Pergamon

0277-9536(95)00362-2

Soc. Sci. Med. Vol. 43, No. 2, pp. 199–207, 1996

0277-9536/96 $15.00 + 0.00

TRADITIONAL BIRTH ATTENDANTS IN MEXICO: ADVANTAGES AND INADEQUACIES OF CARE FOR NORMAL DELIVERIES*

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Abstract—In Mexico, traditional birth attendants (TBAs) are an essential resource for health care, especially in small rural communities where they attend approximately 45% of all deliveries. Both rural and urban women seek care with the TBAs because, amongst other things, they share the same cultural codes. In this study, qualitative and quantitative methods were used to analyze the concepts, resources and process of care during birth in rural areas of the state of Morelos. Results show that the socio-economic characteristics of the TBAs are similar to those of the patients, that they share the same precarious living conditions, and the resources to which they have access for providing care during births. When choosing a TBA as a health care provider, both the economic aspect and the importance of a shared symbolism come into play. We observed advantages in some of the traditional practices which should be incorporated into the medical system, for example protection through the massage of the perineum at the moment of expulsion. Nevertheless, there are inadequacies for which the implementation of training programs is fundamental, before articulate primary care programs using the TBAs can be promoted.

Key words—traditional birth attendant, medical anthropology, hot–cold syndromes, maternal and child care, indigenous medicine.

INTRODUCTION

In Mexico, the incidence of maternal and perinatal morbidity and mortality is still high. The maternal death rate is 60 per 100,000 live births, whereas the neonatal death rate is 26 per 1000 [1]. Most maternal deaths could be avoided with adequate and timely attention during pregnancy, birth and puerperium [2]. In order to find real solutions to local problems, it is necessary to understand the characteristics of care provided during pregnancy and birth by health providers, whether physicians or traditional care-givers.

In Mexico, traditional birth attendants (TBAs) constitute an essential resource for health care. Since pre-Hispanic times, the services they offer in the field of reproductive and perinatal health make them one of the principal care givers, both numerically† and in terms of status in their own communities. According to the National Survey of Fertility and Health in Mexico (ENFES, its Spanish acronym), TBAs attend 44.5% of the births in communities with under 2500 inhabitants, and 23.7% in larger communities of up to 20,000 [3].

In addition to providing prenatal and birthing care, TBAs are also widely consulted for culture bound syndromes [4, 5]. They are also a significant resource for family planning programs, and they provide herbal remedies and child care‡.

Many women who consult TBAs do not have geographical, economic or cultural access to medical services [6]. For these women, TBAs are the only existing resource for perinatal care. Nevertheless, even women who have access to medical care, such as that provided by the Mexican social security system (which does not usually charge for consultation), choose to visit both the TBA and the physician for prenatal care. This can be explained by the cultural identification of the woman with the TBA in terms of the classification of ailments and the use of therapeutic resources such as herbs, massage, religious resources, and the psychosocial support which TBAs provide. Other elements which contrib-

*This study received support from the John D. and Catherine T. MacArthur Foundation.

†In 1984, IMSS-COPLAMAR carried out a survey to register traditional health care givers who worked in the area covered by the rural medical units. The data showed that the number of traditional health care providers was four times greater than the number of doctors (13,067 versus 3025). Of these, 38.8% (5069) were traditional birth attendants.

‡A survey conducted in Morelos (1991) by the National Institute of Public Health (NIPH), showed that 30.6% of TBAs are also masseuses and herbalists; 41.7% provide health care for children; 27.8% provide birth control methods, 13% collaborate directly with the community health center and 44.4% administer injections.

ute to this environment of trust and good communication which is very important during the complex and emotional moment of childbirth are the facts that the TBAs are women, have experienced maternity and live close to the women whom they assist.

It is important to note that the TBA and the patient share cultural codes and mutual understanding; they speak the same language, both literally and figuratively. As Heggenhougen notes, this relationship and the consequent quality of compliance and subsequent outcome can in turn be related to shared culturally determined concepts of health and illness [7]. In this article, we present some data about the motivation women have resorting to TBAs.

