

A Study of Utilization Rates of Traditional Birth Attendants in Phu Wiang District, Khon Kaen Province in Northeast Thailand

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การศึกษาอัตราการใช้บริการจากผดุงครรภ์โบราณในอำเภอภูเวียง จังหวัดขอนแก่น

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การศึกษาเพื่อประเมินการใช้ประโยชน์จากผดุงครรภ์โบราณในอำเภอภูเวียง จังหวัดขอนแก่น ในภาคตะวันออกเฉียงเหนือของประเทศไทยระหว่างเดือนกุมภาพันธ์ถึงมีนาคม พ.ศ.2535 เป็นการศึกษาแบบภาคตัดขวาง โดยการสุ่มแบบกลุ่มร่วมกับการใช้สัดส่วนของพื้นที่

จากข้อมูลที่เป็นทางการการใช้ประโยชน์จากผดุงครรภ์โบราณนั้นลดลง โดยเฉพาะบทบาทหน้าที่การทำคลอดและการแนะนำเกี่ยวกับการวางแผนครอบครัว การศึกษาครั้งนี้จึงมีวัตถุประสงค์ที่ศึกษาถึงจำนวนและบทบาทหน้าที่ของผดุงครรภ์โบราณในปัจจุบัน

การศึกษาครั้งนี้ใช้แบบสอบถามและการสัมภาษณ์อย่างละเอียดซึ่งผลการศึกษาพบว่า 31% ของมารดาเด็กที่อายุต่ำกว่า 1 ปี ในขณะนั้นทำการคลอดโดยผดุงครรภ์โบราณ ซึ่งในรายละเอียดผดุงครรภ์โบราณยังได้แนะนำดูแลหญิงมีครรภ์ก่อนคลอดถึง 11.4% ของมารดาและหญิงมีครรภ์ (n = 248) และ 35% ของมารดา (n = 183) ที่ผดุงครรภ์โบราณได้ไปดูแลเยี่ยมเยียนหลังคลอดด้วย

โดยสรุปสัดส่วนของมารดาทั้งหมดในหมู่บ้านที่ศึกษาที่ซึ่งได้รับการบริการและดูแลจากผดุงครรภ์โบราณใน 1 ปีย้อนหลังคือ ระยะเวลา ก่อน ระหว่าง และหลังคลอดมีประมาณ 49%

ในความเป็นจริงมี 1 ใน 3 ของการคลอดทั้งหมดในการศึกษาที่พบว่า ทำคลอดโดยผดุงครรภ์โบราณ แสดงให้เห็นว่าผดุงครรภ์โบราณยังมีประโยชน์และยังเป็นที่ยอมรับ เชื่อถือของประชาชนโดยเฉพาะในพื้นที่ชนบท ถึงแม้ว่าจะมีการจัดการบริการทางสาธารณสุขด้วยแล้ว

ABSTRACT

An assessment of the use of traditional birth attendants (TBAs) was undertaken in Phu Wiang District, Khon Kaen Province in Northeast Thailand from February to March 1992. The study was cross-sectional using a cluster random sampling scheme with probability proportionate to size.

According to official accounts, the utilization of TBA services by mothers has declined, particularly in their role as birth attendants and advisers on family planning. This study set out to substantiate this as well as find out what their new role is now.

By questionnaire and in-depth interview it was ascertained that 31% of mothers with children under one had been delivered by TBAs. We found that overall, the utilization of TBAs by women before, during and after delivery were the following :

- for antenatal care, 11.4% of mothers and pregnant women (n = 248) received either services or advice from TBAs.
- for postpartum care, 35% of mothers (n = 183) were visited by TBAs.

Overall, the proportion of all mothers in the sampled villages who received any advice or services from TBAs at any time last year, i.e. before, during, or after delivery was 49%.

The fact that one-third of all deliveries were attended by TBAs in this study provides evidence that the TBA's influence and acceptability continues to exist amongst people in remote rural areas even when formal health services are made available.

INTRODUCTION

Traditional birth attendants (TBAs) are found in most societies and are often part of the local community, culture and traditions.

