rating	Adequate examination		Information
High	↑ 80.0%	and	↑ 80.0%
Moderate-high	↑ 60.0%	and	↑ 60.0%
Moderate	↑ 40.0%	and	↑ 40.0%
Low-moderate	↑ 20.0%	and	↑ 20.0%
Low	↓ 20.0%	and	↓ 20.0%

However, scoring for haemorrhage, urinary tract infection and iron-tablets has been done in the following way:

Rating	Information
High	↑ 80.0%
Moderate-high	↑ 60.0%
Moderate	↑ 40.0%
Low-moderate	↑ 20.0%
Low	↓ 20.0%

Urine test was excluded from our scoring because we failed to observe its adequacy in examination.

The overall assessment of competence was rated as high, moderate and low. Competence of POs was rated high when out of 9 variables, 5 or more scored high and the rest scored moderate-high or moderate. Similarly, it was labelled moderate when 5 or more of the 9 variables scored moderate and the rest scored either moderate-high or low-moderate. It was rated low when 5 or more variables scored low-moderate or low.

FINDINGS

General profile of POs: Table 1 describes the general profile of the observed POs (see appendix). Over half of the POs (51.4%) were in the age group between 26 and 30 years. Among all the POs, 54.5% had SSC level of education and 27.3% had graduation degree. About 69.7% of the POs received training from WHDP for 45 days and 12.1% for 6 days. However, 18.2% received no formal training. The majority of the POs (66.7%) had been involved with BRAC for more than 7 years and 48.4% with the WHDP for more than 5 years.

Anaemia: Table 2 shows how the POs examined for anaemia of the pregnant women and discussed the matter during their consultation (see appendix). Even though 87.1% of the pregnant women were examined for anaemia, an adequate method of examination was followed in only 18.9% of the women. Concurrently, the ANC card was filled in for anaemia in 98.0% of the cases, i.e. an over-reporting of 12% was found. Moreover, 93.0% of the women were recorded as anaemic. Among women who were actually anaemic, some 40.0% received advice. Of all advice, iron tablets (71.6%) and vegetables (90.5%) were mostly mentioned. It is pitiful that 60.0% were not even provided with an explanation of measures to be taken against anaemia.

Oedema: Table 3 presents the data on how oedema was examined among the pregnant women and what information was provided to them for oedema (see appendix). For oedema, 61.7% of the

pregnant women were examined but an adequate method of examination was followed in case of only 8.4% of the pregnant women. However, the ANC card was filled in for 99.0% of the cases which far exceeds the number of women examined. Moreover, 4.5% of the women were recorded to have oedema. During discussion, those who suffered from oedema were consulted. Of them, 33.3% were advised lower salt intake, 44.4% to put pillow under legs and 33.3% to take dry food.

Blood pressure: Table 4 presents how the POs measured blood pressure of pregnant women and discussed the consequences of high and low blood pressure and the measures taken (see appendix). Blood pressure was measured for all the pregnant women, but the method of examination was adequately observed in only 48.8% of the cases. In 99.5% of the cases, the ANC card was filled in. About 3.5% of the women were recorded to have high blood pressure. Of them, a number of women (57.1%) received advice. Most were advised to avoid salt (75.0%) and some were advised to take rest (25.0%). However, 42.9% were not advised at all about any measures.

Weight: Table 5 presents an analysis of weight measurement of the pregnant women and information provision for weight gain (see appendix). Although 96.0% of the pregnant women were weighed, an adequate method of examination was followed in 80.1% of the cases. In almost all cases, the ANC card was filled in. However, 26.0% gained lower than expected weight and of them, 75.5% received advice. Among all advice, to eat good/frequent food (75.7%) and to eat vegetables (67.6%) were notable.

Height: Table 6 presents data on height measurement of the pregnant women and information provided at the ANCCs (see appendix). Height is usually examined during the first visit at the ANCC. All pregnant women attended the ANCCs for the first time were examined for height and the examination method was adequately followed. The ANC cards were filled in. Only 12.2% of the cases were recorded to be less than 145cm and advised for hospital delivery.