It should be noted that, in addition to the many positive aspects, the TBAs may also be associated with difficulties and inadequacies which cannot be ignored. The TBAs are quite limited when it comes to recognizing some risk signs, they do not provide asepsis of material and equipment, they misuse or abuse certain drugs and herbs, they massage (external womb manoeuvre) in order to change the position of the fetus. These practices cast doubt upon the effectiveness of TBA care since they may have negative effects on the pregnant woman and her baby.

The objective of this article is to present results from a study conducted in order to gather information about the concepts, resources and process of care provided by TBAs to low-risk births in a rural area representative of Mexico's central region. The analysis of this information served as the basis from which to design strategies for improving the relationship between institutional services and the traditional health providers. As Paul notes, "Before asking a group of people to assume new health habits, it is wise to ascertain the existing habits, how these are linked to one another, what functions they perform, and what they mean to those who practice them" [8].

In the process of analyzing the complexity of the TBAs' work (they do not follow formal avenues of acquiring knowledge nor relate to normative or institutional practice), we took into account some reflections of chaos and post-structuralist theories [9, 10]. We interpolate the multiple realities where the TBAs construct and carry out their practice. It is worth mentioning that in terms of the resources they use, the population they care for and the training received, there are at least three different types of TBAs.

(1) '*Traditional*' *TBAs* live in the most remote areas inhabited mainly by indigenous people. By and large their knowledge has been handed down orally from generation to generation, the majority are illiterate. They use mainly herbal remedies, manual therapies (massage, rubbing), temazcal baths and some pharmaceutical products. They deal with normal and dystocial deliveries, sterility and children's complaints.

(2) *Trained TBAs* are usually those TBAs who have attended institutional training programmes. Gradually, they have adopted some academic medical concepts and use some pharmaceutical products and surgical instruments. However, it is not uncommon for them to continue to use herbal remedies and perform some manual therapies. In the training courses, emphasis is placed on the detection of risk factors, since TBAs generally attend normal deliveries and some gynecological problems. They also do an important job in family planning.

(3) The *unskilled* '*empirical*' *TBAs* have recently emerged as important health agents in mainly rural areas with migrants moving towards marginal urban areas. They do not have the knowledge of the first ones neither the training of the second ones. Their job is mainly oriented to normal deliveries. They are not prepared and do not have expertise in other spheres of the reproductive health [11].

It should be noted that there is a growing tendency among TBAs towards the use of a plurality of resources, practices and sources of knowledge. Except in very isolated regions, it is rare for a TBA not to use tools that originate both in biomedicine and in traditional medicine, either combining both or in alternation. There is a need therefore to formulate evaluation methods which will represent elements of both traditions, where two worlds come into contact through the interaction of practices. This is a process which has not yet been completed.

The professional work of a TBA is not a linear process but rather a transitional practice, emerging from specific patterns subject to conceptions which are somehow predictable [12], especially in the case of attendants who have been trained. Nevertheless, external and internal influences also play a dynamic and many-sided role, making objective and periodic evaluations necessary [13].

METHODOLOGY

This study was part of a major research-intervention project developed with the aim of improving women's health in a rural central region of Mexico; it included qualitative and quantitative methods to establish baseline diagnoses [14], and to follow up both the performance of the implemented strategies and their gradual effects on the population. It was carried out in four stages. In the first stage, data from the census of TBAs in the state of Morelos was updated [15, 16]. In the second stage, a questionnaire was applied to all the TBAs in communities selected according to specific inclusion criteria within a major region ($n = 35$). Some of these criteria were: principal economic activity related to agriculture, the population of the municipalities between 2500 and 10,000 inhabitants, with a high fertility, maternal mortality and morbidity rates and a low social well-being index. In the third stage, a qualitative study was done with

key informants. In the fourth stage, as part of a major survey of the female population within the same area, questions such as choice of care by physician or TBA were explored. Results were analyzed in an attempt to understand the reasons involved in the process of health-seeking behavior. In this article, we will discuss the last three stages of the study.