In most societies pregnancy and childbirth have cultural and spiritual connotations which can strongly influence the behavior of mothers. Thus, TBAs are in a position to hold a good deal of power and authority in the community particularly because of their knowledge of children and ritual.

World Health Organization (WHO) coined this term TBA which is used to describe ... is a person (usually a woman) who assists the mother at children and who initially acquired her skills delivering babies by herself or by working with other TBAs (WHO, 1979). The TBA is always associated with the birthing process and only sometimes does her influence extend to pre and postnatal periods.

In developing countries, about 60-80% of all births are still attended by TBAs and they are often also engaged in a broad range of other health related activities (WHO, 1979).

Thirty years ago the TBA had an important role to play both in health practices and traditional habits of rural Thailand. However, according to official accounts, the utilization of TBA services by mothers has declined, particularly in their role as birth attendants. The reasons may include easy access to modern health facilities and the introduction of new health workers in community and rural health programs.

In 1977, Thailand began mother and child and family planning training for TBAs. And in 1985 a revised training course, incorporating a 'new role' for TBAs was run by the Government and 50% of the previously trained TBAs attended this refresher course. The new training manual for TBAs aimed at guiding them to give safer care to mothers and babies. It covered subjects such as antenatal care (ANC) and postpartum care (PPC), basic knowledge of the reproductive system of males and females, risk factors of pregnancy, the referral system, normal delivery, knowledge of delivery instruments and their cleaning.

METHODOLOGY

1. Sampling :-

The cross-sectional survey, was carried out from February through March 1992 in Phu-Wiang District which is located in the northwest of Khon Kaen, a province of northeast Thailand. The district, whose population in 1991 was 91,166 is divided administratively into 16 subdistricts and 156 villages. The sampling method used was a "probability proportionate to size one stage cluster random sampling. A village was taken as a cluster and all the study units in the sampled clusters were to be investigated. Sampled cluster were selected from the complete list of 156 villages. This selection was done in such a way that large villages have a higher probability of being selected than do small villages (Steel and Torrie, 1981; Rumeau-Rouquette et al, 1988).

The target group comprised pregnant women and mothers with children under one year resident in the district. Excluded from the survey were pregnant women or mothers who had out-migrated.

The sampling size was calculated using the formula for simple random sampling with correction for the cluster design effect (Daniel, 1983). Also interviewed were, TBAs and sub-district health personnel involved in providing care to mothers and pregnant women in the sampled villages during the past year period prior to the survey.

2. Questionnaire Development

The questionnaires were initially based on some key indicators and were improved by two sets of focus group discussions and subsequently tested in the field. They were then revised and retested before finally being used.

3. Field Study

In the village, the search for mothers and pregnant women was done by door-knocking, using a local map, village health

volunteer, village headman. All households in each cluster were visited in order to ascertain that all study units were covered. An eligible mother was determined by the age of her children. The search for TBAs was done by asking health personnel, village health volunteer and mothers in the village.

The interview of subdistrict health personnel was done at the subdistrict health centre where the health records were also collected. The answers to the questionnaire were cross-checked before leaving the field as well as the name/or number of women and TBAs recorded from different sources.

4. Data Entry and Analysis

Response to the survey questionnaires were coding during the data collection and the in-depth interview written up at the end. Analysis was carried out using Epi Info 5.0 software package.

RESULTS

A total of 183 mothers and 65 pregnant women, resident in the 16 sampled villages of Phu-Wiang District as well as 29 TBAs and 15 subdistrict health personnel were interviewed between the 19th of February and the 24th of March 1992.

1. Utilization Rate of TBAs

Out of an overall 248 mothers and pregnant women interviewed, 11.4% received advice/services from TBAs during their past/present pregnancy. For mothers only (n=183), 14.4%, 30.8% and 34.6% received advice/services from TBAs before, during and after delivery respectively. Overall, 49.2% of mothers received any of these services/advice from TBAs last year (Figure 1).