Urine test: Urine is tested only for those who attended the ANCCs for the first time, who were not tested before, who have high blood pressure or who have oedema (Table 7). About 30.3% of the pregnant women had urine tested for albumin and sugar. Of them, 3.3% had albumin and 1.6% had sugar in urine. They were advised to avoid sweets, drink water and eat vegetables.

Fundal height: Table 8 presents what method the POs followed in examining fundal height of the pregnant women and how the PO discussed the whole matter (see appendix). Although 98.5% of the pregnant women were examined for fundal height, only 20.2% were adequately examined. In 94.5% of the cases, the ANC card was filled in. About 13.1% were found to have fundal height less than week of gestation and of them, 84.6% received advice. Among women who received advice, 86.4% were advised to take nutritious food and 90.9% to take vegetables.

Side-effects of iron tablets: About 14.4% of the pregnant women were explained about side-effects of iron tablets and its remedial measures (Table 9). Of them, 58.6% were explained about side-effects and 72.4% about remedial measures.

Haemorrhage: Table 10 presents whether the POs asked pregnant women about any vaginal bleeding or spotting and any measures taken for it (see appendix). Only 7.0% of women were asked whether they suffered vaginal bleeding or spotting. Among them, 35.7% were informed to take some measures for haemorrhage, such as consulting a doctor (60.0%), contacting a hospital (60.0%), moving carefully (20.0%), avoiding hard work (40.0%), avoiding sexual intercourse (20.0%), etc. Unfortunately, 64.3% were not informed of any issues related to haemorrhage.

Urinary tract infection: Table 11 presents whether the PO asked pregnant women about urinary tract infection and what measures to be taken for it (see appendix). Only 11.4% of the women were inquired of urinary tract infection. Of them, 91.3% were advised to take some measures, including drinking water, contacting PO, eating vegetables, etc.

DISCUSSION

The provision of antenatal care is a preventive measure in safe motherhood programmes. This study assessed the competence of POs in performing antenatal care in BRAC's WHDP and thus measured the quality of care of the programme. In this section, an attempt is made to discuss the major findings and to point out the issues of concern for planners and policy makers at BRAC.

Competence of the POs

As mentioned in the text, the competence of POs was judged by observing skills and performance of the POs in carrying out clinical tests and providing necessary information to pregnant women. After scoring and rating, the competence of POs is measured on a five level scale. The present analysis shows that competence of the POs in relation to height measurement is of high standard. All women were adequately examined for height, and were informed about the place of delivery. However, height is not a good indicator for risk assessment. Still, we believe that for a community-based programme, where no modern facilities for childbirth are available, short-statured women (under 145 cm) should be considered as `high risk'.

Analysis rated the competence of POs with respect to weight of `moderate-high'. It has been found that 80% were adequately weighed and 76% of the women who gained lower than expected weight received some information about weight gain. Yet, the content of the information seemed inadequate. It is indeed understandable that the whole procedure for conducting ANCC is

time-consuming, but the point is, whether information dissemination really serves the purpose of health education?

Further, the competence of POs was rated `moderate' with respect to blood pressure and `low-moderate' with respect to fundal height. Pregnancy-induced hypertension is one of the leading causes of maternal and perinatal death. Although all pregnant women were checked for blood pressure, a little less than half were adequately examined and a little more than half of the women having high blood pressure were advised to adopt some preventive measures. Unfortunately, women who had high blood pressure or oedema were not tested for albuminuria. In fact, many critical consequences can be avoided if clinical tests are appropriately carried out. Intrauterine growth is indicated by increase in fundal height. Many serious conditions, such as, intrauterine growth retardation and foetal death can be predicted by the size of fundal height. It is regretfully admitted that fundal height was adequately examined in only 20% of the women. To avoid the grave consequences of pregnancy-related problems, adequate clinical examination should be emphasized.