The *quantitative instruments* were tested in a pilot study in order to adjust them. Information was gathered by a trained team. Techniques for filling out the questionnaire were standardized.

The *qualitative research techniques* were focus on:

(a) *Discussion groups.* Three sessions were held with anthropologists, TBAs, doctors and nurses, lasting approximately three hours each. The perception of reproductive risk factors was explored. The discussions were taped and later transcribed.

(b) *In-depth interview.* Individual interviews were carried out using a guide with open questions, with four TBAs. This tool gave access to deeper levels of information. The content was structured based on the results from the discussion groups, previous ethnographic studies, and bibliographic material. For the analysis of the interview with key informants, data was entered into a thematic matrix which allowed the configuration of common patterns and differences. Information from the interviews is presented as recorded, preserving language used. The quantitative data is also accompanied by phrases in quotes, which are the recorded explanations of the informants. Words which are emphasized (in bold type) are popular expressions; the use of parentheses indicates observations or clarifications by the researchers.

(c) *Participatory observation.* The team of anthropologists accompanied the four key informants during their daily activities over a two-month period. The information was processed according to the thematic contents of the interview guide.

FINDINGS

Some of the results from both the qualitative studies and from the survey are described. Table 1 shows the socio-economic characteristics of the TBAs and points to how precarious their living conditions are. In the same table, the lack of material infrastructure with which to provide care during labor is shown. In terms of training and experience in the profession, it should be noted that most TBAs learned to provide care from their own personal delivery and motherhood experiences, and they also learned from another woman, and have been practicing for an average of more than twenty years (Table 2).

Care process for a normal birth

Here, the conceptual basis and practices of TBAs during normal birth are explored. The information is classified according to the stages of labor.

Table 1. Characteristics of housing and infrastructure where TBAS live and work

Housing		Physical infrastructure	
Predominant material in	No.	Specific place for	No.
		Attending births (1)	
		Acceptable 7	
		Deficient	5
Roof		Doesn't have	
		Anything	28
		Equipment (2)	
Cement	14	Acceptable	1
		Deficient	12
Asbestos	11	Doesn't have	
		Anything	22
Cardboard or zinc panels	10	Materials (3)	
		Acceptable	17
		Deficient	18
Floor			
Cement	17		
Dirt	18		
Walls			
Adobe	28		
Others	7		
Services			
Electricity	34		
Running water	28		
Drainage or septic tank	6		
Toilet or latrine	20		
Crowded (more than 4 persons in one room)	12		

(1) Bed or mattress for expulsion, bathroom or latrine, stove, special lighting, crib.
(2) Scissors, buckets, clean sheets, scale, blood pressure gauge, stethoscope.
(3) Alcohol, vaginal antiseptic, ophthalmic drops, soap, gauze.
Source: NIPH Department of Woman's Health, 1994.

Table 2. Education and experience of the traditional birth attendant

Learning method	No. of TBAs
By herself	21
Health sector	6
Family	5
With other TBA	3
Attendance at training courses	
Training from health institutions	15
Seniority in the profession	
0–10 years	5
11–20 years	9
21 years or more	21

Source: NIPH Department of Woman's Health, 1994.

(A) Signs: labor begins

The informants mentioned that there are certain signs which they perceive in women who are close to beginning labor: narrowing of the nose; eyes bulging or with dark circles; 'sad', sometimes puffy, face; feeling very sleepy; dryness of the mouth; pain in the waist and headaches. They believe the moon intervenes in setting off labor. Its 'effect' can be to help break the membranes or to initiate uterine contractions. "When there is the effect of the (full) moon and I have patients who are about to give birth, I don't leave my house, because they always come to me to give birth."

Nevertheless, the TBAs believe that 'true' labor begins when some of the following signs are present: expulsion of the mucous barrier, rhythmic contractions, 'opening' of the uterus, broken water membranes. It should be noted that these are the same signs recognized by occidental medicine.