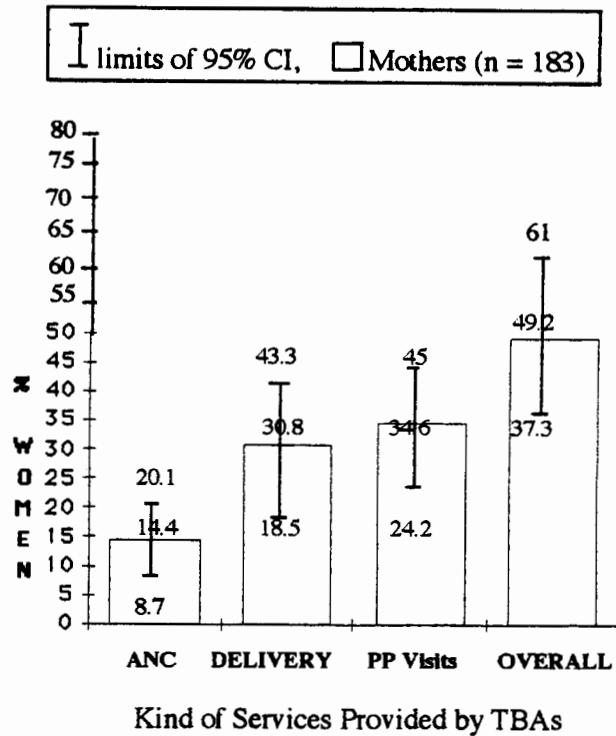


Figure 1 Utilization Rate of TBAs With Regard to Different Services Provided, March 1992

2. Antenatal Care (ANC)

For mothers and pregnant women overall, 77% received ANC at least 4 times at a health facility, 3.2% received advice from TBAs, 10.1% from village health volunteer/communicator, 12.7% from health personnel and 19% from relatives/neighbours. The other 32% said they did not receive advice from anybody and had their ANC on their own initiative.

Amongst mothers and pregnant women, 88% had 2 doses of tetanus toxoid (TT) during their past/present pregnancy, 2.4% claimed they received advice from TBAs, 2.3% from village health volunteer/communicator, 57.6% from health personnel and 2.3% from relatives/neighbours. Mothers and pregnant women reported that TBAs gave advice on personal hygiene and on good foods (i.e. no taboos but variety of foods) during their past/present pregnancy to 1.3% and 4.3% of them respectively (Figure 2).

