

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Introduction:

Three-week community based survey was done in Paro and Punakha to assess the knowledge of women on the five danger signs of pregnancy. In order to understand the outcome of the community based education Program in Paro, Bhutan. A cross-sectional study has been carried to assess the knowledge of women on the danger signs of pregnancy.

The community-based education program was started in June 2002 and completed in June 2003. It is one of the strategies of the Reproductive Health Program to encourage women to come to hospital for delivery and early treatment of the complications of pregnancy and ultimately reduce maternal mortality.

This study is done to see if the outcome fulfills the objective of the program. The objective of the education program was to increase the knowledge on five danger signs of pregnancy among women of reproductive age group. The education program was also given to increase hospital utilization for delivery and treatment of complications of pregnancy.

The household survey for primary data was done in Paro and Punakha among the women of reproductive age group.

Variations in the level of knowledge between the two groups and its association with socio demographic variables were assessed.

Hospital utilization for delivery and treatment of complications of pregnancy was assessed by longitudinal comparison of secondary data in Paro and Punakha.

Hospital utilization before, during and after the education program was assessed in both areas. Association between hospital utilization for first three periods (18 months) before the education program and second three periods (18 months) after the education program was assessed between Paro and Punakha. Secondary data was collected from the hospital obstetric register in Paro and Punakha.

Demographic features

The sample population had majority of the respondents in the age group of 20-29 years (58% in Paro and 50.7% in Punakha), which is consistent with the national percent distribution by age group. (Bhutan National Health Survey 2001). The secondary data also showed that hospital utilization among women of reproductive age group for delivery and treatment of complications of pregnancy from 2001-2003 was also mainly from this age group. There were also women from 40-49 years group in the survey but fewer women in this age group utilized the hospital for delivery or treatment of complications of pregnancy. This is probably because most of the women would have

completed the family by that age. Less hospital utilization from women less than 20 years is probably because the age of marriage for Bhutanese women is increasing. (UNICEF 2000). Independent T-test for age was not significant (p-value 0.097).

There were more women in the survey with no education than with education; it was more in Punakha (53.7%) than Paro (27.3%). But there are more educated women in Paro than Punakha probably because there are more educational institutions in Paro than Punakha. Another possibility is that during the survey there was snowfall in Paro and people did not go to work in the offices. In Punakha educated women must have gone to office for work. There was increase in hospital utilization by non-educated group over the three-year period in both the areas. This may be because some form of awareness on hospital utilization has succeeded in tapping women from non-educated group. But hospital utilization by women with some form of education has fluctuated over the three-year period. Earlier study in India (Dharmalingam et al 2001) and Thailand (Raghupathy 1996) has found that educated women use the hospital more than non educated women is because educated women tend to have more decision making power than non-educated and also because educated women work and are financially better to pay for the hospital expenses. The finding in this study that non-educated women utilize the hospital more is a supportive evidence of finding by UNICEF that women have equal decision-making power in Bhutan. (UNICEF 2002). This is also evidence that free health care in Bhutan is benefiting all the categories of people. Among the educated group utilization is more in women with higher secondary education, this supports the similar findings in Thailand (Raghupathy 1996) that

educational difference for hospital utilization by pregnant women start emerging only after secondary education.

Decrease in hospital utilization over the three-year period by women with Primary and secondary education level may be because women started pursuing higher education instead of getting married early. It maybe also because educated women chose not to get pregnant or did not get pregnant by their increased awareness on family planning.

In the survey the occupation of women varied from house wife to business to government servant, this supports the earlier finding by UNICEF (UNICEF 2002) that women in Bhutan are actively involved in all spheres of life including business, home making and government service. There were none with farming as the occupation. This is possibly because some of the women who work in the fields also work in the house and may have given their occupation as housewife. Another possibility may be supported by earlier finding by UNICEF that men are physically stronger than women and prefer to work in the fields, where as women either manage the homes or look for other means of livelihood, which needs less physical strength. (UNICEF, 2002). In hospital utilization in both the districts there were more in the house wife group in all the three year period, is not consistent with the finding of Dharmalingam et al (2001) in India that house wife use the health service less because they are financially poor and this also effects their decision making power. The present study supports the advantage of free health care in providing maternal health services to all categories of women, since there are no financial barriers. Also, unlike in India decision making power among the Bhutanese population is equal between men and women.