(B) Preparation for delivery

When the TBA has diagnosed that labor has begun, most tell the woman to prepare for it by ingesting substances of a hot nature* to sustain the labor. They often use oxytocin medicine or **zoapatle** (oxytocic plant, widely known by TBAs since pre-Hispanic times. In Nahuatl, **ci-hua** = woman, **phahtli** = remedy, *Montanoa tomentosa*). Of the TBAs interviewed, 36% said they always use it and 42% use it only for excessively long labor.

Evaluation of labor. The interactim during labor varies depending on the knowledge the TBA has of the woman, that is, if she had provided care during her pregnancy or if it was the first time the woman had visited her. It also depends on the background training of the TBA. Most (77.8%) TBAs ask the patients when pain began (intensity and frequency of contractions). The next most important question is about the baby's movements (69.4%). When the last period was, if there had been any bleeding and whether the water had broken are questions most asked by young TBAs (83% of those under 50 years old). It is important to mention that in these communities, a lot of the communication is done with an analogical language.

Exploration. Close to 50% of the TBAs declared that they perform vaginal explorations during labor, of which 60% perform no more than six which is a standard procedure according to the norms laid down by the Ministry of Health. Very few TBAs wear sterile gloves, however, they indicated that they wash their hands and clean them with alcohol. They insert two fingers and with them evaluate the distance between the child's head and the cervix, and also look for the placenta in case it has come in front of the baby (placenta praevia) except, they said, when there has been bleeding because touching the placenta could exacerbate this. None spoke of centimeters of cervix dilation.

I wash my hands and put alcohol on them, I open the woman's legs and clean her part [labia and perineum], I massage her so she becomes soft and I can introduce two fingers so to feel the baby's head and check for the placenta.

All the TBAs feel the abdomen with their hands to assess where the child's head is. Most (89%) use a Pinard's horn "to listen to the beat of the baby's heart"; others said they listen by placing their ear on the stomach, as they have no stethoscope and/or they do not know how to use one.

I listen to the child's heart by putting my ear on the woman's abdomen. With one hand inside and the other on the stomach, I look for the baby's beat. When there is a great deal of effort, the heart beats rapidly and when they are born the babies are tired.

Less frequently the TBAs take the mother's blood pressure (11%) and count contractions (44%).

(C) Expulsion period.

Position. Some TBAs indicated that they prefer to have the woman lying on a bed; others prefer the woman to squat (the 'Mesoamerican' position) or to kneel on the ground (on a woven mat); others to have the woman standing, supported at the waist (this support is provided by the husband or someone accompanying her). Nevertheless, the TBAs mention that they give priority to the woman's preference.

Indication for pushing down. There were discrepancies as to when the woman is asked to push. The majority (86%) said that the woman should push when the child's head has crowned, "they should push making a downward effort". The rest of the informants said that the woman should push when strong pains begin, "so that the fetus comes loose, but

*The concept of 'hot or cold nature' is related to the continuum of the qualities of objects, foods, people, ailments, etc. It is a mythic duality (hot–cold) which has existed since pre-Hispanic times, through which everything which surrounds us can be classified. More than indicating a thermal state, cold–hot reflects a taxonomic order. In relation to birth, ailments due to an excess of cold or heat are perceived as risk factors: it is believed that they interfere with the expulsion of the fetus and/or provoke sterility. Resources employed aim to re-establish the state of thermal equilibrium in the body.

she should push harder when the pains become stronger, when the baby's head has crowned".

Protection of the perineum. The perineum is protected by 28% of the TBAs through massages with their fingers (they use oil as a lubricant) pressing downwards. Only 3% of the TBAs said they practiced episiotomy.

Cutting the umbilical cord. After having suctioned the phlegm from the mouth and nose, and cleaned the eyes and face, most TBAs pinch the cord in two places. Using sterile umbilical cane thread to tie the cord, they then proceed to cut it with a blade, knife or scissors usually after the child has cried.

Expulsion of the placenta: checking out the integrity of the placenta and its membranes. Most (92%) TBAs indicated that they check that the placenta came out whole by handling it on all sides. This allows them to see whether a 'piece' is missing. They say that at the end, a little blood should come out to indicate that it came out whole. Mention was also made of the following diagnostic methods, "First I check the placenta with my hands, and then I put it into a pail with water to clean it, to see if it is whole."