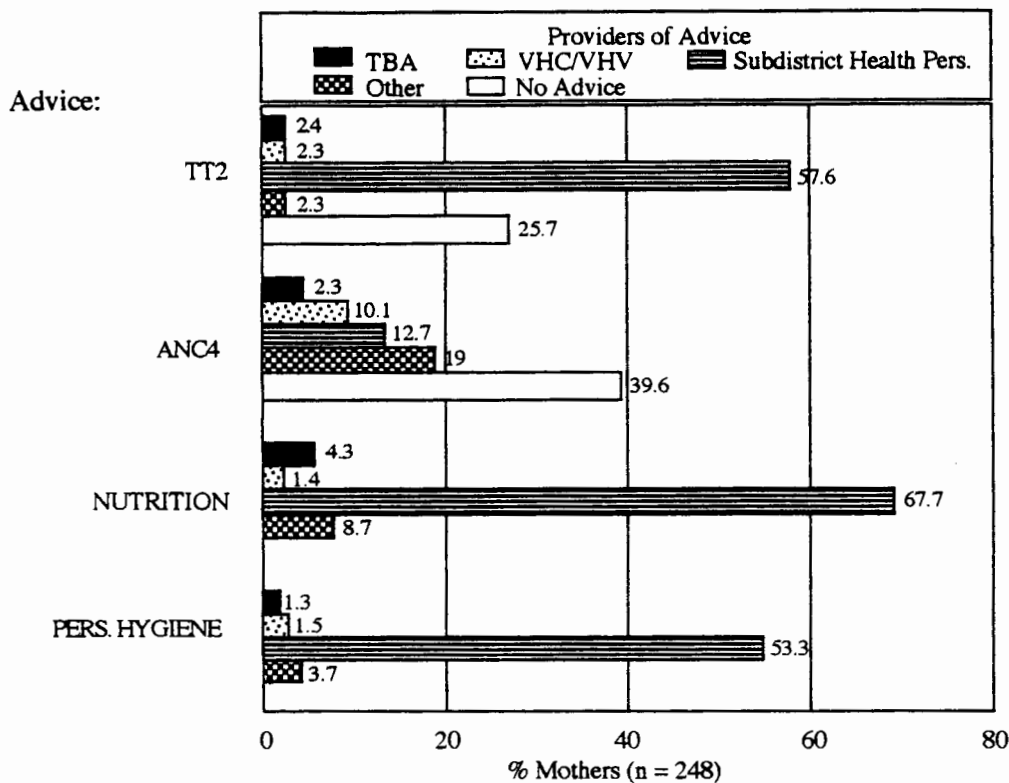


Figure 2. Advice Provided By TBAs and Others to Mothers and Pregnant Women During their Past/present Pregnancy

3. Delivery

According to mothers' responses, 41% of them were delivered at home during the last year while 5.6% others were delivered at a subdistrict health centre, 38.3% delivered at the district hospital and 15.0% at other hospitals (Table 1). However, according to subdistrict health centre records 30.5% of women had their babies at home, 4.6% delivered at

subdistrict health centre, 52.0% at the district hospital and 12.9% at other hospitals.

Out of all mothers interviewed, 30.8% said they were delivered by TBAs, 62.2% by health personnel, and 7% by relatives or neighbours (Table 1). However, from subdistrict health centre records, 21.8% only of mothers in the sampled villages were delivered by TBAs during last year whereas the remaining 78.2% were delivered by health personnel.

Table 1. Place of Delivery and Category of Birth Attendants as Reported by Mothers (n=183), March 1992 (in brackets: 95% confidence interval).

Birth Attendant	Home %	Subdistrict health Centre %	District Hospital %	Other Hospital %	TOTAL %
Health personnel	3.3	5.6 (0.2-11.0)	38.3 (25.7-50.0)	15.0 (7.7-22.3)	62.2
TBAs	30.8 (18.5-43.1)				30.8
Others	7.0 (3.8-10.2)				7.0
TOTAL	41.1 (29.7-52.5)	58.9 (47.5 - 70.3) (Overall - Subdistrict health Centre/Hospital)			100.0

4. Postpartum Visits

According to mothers, 35% of them were visited by TBAs after delivery, and 55% others received postpartum care at least 3 times at home by subdistrict health centre (SHC).

The kinds of services given by TBAs

during these visits were : advice on personal hygiene (9.6% of mothers), advice on good nutrition (6.3%), advice to have baby vaccinated (2.0%), advice about lying over fire (12.2%), checking of mother (5.5%) and checking of baby's cord (15.9%) (Figure 4).