There were more women in the survey with 1-2 children than with fewer or more children. This is possible because the government policy on family planning is to voluntarily restrict family size to two children and it also indirectly supports that family planning program has been effective in both the areas. In the hospital utilization more women in both the areas over the three-year period also had 1-2 children. The study in other countries have found that women with first pregnancy use the hospital more because a woman is more cautious about her first pregnancy. (Dharmalingam et al 2001, Raghupathy 1996, and Celik and Hotchkiss 2000) This does not seem to be the case in Paro or Punakha. This appears consistent with earlier finding that women in Bhutan prefer to deliver their first child at home because they felt safer at home, because of tradition, or embarrassed to expose in front of a health worker. (UNICEF, 2002). But as there is increase in number of children the utilization decreases in both the area, it supports the finding in other countries (Dharmalingam et. al. 2001, Raghupathy 1996, Celik and Hotchkiss, 2000) that as parity of women increases they feel that their experience in delivering babies does not require any modern health service intervention. However in this survey there is marginal increase in hospital utilization by women having > 3 children in Paro but more increase in Punakha. There may be other factors, which could have brought about this change. The explanation for the increase is beyond the scope of this study. The difference in distribution of women according to parity was not statistically significant (p-value 0.091).

Marital status of women in the survey: The percentage of married women in the sample (80.6% in Paro and 84.5% in Punakha) was more than the national percentage of 65.7%. (Health survey 2000), this is possible due to sampling bias. The percentage of

single women in the survey was 16% in Paro and 13.5% in Punakha. This is also well below the national percentage of 21.6 %. (Health survey 2000). This could be another sampling bias or may be because unmarried women are young and involved in training in the institutes in other places. However the percentage of divorced women in Paro was equal to the national percentage of 2.7%. (Bhutan Health Survey 2000). Difference in the marital status of women between Paro and Punakha was not statistically significant. (p-value 0.188).

The majority of respondents did not have their own transportation, (78.8% in Paro and 87.8% in Punakha) most of them walked to hospital. (57.8% in Paro and 57.1% in Punakha). But it was an interesting finding that few people used the ambulance for going to hospital. (1.6% in Paro and 2.7% in Punakha) This could be because of lack of telecommunication facilities for calling the ambulance. Availability of transportation was associated with place and was statistically significant (p-value 0.026).

Association of dependent variables with area.

The association between independent variables and place showed that there was association between age and place. This was statistically significant (p-value .021). Education was also associated and was statistically highly significant (p-value <.001).

Occupation was not associated with place and was not statistically significant. (p-value 0.197).

Number of the children was also associated with area and was statistically significant (p-value 0.027). Transportation was associated with area and was statistically significant (p-value 0.026).

Knowledge on danger signs of Pregnancy

Bleeding was the common danger sign cited by women both in Paro (55%) and Punakha (7.4%). This may be because bleeding is easy to understand, also the commonest danger sign treated in the hospital in both the areas. It is interesting to note that women in the survey considered bleeding as danger sign in contradiction to earlier finding in Nigeria (Okolocha et al, 1998) where women perceived bleeding in Pregnancy as cleansing of the body. 10% of the respondents in Paro knew fits as danger sign but none in Punakha. This also provides evidence that the education program increased the knowledge of women, because fits is a rare danger sign, which occurs only in complications of hypertension of pregnancy. And it was one sign that was used in the education program.

Far more women in Paro knew at least one or more danger sign (63.3%) compared to Punakha where only 12.7% of women knew one or more danger sign. This strongly suggests that the program had an impact on the knowledge level of women in Paro. In Punakha all of those who knew danger sign had heard them from relatives and friends. This is true to what Sabina Faiz (2001) found in her study in Bangladesh, that there was diffusion of knowledge among women about adolescent reproductive health when they chatted among themselves. (Rashid, 2001) Relatives and friends from whom the women heard the danger sign must have learnt due to their past experience. Because

according to Dharmalingam (Dharmalingam et al,2001), a woman also learn about danger sign from her past experience.

More women in Paro knew two or more signs (41.9%) than one sign only (21.4%), this is also indication of the effect of the education program.

Among the other signs cited by the women were also associated with dangers in pregnancy but not the danger signs used in the education Program. Among them big baby could be correlated with prolonged labor which can be caused by big baby. Giddiness may be a sign of high blood pressure in addition to severe headache with blurring of vision as taught in the program. Swelling, twins and baby not moving are definite danger signs of pregnancy, but not included in the education program. These may be the common danger signs as perceived by the women. This may be a consequence of lack of pre-testing of messages before implementation of the education program. Because according to Thomas Valente (Valente 2002) health education messages should be pre-tested so that it is compatible with the knowledge of the recipient. Women both in Paro and Punakha felt that vomiting is one danger sign of pregnancy; this could be possible because vomiting occurs in every pregnancy and is early sign of pregnancy.

Program attendance: The Program was conducted in Paro and only 62.4% of the participant attended the program. Those who did not attend the program (38%), the main reasons given were did not know (16%) or had no time to participate (22%). This is possible because program implementers may not have informed the people properly

about the venue and timing of the program. The education program must have been conducted at the time when people were busy elsewhere. Venue and timing of the education program are very important to have enough participants that contribute to the success of the program. (Valente, 2002).