It is custom throughout the region to bury the placenta. If the baby is a boy, it should be buried in the patio of the house; if the baby is a girl, it should be buried near the place where tortillas are made.

There were discrepancies about terms of the amount of bleeding which is considered normal. Some (36%) said that the woman could lose up to a quarter of liter of blood, 31% said up to half a liter, 25% up to a liter and 11% said over a liter. There is widespread belief that the woman's bleeding during and after delivery purges her of the "**impurities**" she accumulated by not menstruating for nine months.

Perception of the normal duration of labor. According to 29% of TBAs, the labor of a primipara normally lasts 13 hours, and 74% of them said the labor of a multiparous women could last between 4 and 8 hours, but no longer than 10 hours.

Perception of labor stages. Most TBAs do not appear to have a clearly differentiated image of the uterus and the cervix. The first of the three stages according to them is conceptualized, not as cervical dilation, but as the "opening" of the matrix, the uterus. The second stage is the expulsion of the baby and expulsion of the placenta. The popular name used to designate the act of giving birth is **to get relief. "To buy"** a baby means that the woman has become a mother, "she bought a little woman", "she bought a male again".

They classify two types of births: **wet birth** and **dry birth**. The first encompasses labor and delivery which is accompanied by amniotic liquid. This was indicated as the most common, least painful and easiest birth to care for. **Dry birth** has two variants: rupture of the membranes before contractions begin; or birth without the presence of liquid. When this happens, 42% of the TBAs indicated that they break the membranes to allow expulsion.

When it is a **dry birth**, the baby cannot get out easily, because there is not enough liquid for it to slip and come out because without water the baby sort of sticks and it is hard for him to come out.

When s/he is in place, if it is a dry birth, the child doesn't slip, she sticks and it is difficult to bring her out and the woman has to endure it.

(D) TBAs perception of their work

In their perception of their work, the TBAs deny any first-hand experience with maternal or perinatal deaths. None admitted to having assisted a delivery during which a woman had died. Only 29% admitted to having attended births where the baby had experienced problems. No statistical indicators exist to contradict this evaluation of the TBAs' work, nor did this study take into account the opinion of those women who consult TBAs.

Tables 3–5 show the information gathered about the choice of provider (TBA or physician) among pregnant women. Table 3 shows that 12% of women only visit the TBA during pregnancy while 39% only visit the physician (48% visit both the physician and the TBA). If we add this to the 12% who only visit the TBA, we have a total of 60% of women who visit

Table 3. Choice of provider by socio-economic status (SES)

Type of provider	SES low		SES middle		SES high		Total	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Only TBA	57	23.5	32	6.9	1	90	2.5	12.0
Only physician	72	29.6	188			40.3		
					29	72.5	289	38.5
Both	107	44.0	241			51.4		
					10	25.0	357	47.6
None	7	2.9	7			1.5		
					0	0.0	14	1.8
TOTAL	243	100.0	467			100.0		
					40	100.01	750	100.0

Relative risk as estimated through prevalence rates:
The probability of low SES women for:
Consulting the TBA 3.5 (2.3–5.3) times that of middle SES.
Consulting the TBA 9.3 (1.3–65.8) times that of high SES.
The probability of high SES women for:
Consulting a Phys. 1.06 (1.01–1.13) times that of middle SES.
Consulting a Phys. 1.32 (1.21–1.32) times that of low SES.
Source: Survey by the NIPH, 1994.

Table 4. Woman by motive of first visit to TBA

Motive	No.	%
Pregnancy DX	45	10.10
Surveillance	99	22.20
Symptoms	93	20.90
Baby's position	203	45.60
Other	5	1.10
TOTAL	268	100.00

Source: Survey by the NIPH, 1994.

the TBA at least once during pregnancy. Table 4 shows the motives for visiting the TBA the first time, and Table 5 the number of visits made to the TBA.