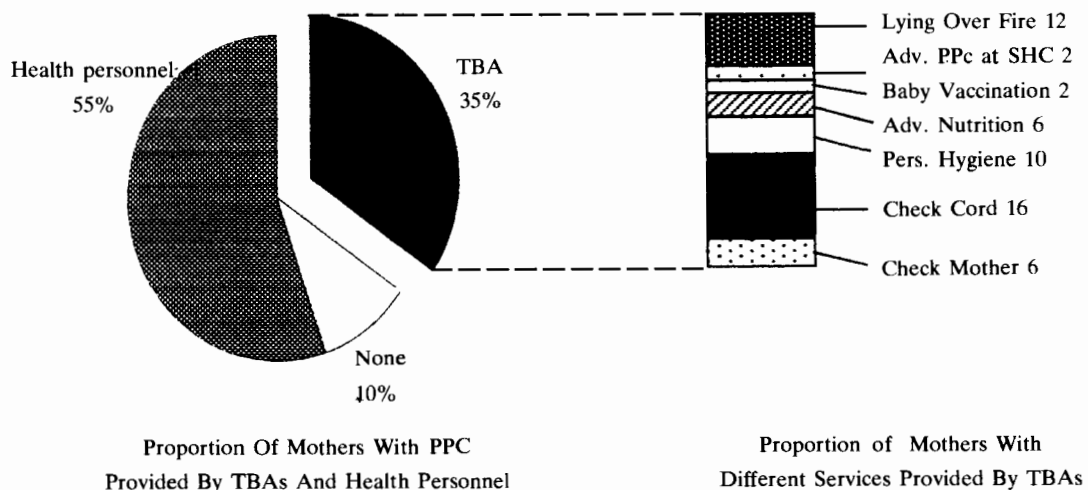


Figure 3. Pattern of Use of Postpartum Care (PPC) By Mothers, March 1992

5. Characteristics of Users and Non-Users of TBA Services for Delivery

The mean age of users and non-users of TBA services for delivery was both 25 years. Seventy-seven percent of the former were unregistered married compared with 75% of the latter. Their number of years of schooling was on average the same (5 years). However, 6% of non-users have secondary school education verses 1.5% of users. Ninety-four per cent of users were farmers compared with 83% of non-users. Their annual household income was on average the same (20,000 Baht). There was no significant difference between them regarding the distance from their home to nearest health facility.

The proportion of women in their first pregnancy who used TBA services (23.1%) was significantly lower than those of non-users (47.4%) (difference significant, $p=0.33$). Amongst current users of TBA services for delivery, 98.1% had a past home delivery experience. This proportion was only 32.4% for current non-users (difference significant, $p<0.00001$).

6. Reasons for Using TBA Services

Forty-three out of 73 mothers (59%) who had a home delivery had planned to deliver at home. The 2 main reasons were : warm/comfortable (49%) and previous good experience with TBA services (30%).

Thirty out of 73 mothers (41%) who had a home delivery did not plan to do so. Their main reason was because of "emergency" e.g. early labour, night birth, no health personnel available, too far from health facility.

Of mothers and pregnant women, 78.2% said that TBAs were essential for them especially in emergency and also because TBAs made them feel warm and comfortable.

7. Assessment of Trained TBAs in their New Role and Compared with Untrained TBAs.

7.1 Comparison of trained and untrained TBA Characteristics

The mean age was 55 years for trained and 64 years for untrained TBAs (difference significant, $p=0.018$). The average number of years of schooling was similar for trained (3.5 years) and untrained (2.7 years) TBAs. Seventy-three percent of trained TBAs were currently married compared with only 57% of the untrained TBAs trained and untrained TBAs had on average 5 and 7 live children respectively (difference significant, $p=0.018$). Ninety-three percent of trained TBAs were farmers compared with only 64% of untrained TBAs (non-significant, $p=0.080$). The average number of years of practice was 20 years for trained and 27 for untrained TBAs. Their annual household income was estimated at 16,400 bath for the former and 16,900 bath for the latter. Out of 15 trained TBAs interviewed 13% were "Model Mothers" or on the village committee and 27% were either village health volunteers or village health communicators. Only 1 out of 14 untrained TBAs was also a village health communicator.

8. Assessment by TBA Responses

8.1 TBA Activities since mid-April 1991

The kinds of advice or services provided by trained and untrained TBAs since mid-April 1991 are listed in Table 2.

Apart from these services only 3 trained TBAs reported the pregnant women they contacted to the subdistrict health centre and 5 reported the deliveries they attended. One still-birth was articulated by an untrained TBA.

Differences were significant between trained and untrained TBAs regarding the instrument used for cutting the umbilical cord ($p=0.00007$), the boiling of the instrument ($p=0.001$), the substance put on the cord ($p=0.003$) and the dietary restriction of vegetables during the postpartum period ($p=0.021$).

Table 2. Kinds of Services/Advice provided by Trained and Untrained TBAs.