Among those who had attended the education program more women had high knowledge (52.7%) than low knowledge (47.3%). Among those who had not attended the education program more women had low knowledge (76.8%) than high knowledge (23.3%). This shows that women who had attended the education program had better knowledge compared to those who had not attended. This difference was highly statistically significant. ($p < 0.001$). This is further evidence that education program did have a positive impact on the level of knowledge of women.

Among those who said the wrong answer or did not know the answer, 40% of them had attended the education program. And the wrong answers given by them were definitely the danger signs of pregnancy. This is another possible indication that the message used in the education program was not pre-tested.

Among those who knew at least one danger sign 62% had heard from the education program. This shows that education program had been successful in increasing the knowledge of women on danger signs. 12.7% who had heard from friends and relatives may be due to diffusion of knowledge through one another. (Rashid 2001). 9.3% had heard from hospital; as part of the education program nursing staff in the hospital were

supposed to deliver the same message when women came to hospital. Thus, it appears that this aspect of the program was also successful, at least to some degree.

In Punakha only 6.7% of women had high knowledge since they did not have the education program. These observations suggest that in Paro there was some dissemination of education program content from those who attended to those who did not.

The main objective of this study was to ascertain whether the education program has been successful in increasing the knowledge of women on dangers signs of pregnancy and also to see if there has been increase in hospital utilization during and after the program.

Comparison on the level of knowledge was done between Paro (which got the intervention) and Punakha (which did not get the intervention). It was found that more women in Paro had high knowledge (42%) compared to Punakha (6.7%). This was highly statistically significant ($p < .001$).

The above findings strongly suggest that there was a positive effect of the education program on the level of the knowledge of women. However it is possible that there may be factors, other than the education program that may have contributed to the success of the program. The factors that may be significant on the level of knowledge are age, occupation; Parity, and education level. (Becker, 1974 and Glanz et al, 1997). In this

study association was assessed between age, occupation, parity, and education level and transportation with the knowledge level of the women both in Punakha and Paro.

In the combined sample of Paro and Punakha it was found that education was associated with level of knowledge, and it was statistically significant (p-value 0.006). Occupation was also associated with level of knowledge and was statistically significant (p-value 0.036). Transportation was also associated with level of knowledge and was statistically significant. (p-value .003). Age was not associated with level of knowledge and was not statistically significant. (p-value 0.264). Having number of children was also not associated with level of knowledge and was statistically significant. (p-value 0.512). There was statistically significant difference in the level of education and transportation between the surveyed population of Paro and Punakha. And there was also statistically significant association between education and transportation with the level of knowledge. These two factors i.e education and transportation may have confounded the finding of high level of knowledge in surveyed population of Paro.

The analysis of secondary data showed trend increase in hospital utilization before and after the program, both in Paro and Punakha. In Paro the hospital utilization for first three period (18 months before) was 24.2% and second three periods (18 months after) was 27.2%. The difference was not statistically significant. (p=0.1718). The hospital utilization for delivery in Punakha for the first three period (18 months before the program) was 20.7% and for the second three period (18 months after the program) was 23.1%. The difference was not statistically significant. (p-value 0.3095) The

hospital utilization in Paro for treatment of complications of pregnancy for the first three period (18 months before) was 8.2% and for the second three period (18 months after) was 11.6%. The difference was statistically significant (p value=0.0218). In Punakha the hospital utilization for treatment of complications of pregnancy for the first three periods (18 months before) was 9.4% and for the second period (18 months after) was 7.8%. The difference was not statistically significant. (P value= 0.3013). The net intervention effect on hospital utilization for delivery is 1% and hospital utilization for treatment of complications of pregnancies is 24%.

In Paro the hospital utilization for delivery and treatment of complications combined for the first three periods (18 months before) was 32.5% and for the second three periods (18 months after) was 38.8%. The difference was statistically significant (p-value = .0073).

In Punakha hospital utilization for delivery and treatment of complications of pregnancy for the first three period (18 months before) was 30.2% and for the second three period (18 months after) 30.9%. The difference was not statistically significant. (p-value= 0.7749). Net increase in hospital utilization for delivery and complications treatment was 16%.

In Paro significant increase in hospital utilization for complication treatment compared to utilization for delivery is probably because of many reasons. The first reason may be because of the way message is delivered to the recipient. Apart from informing the participant about the danger signs of pregnancy, they were also to encourage women to

come to hospital for delivery, but it is possible that more stress was given on recognizing the danger signs. The second possible reason may be that women developed complications of pregnancy immediately after attending the education program. Other reason may be because the women came to hospital for treatment of complications of pregnancy but preferred to deliver at home due to tradition, culture and comfort as mentioned earlier.