DISCUSSION

One of the methodological considerations we should like to emphasize in this discussion is the danger of evaluating TBAs with medical parameters derived from a different belief system since each system responds to different forms of interaction with nature, society and the psychosocial experience in relation to the cultural construction of ailments [17]. For example, the perception of certain events does not necessarily follow the same logic for a physician and a TBA who is generally also a peasant [18]. Physicians generally do not consider the symbolic efficacy of a series of cultural prohibitions, whose biological cause is secondary, for example the **hot–cold** duality or the so-called "**air complex**" [19]. Nevertheless, it has been observed that some TBAs with training in the medical sector, still continue to consider culturally related syndromes as risk factors, such as consuming certain foods, or walking in front of a cemetery. An examination of ethnographic data from other parts of the country reveal that the perception of these facts as risk factors is widely held [20]. Associations are made, for example, if a woman washes shawls, the umbilical cord may be tangled around the fetus, or if the pregnant woman eats food stuck to the bottom of the pot, then the placenta may not be easily expelled.

In the analysis of material related to food, we observed that great emphasis is placed on the importance of maintaining balance in the diet. There are many beliefs surrounding the nature of food and when they should be consumed. In the more remote communities with more traditional lifestyles, emphasis is not placed on what foods the pregnant woman may eat, but rather on those which she must avoid. For example, towards the end of pregnancy, close to the estimated due date, the pregnant women is not allowed to eat tripe, chocolate or chili peppers because they are considered to be too hot and irritant.

Table 5. Distribution of women who consulted TBA by number of visits

Times	No. of women	%
0–1	81	18.08
2–3	179	39.95
4–5	97	21.65
6 or more	91	20.31
TOTAL	448 (of 750)	100.00 (60% of total)

Source: Survey by the NIPH, 1994.

The ways in which physicians and TBAs develop and acquire new knowledge also differs [21]. A medical student begins his or her training with an emphasis on human biology. Foucault in his studies on medical discourse states that medical teaching is structured according to Western educational models, which imply a hierarchy related to the reproduction of hegemonic power structures [22]. Along the same line, Byron Good, in one of his recent studies, points out that

> Biomedicine and its students formulate the human body and disease—disease is fundamentally biological—in a culturally distinctive fashion that is perceived and experienced by persons who are suffering. Not that experiential or behavioral matters are ignored, certainly not by good clinicians, but these matters are separated from the real object of medical study and practice [23].

Brigitte Jordan, in her study of TBAs in the state of Yucatan, Mexico observed that their ways of learning through apprenticeship are different from the Western didactic school of learning [24]. Of course there are exceptions. The National University of Mexico has programs where the medical student learns that there is diversity of didactic methods, one of them being tutorials and on-site service training. Nevertheless, it is true that the approach of a scholar who has gone through the occidental educational system is predominantly intellectual whereas that of a TBA, with little schooling, is more intuitive, imitative and integral. By integral, we mean approaching an ill person as someone who was or is vulnerable to the illness experience (or labor in this case); as a person who shares the same environment, and not as an object to be examined from an asymmetrical and complementary role in which the medical student has to know what the patient supposedly does not know and where the patient is the passive entity of a doctor's prescription.

In this learning process defined by the hospital atmosphere, the medical student is bound to experience a dissociation. He/she has to play the role of the objectively oriented scientist, which forces him/her to abandon and hide his emotions and previous subjective experiences. TBAs learn from their own experience or their vulnerability to such an experience. Moreover, not every TBA has the opportunity to learn by apprenticeship, but many of them, as commented by C. H. Brown *et al.*, learn on their own [25]. Frequently, they become TBAs after having had to experience their own delivery on their own, or by having had to attend a sister or a neighbor in delivery without any previous knowledge, experience or even intention (see Table 1).

The acquisition of knowledge through daily events contrasts with formal education. In traditional medicine, skills are acquired through observation and imitation, knowing how to do something does not

necessarily mean being able to explain it or vice versa. TBAs are often unable to respond to or understand questions in surveys aimed at evaluating them, however when their dealing with a specific problem is observed in practice, their knowledge is clear.