Kinds of Services/Advice Provided by TBAs	Trained TBAs (n=15) Frequency (%)	Untrained TBAs (n=14) Frequency (%)
Antenatal care (ANC)		
- Antenatal visits	6 (40)	5 (36)
- Advice (adv) on personal hygiene	3	3
- Adv. women to go to subdistrict health centre for ANC 4 times	5	2
- Adv. women to have Tetanus Toxoid 2 doses during pregnancy	4	0
- Adv. on good foods	2	3
- Refer pregnant women	2	2
Delivery		
- Attended birth	12 (80)	12 (86)
- Average deliveries attended per TBA	3	1
- Used surgical scissors for cutting umbilical cord	12	2
- Boiled instrument	10	0
- Put alcohol on cord	11	3
Postpartum care		
- Postpartum visits (PPV)	15 (100)	11 (79)
- Average PPV per TBA	4	1
- Adv. lying over fire	11	8
- Adv. alcohol	0	1
- Adv. personal hygiene	13	10
- Adv. PPC at THC	5	4
- Discouraged all vegetable	1	6
- Recommended good foods	9	3
- Recommended rice & salt	0	3

Moreover, all trained TBAs knew about family planning compared with only 57% of untrained TBAs (difference significant, $p=0.006$). Eighty-seven percent and 43% of trained and untrained TBAs respectively said they gave advice to women on family planning (difference significant, $p=0.021$). Finally, 27% of trained TBAs reported they distributed oral contraceptive pills to women too.

8.2 TBA Attitudes about their New Role

Almost all trained TBAs interviewed (93%) declared satisfaction and willingness regarding their new role. One trained TBA reported : "I feel ashamed to be a trained TBA because I am illiterate and cannot write the report".

8.3 Assessment of TBAs by Subdistrict Health Personnel

Of 15 health personnel interviewed, their mean age was 39.5 years and their average number of years of practice was 17 years.

Almost all of them (93%) were satisfied with TBA practices after training. They regarded TBAs as helpful for them and for the community. Most of them suggested a periodic refresher course and/or a longer training course for TBAs in order to better their work with the community.

DISCUSSION

The fact that one third of all deliveries were attended by TBAs in this study provides evidence that TBA's influence and acceptability continues to exist amongst people in remote rural areas even when formal health services are made available.

1. Utilization of TBA Services

From February 1991 to February 1992, we found that TBAs were involved in 31% of all deliveries in the past year.

There are discrepancies between data for what women say and that reported in sub-district health centre records. For instance, women reported that deliveries by TBAs were 30.8% of the births while subdistrict health centre records indicated that 21.8% of births of our sample were performed by TBAs. Some possible explanation for the difference in proportion observed between the responses women gave and the subdistrict health centre records is seasonal out-migration during the survey period (February - March 1992). In fact, we were told that this work in other provinces is the usual practice during the dry season. Women follow the sugarcane cutting and return to their villages in time to plant their own rice crop.

Conversely, some explanations for the lower rate observed in subdistrict health centre records may be explained by one or more of the following :

- incomplete records; for example, one subdistrict health centre had no records at all for deliveries in 1991.

- under-reporting : the "iceberg phenomenon" may provide some of the explanation.

- inaccurate records which are quite common in many information systems especially in developing countries.

Such defective record systems are well known in many parts of the world (Abramson, 1990). Explanations include TBAs or village headman or registers not reporting births due to a variety of reasons. TBAs, if illiterate, may even be embarrassed to reveal their inability to comply with requested reporting.

1.1 ANC

During the ANC period we found that about 10% of the services were given by TBAs while the bulk was provided by the health personnel. Thus, there is a negligible role for TBAs in non-traditional ANC in rural areas such as our study site, in the northeast region of the country. This negligible role of TBAs in ANC is in line with the Ministry of Public Health's target for 1991. Thailand's sixth five-year plan aims for 70% of women to receive antenatal care by health personnel at least 4 times before giving birth (Ministry of Public Health, 1990).

Our results also showed that a third of the trained TBAs were correctly carrying out a part of their new role as set by the Government. They are giving advice to women to go for ANC at the health personnel (this is also why the figures for TBA services are so much lower than health personnel's). Only two-fifths of trained TBAs reported having contact with women during their pregnancy. Moreover, it was clear that only a few TBAs were advising women to go to health centre for ANC/TT vaccination or advising them on good foods or personal hygiene. These most important aspects of ANC are still neglected by TBAs despite their new roles. However, health personnel at both hospitals and subdistrict health

centres in rural give more health advice in the community than TBAs, including about mother and child family planning. The role of the subdistrict health centre and district hospital for antenatal services cannot be underestimated in rural areas. These services are important, not only for their quantity but for their quality as well.