Unexpected results were observed in the cases of checking anaemia and oedema; diagnosing haemorrhage and urinary tract infections; and providing information for side-effects of iron tablets. The rating of POs' competence in relation to those variables was of low standard. Poor antenatal screening for anaemia is indicated by the fact that 87% of the women were examined, but only 19% were adequately examined. It is true that the majority of pregnant women in Bangladesh suffered from iron deficiency anaemia. This does not mean that women need no proper examination for diagnosing anaemia. And what is more important here is that an adequate

examination indeed distinguishes whether women have been suffering from acute or chronic iron deficiency anaemia. Poor quality of examination may overlook many important signs which help diagnose critical cases. In a number of cases, the shin of tibia was not examined, which may miss mild cases of pre-eclamptic toxaemia. Unfortunately, oedema was adequately examined in only 8% of the pregnant women. We wondered whether the POs were themselves fully aware of the consequences of inadequate antenatal screening.

Poor screening at the ANCCs may narrow possibilities for taking or suggesting any effective health maintenance measures. Besides, inadequate information dissemination at the ANCCs causes women to be unaware of the importance of antenatal care. As a result, women may discontinue attendance of the ANCCs. Inadequate information deprives women of awareness of consequences of pregnancy-related problems and also keeps them unaware of how and where to get correct and timely services. Without directing attention to the quality of care, usefulness and effectiveness of antenatal care cannot be achieved. In fact, quality improvement in antenatal care can save millions of lives and enhance other quality of life as well.

Methodological issues

It is essential for the programme to monitor the competence of POs periodically if not regularly. The explicit criteria used to judge competence of the POs can further be developed as assurance tools to be used by the programme. It is worth-mentioning that indicators used here can only judge adequacy in examination but not accuracy in diagnosis. But information provided during ANCC sessions can also be effectively collected by using this tool. More importantly, such data can be

collected by a non-medical person who has enough competence and experience in such field work. However, the presence of an observer at the ANCCs did not seem to improve the performance of the POs. It may have been that the POs were not aware of their performance shortfalls. Moreover, the observers sat at the centres for such a long period that the POs got used to their presence and performed their typical activities at the ANCCs. Observer bias was also minimized by observing all the clients attending the ANCCs. A more detailed research on other aspects of quality of care is required for more useful suggestions.

Policy issues

The overall performance of the POs raised a few questions: Were the POs adequately trained? Was the post-training follow-up of the POs adequate? Were the POs adequately supervised? Were the POs aware of the quality of their performance? Was the poor performance due to negligence or lack of motivation of the POs? Did the POs work in a favourable environment?

The training curriculum is praiseworthy but perhaps it needs a little revision. Consequences of major pregnancy-related complications along with some focus on pathophysiology can be added to training curriculum. Otherwise use of visual aids, such as documentary films on the contextual issues may raise trainees' knowledge, skills and awareness about the importance of maternal health care. Films can also be arranged occasionally at the area office. Post-training follow-up could not be made, possibly due to lack of female doctors in the programme areas. Similarly, activities of the POs could not be properly supervised at the ANCCs for the same reason.

However, training is continuously provided by the doctors at the area office. If possible, all pertinent issues with respect to maternal health care should be discussed successively within a certain period of time, not to mention that quality must be ensured. All the doctors should follow the same guidelines during the training of POs. Furthermore, training should be ensured for all the newly recruited POs not only to build up their confidence but also to enhance their credibility. Hands-on training is very important and cannot be arranged at the ANCCs without female doctors. Perhaps it would be possible to establish a condition with the government health administration to encourage female intern doctors to work at the field level as part of their in-service training. Periodic supervision of POs' performance and hands-on training at the ANCCs can possibly be arranged if it is effective. However, the intern doctors must follow the guidelines of the programme. Although this plan may sound utopian or somehow beyond expectation, if it were established, not only would BRAC's programme get benefitted in the near future but also the doctors would achieve tremendous experience.

More emphasis should be given to the internal supervisory system. Supervision could be done in such a way that teaching and discussion might continue together. During supervision, inadequacy in performance needs constructive criticism and should be corrected simultaneously. Thus, the POs could carry out their activities effectively and acquire some knowledge and skills as well. Moreover, the POs could be provided with a complete checklist of specific questions regarding pregnancy-related problems. This would help them remember the issues that need to be explored during antenatal check-up. Furthermore, competency tests, either written or practical,

could be arranged periodically to assess the PO's skills and ability. On the basis of their performance, incentives, in the form of salary increments could be considered.