In terms of choosing the TBA as care-giver, Table 3 shows that 60% of all women have at least one prenatal visit to the TBA. Of this number, 48% also visit a physician, and 12% only visit the TBA. While other motivations may explain why these women choose the TBA as provider, at least two reasons emerge as the most likely. First, economic accessibility: a TBA-assisted birth at the end of 1994 cost on average U.S. $100, while a private doctor would charge U.S. $500 or more. In an attempt to weigh this factor we looked at the distribution of women by socio-economic status (SES) and their choice of provider. With a model designed on the empirical data collected from this population and using certain consensual criteria to define socio-economic indicators,* we looked at the statistical distribution of these indicators and divided the normal distribution into three percentiles. Only 5.3% fell into the high SES, 62.7% into the middle SES, and 32% fell into the low SES. Table 3 shows that 23.5% belonging to the low SES visit only the TBA and another 44% within this SES visits both the TBA and the physician, i.e., 67.5% of women of low SES seek the TBA for visits.

Within the middle SES, 58.3% seek TBA care, and within the high SES, 27.5%. In brief, within the low and middle SES, close to two-thirds of women seek care from the TBAs, while among the women classified as high SES, a little less than one-third do so. When looking at prevalence rates in the footnote of Table 3, the picture becomes clearer. Women of low SES have 3.56 times greater probability of visiting the TBA than women belonging to the middle SES; and 9.38 times greater probability than women from the high SES. On the other hand, women of high SES are 1.32 times more likely to see a physician than women of low socioeconomic status. The greater cost involved may explain the 32% higher probability of women in the high SES for visiting a physician. Other statistics from the same project reveal that 12% of women did not have any prenatal visit to the physician. Explanations other than cost must account for the nine times higher probability among low SES women for visiting the TBA than women of high SES. Moreover, the fact that even within high SES population, 30% of women make at least one visit to a TBA, requires an explanation other than cost.

In Table 4 we see in the fourth row that 45.6% of the women who visit the TBA for the first visit (most of them in the last three months) do so in order to ensure that the "baby's head is down". For the overall number of visits to the TBA, 54% have the same motivation. Women go to the TBA so she can "accommodate" the baby, massage the womb and ensure that the baby is well-situated. This technique is called "blanketing" and consists of placing a shawl or sheet under the back of the woman, who is lying on her back. The TBA takes the two ends of the shawl and rubs rhythmically and slowly in the dorsal and iliac areas, going up and down various times. This procedure is usually accompanied by the use of plant substances.

Other reasons should explain why most women make more than two visits to the TBA and why those women of high SES who do visit the TBA, 73.7% go more than three times. Women choose TBAs not just because of economic factors, but also because they share a common culture, an empathetic code on the human reproduction experience and because of the perception and the 'collective imaginario' the population has about the role of the TBA and that of the physician. This care-seeking behavior may be understood by the distinct attributes and capacities physicians and TBAs are perceived to have by the pregnant women. Furthermore, the fact that women who have access to medical care use both providers when a symptom occurs may reflect the failure of medical practice—as perceived by the women—to deal with emotions, taking care only of injured organs or physiological systems. These emotions, such as worries and fears, are likely to arise when a woman is helplessly exposed to illness, and perhaps death, especially when she is on the verge of creating a new life, surrounding herself with unknown but feared risks. So by visiting the physician she takes from him what they clearly offer: care of the body. And by visiting the TBA who deals with cosmological understanding, such as the effect of the moon's cycle and solar eclipses on the woman, pregnancy and the fetus, she integrates both practices: the more conceptually expanded and inclusive one of the TBA, and the more technically oriented one of the physician on whom reliance is probably tied to the ability to deal with obstetric complications or symptoms.

For example, within the **hot–cold** duality, birth is classified as a very **hot** moment, and there are measures which should be taken beforehand to prevent related problems. The "**temazcal**", a steam sauna-like bath, dating from pre-Hispanic times, is recommended in the days before the birth "to loosen the joints". The fact that women are made to lie down on the surgery table causes consternation as they believe this to be a possible cause of sterility because metal is cold and sterility is seen as "frigid", "frio", cold. In contrast, the TBAs accept the position which is most comfortable for the woman at the time of expulsion, although many suggest the so-called Mesoamerican position, which has been shown to be one of the most natural birthing positions.