1.2 Delivery

The proportion of deliveries conducted by TBAs (about 1/3) is high for a country supposedly phasing out traditional birthing. Surprisingly, only 6% of the 183 mothers surveyed liked to deliver at a subdistrict health centre : they far preferred to deliver at home or hospital.

There are many possible reasons for delivery preferences. For example, perhaps the health personnel at subdistrict health centres are young (our survey found the mean age was less than 40) and are often not available at night. Another factor may be financial; subdistrict health centre deliveries cost 200 baht while TBAs cost only 20-100 baht (some women mentioned childcare and transport as extra costs of a subdistrict health centre delivery). Also, a previous good experience with a home delivery may encourage women to return to TBAs for the next birth.

We found, also, that most women in their first pregnancy did not use TBA services for delivery. And women who previously had been delivered by TBAs preferred to use TBA services again. We found that of those who previously delivered at home, 98% are current users of TBA services. This suggests that TBAs are following the guidelines set out in their training manual e.g. the criteria for attending normal delivery include that the parity is two or more.

1.3 Postpartum Period

For postpartum care 1/3 of the women were visited by TBAs and 1/2 by subdistrict health personnel during the one-year period included in our study. This is in line with the Government's sixth five-year plan (1987-1991)

which targets postnatal visits to at least 70% of mothers within 6 weeks of giving birth.

Currently, there is doubt about the quality of postpartum visiting services as the report has shown that some of the (untrained) TBAs helped women in their traditional practice of lying over the fire after birth and also encouraged some of the food taboos which are carried out during this period. The food taboo information indicates that some untrained traditional TBAs might be promoting practices which could be unsafe.

2. Comparison of Trained and Untrained TBAs Characteristics

Untrained TBAs were on average 9 years older than trained TBAs. This gap was probably due to the selection by government of younger age groups for training. Hence, trained TBAs would be more active in their duties than the older untrained TBAs and is the possible explanation for the low rate of activities of the latter group during delivery and the postpartum period. Conversely, TBAs were on average 16 years older than subdistrict health personnel. Because of the subdistrict health personnel's relative youthfulness some mothers saw them as inexperienced and this helps explain the very low use of subdistrict health personnel in the study area for delivery.

Overall TBAs had two to three times more children than subdistrict health personnel. The more children they had the more experienced TBAs were perceived to be by the mothers and this influenced their choices in using TBA services.

TBAs in this area had on average 3 to 10 years more experience than the subdistrict health personnel and this was another reason why mothers preferred TBA services. Forty per cent of trained TBAs had other roles in the village (e.g. village health volunteer/village health communicator) whereas only 7% of untrained TBA had other roles. This explains in part why trained TBAs were more active than untrained ones.

Trained TBAs were three times more busy with delivery than untrained TBAs. This could be due to the prestige that trained TBAs derived from their association with the 'modern' health system. They could become more active in their practice as they have been recognised officially.

Half of the trained TBAs studied declared that they had reported the pregnant women they contacted to the health centre. However, none found and reported all pregnant women in their village to the health centre as they were requesteld to in their new role.

All trained TBAs reported using surgical scissors for cutting the umbilical cord during delivery. Two-third of them claimed that they boiled the scissors before use. This practice by trained TBAs is due undoubtedly to their training program as none of the untrained TBAs boiled the instrument before cutting the cord.

It was surprising to find that one-fifth of untrained TBAs used surgical scissors. This may be explained by the fact that some untrained TBAs assisted trained ones in delivery and later may have borrowed the instrument or purchased their own. Also, this could explain why about two thirds of untrained TBAs reported sterilising the instrument by immersing it in hot water or alcohol. Hence, it seems that modern safe practices of delivery have been transferred from trained to untrained TBAs.

Another area of concern is care of the cord after delivery. Our survey shows that overall 92% of trained TBAs put alcohol or antiseptic on the cord while untrained TBAs (73%) were recorded as putting absolutely nothing on the cord. But what does "nothing" mean? Does it actually mean that before cutting the cord the TBA spreads ashes on or around the area to be cut? If so, applying "nothing" really means something traditional.