More importantly, an issue of serious concern is whether performance of the POs is due to negligence or lack of motivation. Whatever be the reasons, we should remember that working in rural areas is a tedious job. Apart from effective supervision, some sort of motivation should also be available, such as recreational facilities, rewards for the best POs, promotion, increased facilities for maintaining family life, etc. These may bring some changes in the POs' lives and raise their impetus to work more effectively.

There is much concern as to whether the POs really work in a favourable environment. Nevertheless, the POs spend considerable time and energy in motivating pregnant women to attend the ANCCs. During the ANCC sessions, the POs not only provide antenatal care to pregnant women but also conduct growth monitoring of children under 1 year old and assist the government health workers in holding Expanded Programme on Immunization (EPI) sessions. However, participation of community health workers in such activities is also noteworthy. But the problem is, because the POs are responsible for the overall activities, they must move like shuttle-cocks during the entire sessions of the ANCCs. As a result, in most cases, the whole session gets mismanaged which frustrates both the POs and the clients. Given such circumstances, training of the POs on session management should be considered. Furthermore, responsibilities for some activities as growth monitoring and motivation of the pregnant women for antenatal care could be delegated to the community health workers, which would somewhat reduce the workload of the POs.

CONCLUSION

The study assessed the quality of care in terms of the competence of POs in antenatal care. The competence of POs was rated using literature review and the authors' own judgement (see page 9 and table 12 in appendix). Since the rating of competence is a complex process, it is perhaps critical to summarize the whole finding by a simple rating. We understand that the programme has been working very hard to reduce maternal and child death rates at the rural areas. Unfortunately, the findings of the study indicated that the competence of POs in antenatal care was of a low standard.[4] Much attention needs to be directed towards improving this competency. Since the programme has been showing substantial progress in service coverage, from the viewpoint of the quality of care it will do much better if emphasis is placed on quality improvement and assurance. Research on other aspects of the quality of care is recommended for further suggestions in relation to supervision, management, and performance of health providers, as well as accessibility and availability of services to the target population.

Of all services rendered at the ANCCs, nine were selected to assess competence. Among the nine items, five scored scored either high or moderate-high or moderate or low-moderate.

APPENDIX

Table 1. General profile of programme organizers

	% of the POs	N=33
Age		
21-25	30.2 (10)	
26-30	51.4 (17)	
31-35	15.4 (5)	
36-40	3.0 (1)	
Education		
SSC	54.5 (18)	
HSC	18.2 (6)	
BA/BSC+	27.3 (9)	
Training		
45-day training	69.7 (23)	
6-day training	12.1 (4)	
None	18.2 (6)	
Years in BRAC		
1-2	15.1 (5)	
3-4	9.1 (3)	
5-6	9.1 (3)	
7+	66.7 (22)	
Years in WHDP		
1-2	15.2 (5)	
3-4	36.4 (12)	
5+	48.4 (16)	

Table 2. Competence of POs in examining anaemia and providing relevant information at the ANCCs

	% of the pregnant women
Examined	
Yes	87.1 (175)
No	12.9 (26)
N	201
Examination	
Adequate	18.9 (38)
Inadequate	68.2 (137)
NA	12.9 (26)
N	201
Record in ANC card	
Anaemia present	93.0 (187)
No anaemia	5.0 (10)
Not recorded	2.0 (4)
N	201
Information provided to anaemic women	
Yes	40.0 (74)
-Iron tablet*	71.6 (53)
-Vegetable*	90.5 (67)
-Supplement food*	16.2 (12)
-Egg*	6.8 (5)
-Small fish*	4.1 (3)
-Rest*	9.5 (7)
No	60.0 (137)
N	187

*Multiple responses considered

Table 5. Competence of POs in examining weight and providing relevant information at the ANCCs