The quality of data also depends on the ability of the participants to recall the message. Since the knowledge assessment was done after a period of six months it is possible that the participants may have forgotten some of the signs or more people may have learnt from friends and relatives due to the process of diffusion. This could be a confounding factor in the real assessment of the program impact.

It is also possible that the hospital utilization may increase slowly because it is believed that it takes time for a person to change into practice.



Conclusion

The results of this study show that the outcome of the education program has been largely successful in fulfilling its objectives. The result showed that the education program did have an effect on the knowledge level of women. The findings that the level of knowledge is more in Paro than Punakha, and that the difference is statistically significant support this. Further supporting evidence on the effect of the program is that in Paro the level of knowledge among those who had attended the program is more than among those who had not attended the program. But since the baseline level of knowledge is not known it is possible that the base line level of knowledge of women of Paro may have been higher than Punakha before the start of the education Program. Another possibility is that some factors like education level and transportation are different in Paro and Punkha and the difference is statistically significant and these factors also have statistically significant association with level of knowledge. These factors could have confounded the level of knowledge.

When we look at the hospital utilization, there is no statistically significant difference in hospital utilization for delivery in Paro between before and after the education Program. And the net intervention effect on hospital utilization for delivery is only 1%. However there is statistically significant difference in hospital utilization in Paro for treatment of complications of pregnancy between before and after the program. There is no statistically significant difference in Punakha. The net intervention effect is 24%. This shows that the education program has been successful in increasing the hospital utilization for treatment of complications of pregnancy. This is possibly because the

education program had more information on the danger signs of pregnancy than normal delivery.

Recommendations

1. The survey result showed that many women in Paro did not attend the education program because they did not know about the program or they did not get time to attend. In future the timing and selection of the venue for the education program should be done appropriately for the success of the program.
2. In developing future education programs, the education program should include other danger signs of pregnancy because some women identified signs that were not taught in the education program but are definitely danger signs of pregnancy.
3. Increase in Hospital utilization for treatment of complication of pregnancy is more significant than that for delivery; it is recommended that alternative method for increasing hospital utilization for delivery should be employed.
4. Studies in other countries have shown that Culture and traditional practices. (Brown SS, 1998), quality of service provided in the health center (Griffith P, Stephenson R 2001) and the attitude of the hospital personnel are important determinant of hospital utilization. It is recommended that these factors should be studied and improvement made accordingly wherever feasible so that hospital utilization will increase.
5. Input and process evaluation of the program should be done to assess why the education program was not entirely successful, and to provide guidance for related programs that might be conducted in the future.

6. The baseline knowledge level of the women was not assessed before the program; in future it is recommended that baseline knowledge should be assessed so that it can be compared with the knowledge level after the program. This would give more accurate information about the success of the program.
7. Though decision-making power of Bhutanese women is thought to be equal to men, realistically if she needs to go to hospital she needs the support of her husband and other family members and the community members. Therefore it is recommended that in future, the target population for the education program should include other family and community members. This may increase hospital utilization even more.
8. An Earlier survey on Information, education, communication for health in Bhutan (IECH survey 2000) has shown that majority of the people heard about health messages from radio. So it may be appropriate in the future to use radio broadcast as the media for increasing knowledge on danger signs of pregnancy.
9. The Same survey (IECH survey 2000) has also found that recall of health message was mainly from posters put up in public places, so putting of posters in Public places may also be effective in increasing the knowledge of women on danger signs of pregnancy.
10. If there is plan to introduce similar education program throughout Bhutan for increasing hospital utilization for delivery and complications treatment then statistical data on maternal mortality rate, stillbirth, Infant mortality rate and Neonatal deaths has to be evaluated as outcomes.
11. The secondary data collected from the hospital had many missing data, occupation and education level were not properly specified. There fore it is recommended that the recording system be improved. Training and refresher

courses for nursing staff may be one important method of improving the recording and reporting system.

Limitations of the study:

1. Since the design for primary data is cross sectional study, the result gives level of knowledge at a particular time and not over time.
2. Complete evaluation of a program needs to evaluate the input and process of the program as well. Due to limitations of time input and process of the program is not evaluated. Evaluation of input and process of the program may have given us some information that may be responsible for result of the program.
3. In Paro since there was snowfall during the survey there is representation from all level of women since they stayed at home during the survey. But in Punakha most of the educated women were out to work in offices and other places at the time of survey. This could have led to under representation of government servant in the survey.
4. The baseline data was not available for antenatal care and maternal mortality rate for Paro and Punakha.
5. Time period (18 months before and 18 months after) is too short to judge if increase utilization of hospital for delivery and treatment of complications of pregnancy has been successful in reducing, maternal mortality, infant mortality, stillbirth, and neonatal death rates.
6. The participant of the education program were asked to attend the education program voluntarily, this could have biased the result. It is possible that women who had attended the program may not have been included in the survey. There was no record of the women who participated in the education program.