The required written delivery of report required was rarely completed by trained TBAs. This is because one-fifth of trained TBAs were unable to write; many others may have been unwilling to report or lived too far from the health centre.

For women who been visited by TBAs, proportionately more had received postpartum care from trained rather than from untrained TBAs.

All trained TBAs knew about family planning and most of them gave advice on the subject. Family planning has been successful in Thailand since 1970. More and more people in the village are accepting/continuing modern family planning methods. In 1981 the contraceptive prevalence as measured by the percentage of currently married women aged 15-41 practising contraception increased from 59% to 72% in 1990 (Ministry of Public Health, 1991). Trained TBAs could be the ones who have contributed most in its promotion among women in their communities.

3. Attitude of Health Personnel regarding TBAs

More than 90% of health personnel were satisfied with the TBA's work and felt they had performed adequately their new duties. Also, the health personnel stated that TBA services were most welcome especially where the health personnel were few in number and the population too large for health personnel to cover alone. They saw TBAs as useful in emergencies and when the health personnel were unavailable.

However, 49% of health personnel interviewed complained TBAs did not have enough education and made suggestions with regard to the need for longer training periods and more refresher courses.

4. Attitude of TBAs Regarding their New Role

In our survey, almost all trained TBAs stated that they were willing to cooperate with organised health services in their other tasks in primary health care. Less than half of the untrained TBAs were willing to cooperate with health services and become trained TBAs. Most of the TBAs believe that TBAs' influence and acceptability by the community in the next

decade will continue. They explained that people still need TBAs to practise especially during emergencies. One TBA stated that people think they can provide better care.

CONCLUSIONS

The utilization rate of TBAs was found to be relatively high in Phu Wiang District. They were responsible for 30% of all deliveries that occurred in the area. Their influence and acceptability still continue even when health facilities were made available and accessible to the population. Women still need TBA services for delivery especially in cases of emergency.

Most of the trained TBAs complied with their new role definition and assumed other activities within the primary health care model promoted by Ministry of Public Health.

Our survey found that in Phu Wiang District the utilization rate of TBAs was not representative of Khon Kaen Province, where it was reported in 1990 that only 5% of all deliveries were attended by TBAs. It is likely that our data is comparable to that of remote areas of the upper northeast of Thailand borderline provinces, such as Laos where more than 30% of reported deliveries were attended by non-medical personnel. It may also be similar to rural areas in developing countries where deliveries by TBAs are still high (Keller and Arias Huerta cited, 1986).

Trained TBAs were found to have accomplished some but not all of their new duties. TBAs performed better in birth assistance to

mothers than they did for promptive and preventive aspects of their duties (e.g. no advice regarding ANC).

Our survey showed that traditional practices are still very prevalent in the northeast; women in childbirth still need and desire TBA services.

REFERENCE

- World Health Organisation. 1979. **Traditional Birth Attendants** WHO Offset Publication No. 44, Geneva, p7.
- Steel, R. and J. Torrie 1981 **Principle and Procedures of Statistics: A Biometrical Approach** International Student Edition, New York.
- Rumeau-Rouquette, C., G. Breart and R. Pardiou. 1988. **Method En Epidemiologic** Medicine-Sciences Flammarion, Paris.
- Daniel, W. 1983 **Biostatistics: A Foundation for Analysis in the Health Sciences** John Wiley & Sons, New York.
- Abramson, J., 1990. **Survey Methods in Community Medicine** Churchill Livingstone, New York.
- Ministry of Public Health, 1990 **Thailand Health Profile** Health Education Division & Health Planning Division, Ministry of Public Health, Bangkok.
- Ministry of Public Health, 1991 **Thailand Health Profile** Health Education Division & Health Planning Division, Ministry of Public Health, Bangkok.
- Keller, A. and Arias Huerta cited, 1986 **The Potential of Traditional Birth Attendant**, edited by Mangay-Maglacas, A. and Simons, J., WHO Offset publication no. 95, Geneva.