	% of the pregnant women
Examined	
Yes	96.0 (193)
No	4.0 (8)
N	201
Examination	
Adequate	80.1 (161)
Inadequate	15.9 (32)
NA	4.0 (8)
N	201
Record in ANC card	
Yes	99.9 (199)
No	1.0 (2)
N	201
Weight gain	
≥Expected	44.9 (88)
<Expected	26.0 (49)
NA*	29.1 (56)
N	193
Information provided to women weighed <expected	
Yes	75.5 (37)
-Eat good/frequent food**	75.7 (28)
-Take nutritious food**	35.1 (13)
-Drink water**	48.6 (18)
-Eat vegetable**	67.6 (25)
No	24.5 (12)
N	49

*Women attended for the first time

**Multiple responses considered

Table 6. Competence of POs in measuring height and providing relevant information at the ANCCs

	% of the pregnant women
Examined	
Yes	24.4 (49)
No	0.0 (0)
NA	75.6 (152)
N	201
Examination	
Adequate	100.0 (49)
Inadequate	0.0 (0)
N	49
Record in ANC card	
Yes	100.0 (49)
145 cm+	87.8 (43)
<145 cm	12.2 (6)
No	0.0
N	49
Information provided	
Hospital delivery	100.0 (6)
N	6

Table 7. Competence of POs in urine test and relevant information provision at the ANCCs

	% of the pregnant women
Urine test	
Yes	30.3 (61)
No	69.7 (140)
N	201
Record in ANC card	
Albumin in urine	3.3 (2)
Sugar in urine	1.6 (1)
None	95.1 (58)
N	61
Information provided for albumin in urine	
Yes	100.0 (2)
Drink water*	100.0 (2)
N	2
Information provided for albumin in urine	
Yes	100.0 (1)
-Avoid sweet*	100.0 (1)
-Drink water*	100.0 (1)
-Eat vegetable*	100.0 (1)
-Can have big baby*	100.0 (1)
-Can have abortion*	100.0 (1)
N	1

Table 8. Competence of POs in examining fundal height and providing relevant information at the ANCCs

	% of the pregnant women
Examined	
Yes	98.5 (198)
No	1.5 (3)
N	201
Examination	
Adequate	20.2 (40)
Inadequate	79.8 (161)
N	198
Record in ANC card	
Yes	94.5 (190)
No	5.5 (11)
N	201
Increase in fundal height	
≥week of gestation	70.7 (140)
<week of gestation	13.1 (26)
NA*	16.2 (32)
N	198
Information provided to women with fundal height <week of gestation	
Yes	
-Eat nutritious food**	84.6 (22)
-Eat vegetable**	86.4 (19)
-Drink water**	90.9 (20)
-Move carefully**	68.2 (15)
-Take rest**	36.4 (8)
No	13.6 (3)
N	15.4 (4)
	26

*On palpation of abdomen, fundal height was not felt
**Multiple responses considered

Table 9. Competence of POs in providing information on side-effects of iron tablets at the ANCCs

	% of the pregnant women
Informed	
Yes	14.4 (29)
No	85.6 (172)
N	201
Information for side-effects	
Yes	58.6 (17)
-Loose motion*	64.7 (11)
-Nausea*	47.1 (8)
-Vomiting*	17.6 (3)
-Black stool*	17.6 (3)
No	41.4 (12)
N	29
Information for remedial measures	
Yes	
-Take vegetable*	72.4 (21)
-Drink water*	57.1 (12)
-Take tablets with/right after meal*	71.4 (15)
No	
N	19.0 (4)
	27.6 (8)
	29

Table 10. Competence of POs in detecting haemorrhage and providing relevant information at the ANCCs

	% of the pregnant women
Queries on haemorrhage	
Yes	7.0 (14)
No	93.0 (187)
N	201
Information provided	
Yes	35.7 (5)
-Contact Doctor*	60.0 (3)
-Contact Hospital*	60.0 (3)
-Move carefully*	20.0 (1)
-Avoid hard work*	40.0 (2)
-Avoid sex*	20.0 (1)
No	64.3 (9)
N	14