There are other encounters between the health belief systems of women and TBAs, as well as *dis-encounters* with the medical belief system. In relation to gender belief, within the symbolic order,

*NIPH Department of Woman's Health, 1994.

it is very important that the placenta of a baby girl be buried near the *tecuil* (stove where tortillas are made) and that the placenta of a boy be buried in the yard. There are many beliefs concerning misfortunes which haunt children if their placentas are not buried (becoming blind, being bitten by animals, among others). The mother may also experience problems if the ritual is not followed. This is an illustration of one of the factors which explains the reticence certain peasant women have in going to a hospital to deliver. They know that the personnel there do not recommend nor even know, and often even prohibit, the therapeutic rituals recommended by the TBA and sustained by their grandmothers and great grandmothers. Within the traditional practices there are positive aspects which should be preserved, for example, the custom of protecting the perineum with massage to avoid episiotomy. The explanation which the TBAs gave for this was related to what is traditionally considered fuller sexuality, "they cut that and it is never the same".

Within the psychological dimension, fear is one of the most often mentioned. Birth is surrounded by cultural myths and taboos which influence the fear of the pregnant woman. Much of the advice which the TBAs give is in a sense aimed at comprehending the fear of pain; the uncertainty of whether the baby will be normal, and entering a new stage in the relationship with the self which shared the woman's body for nine months. Advice is directed at calming the woman in this vulnerable situation, or to warn her against negative impressions—including going to the hospital if necessary. One should not forget that the TBAs have experienced the same process themselves.

Deficiencies and problems are widely observed within the TBA practices and in the interaction between TBAs and the medical institutions. Most TBAs have inadequate infrastructure for providing care during birthing, though two-thirds of deliveries take place in their homes. The TBA's intervention is not the same when the birth is normal as when there are complications. In the latter case, it is undeniable that the hospital system is completely desirable. Likewise, when complications are detected during a prenatal visit, an effective referral system is fundamental.

Approximately one-fourth of the TBAs attend births at the pregnant woman's home. Some of these homes are so poor that aseptic conditions are rarely met. Furthermore, many times the instruments used are in poor condition and their use inadequate. For example, we observed that some TBAs use a stethoscope to try to listen to the fetal heart beat, but may not be able to distinguish between placental flow, the mother's vessels beat and actual fetal heart beat, a fundamental indicator for evaluating fetal distress. It is unlikely that they hear the heart beat of the child.

Some iatrogenia was observed, especially among trained TBAs, for example the indiscriminate use of oxytoxics even in normal conditions. It is clear that with this intervention, the natural and gradual rhythm of the process is interfered with, and could even prompt uterine inertia or abruptio. With this example, we see the implications of training without supervision, where knowledge is assumed to be acquired, whereas in practice it is shown to be risky when not clearly understood. For example, determining when bleeding is excessive and risky is very relative, since the indicators are not stable and the measurement of quantities is subjective.

CONCLUSIONS AND RECOMMENDATIONS

The importance of TBAs in rural areas of Mexico is undeniable. They play a substantial role in expanding coverage for perinatal care, and family planning programs, partially due to the limitations of the medical system with regard to the population of geographical areas where TBAs provide services, but also because of the importance that the community attributes them.

It is recommended, therefore, that the deficiencies in the TBA-provided care be targeted by multiples strategies that include formal training, continuous training and supervision, and furthermore, interaction with the private and public medical systems.

It is desirable that when TBAs are evaluated at delivery, a combination of the standard procedures from the medical norms are combined with those practices derived from the TBAs and women's paradigms. In Mexico, the interaction of doctors and TBAs in a referral system could lower maternal and infant morbidity and mortality, and bring other economic and cultural benefits for mothers and infants, increasing the effectiveness of the medical system to boot. In this sense, it is strongly recommended that the design of programs for TBAs be based on field evaluations and on an in-depth analysis of their advantages and deficiencies.

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