*Multiple responses considered

Table 11. Competence of POs in detecting urinary tract infection and providing relevant information at the ANCCs

	% of the pregnant women
Queries on UTI	
Yes	11.4 (23)
No	88.6 (178)
N	201
Information provided	
Yes	91.3 (21)
-Drink Water*	90.5 (19)
-Eat Vegetable*	81.0 (17)
-Contact Doctor*	9.5 (2)
-Contact PO*	52.4 (11)
No	8.7 (2)
N	23

*Multiple responses considered

Table 12. Overall assessment of competence of the POs

	Assessment Criteria	Frequency	Rating
Anaemia	Not examined	12.9	Low
	Inadequate examination	68.2	
	Adequate examination	18.9	
	Information	40.0	
Oedema	Not examined	38.3	Low
	Inadequate examination	53.3	
	Adequate examination	8.4	
	Information	100.0	
Blood pressure	Not examined	0.0	Moderate
	Inadequate examination	51.2	
	Adequate examination	48.8	
	Information	57.1	
Weight	Not examined	4.0	Moderate -
	Inadequate examination	15.9	high
	Adequate examination	80.1	
	Information	75.5	
Height	Not examined	0.0	High
	Inadequate examination	0.0	
	Adequate examination	100.0	
	Information	100.0	

Fundal height	Not examined	0.5	Low-moderate
	Inadequate examination	79.8	
	Adequate examination	20.2	
	Information	84.6	
Iron Tablets	Not informed	85.6	Low
	Information provided	14.4	
Hemorrhage	Not asked	93.0	Low
	Information provided	7.0	
UTI	Not asked	88.6	Low
	Information provided	11.4	

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REFERENCES

1. Fathalla MF. Women's health: An overview. *International Journal of Gynaecology & Obstetrics*. 1994;46:105-118.

2. Women's Health and Development Programme: July 1991-June 1992. Dhaka: BRAC,1992:4-5.

3. Fortney JA. Antenatal risk screening and scoring: a new look. *International Journal of Gynaecology & Obstetrics*. 1995;2(50 suppl.):S53-S58.

4. Royston E, Armstrong S. editors, The role of the health services in preventing maternal deaths. In: Preventing maternal deaths. Geneva: WHO, 1989:153-183.

5. Jain A. Introduction. In: Jain A, ed. Managing quality of care in population programme. Connecticut: Kumarian Press, 1992:1-9.

6. Donabedian A. The quality of medical care. *Science*. 1978;200: 856-864.

7. Sundari TK. The untold story: How the health care in developing countries contribute to maternal mortality. *International Journal of Health Services*. 1992;22(3):513-528.

8. Afsana K, Mahmud SN, Karim F, Islam N, Ali A. Mothers' perceptions about maternal health care and their utilization of health services in women's health and development programme. BRAC Report. Health Studies, 1994 (not paginated).

9. Afsana K, Karim F, Mahmud SN, Ali A. Antenatal care service coverage through village based centres: A close observation. Rural study series. BRAC, 1995:48-55.

10. Ahmed AA, Islam N, Chowdhury AMR, Islam W, Chowdhury MR. Effectiveness of the TBA training programme-case studies from BRAC, Health Studies Vol IV, 1989, 42-63.

11. Islam N, Chowdhury AMR, Sarker M. An evaluation of shasthya shebikas, Health Studies Vol VII, 1991, 71-112.

12. Nasreen HE, Islam N, Karim F, Mahmud SN. An evaluation of knowledge and practices of the trained TBAs, Health Studies Vol VII, 1994, 285-352.

13. Afsana K, Chowdhury AMR, Islam MN, Mahmud SN, Karim F, Islam A. Quality of care in TB Control Programme of BRAC. BRAC Report. Health Studies, 1995 (not paginated).

14. Donabedian A. The quality of care: How can it be assessed. *Journal of the American Medical Association* 1988;260(12):1743-748.

15. Bruce J. Fundamental elements of the quality of care: A simple framework. *Studies in Family Planning* 1990;21(2):61-91.