

FINAL REPORT

Beliefs, Attitudes, and Behavior Limiting the Demand for Prenatal
Care among Guatemalan Indian Adolescents

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I. The Problem and Need for the Study.

Early marriage and low rates of birth control use are conducive to very high adolescent pregnancy rates among Guatemalan Indians. About 25 years ago, Indian women between the ages of 15 and 19 years had an average of one pregnancy (Méndez-Domínguez 1984:50). As marriage is postponed (Early 1982:78), and the use of contraceptives slowly spreads, pregnancy rates have dropped (Méndez-Domínguez 1984:50). Still, as late as 1980, rates of over 50 pregnancies per 100 adolescent women were common even in highly Westernized Indian communities with operative birth control programs (Méndez-Domínguez 1984:50). The seriousness of the problem can best be appreciated in the 15 to 19 age bracket (Dirección General de Estadística 1981:226). One-third of these young women have had at least one child (Dirección General de Estadística 1981:383).

This situation has serious public health implications for young females and their children. Past studies have revealed that children born of adolescents are smaller, weigh less, and die more often than children born of older women; they also show that adolescent mothers are at a greater health risk (Anderson et al 1982:299-300; Guttmacher 1973:69-70; SIECUS 1971:5; Hassan et al 1964; Wallace 1965). In the Guatemalan rural areas, these problems are likely to be compounded due to the poor health and nutritional status of the Indian population (Early 1982:101; Woods, 1968:14). This highlights the need for adequate prenatal care services. However, prenatal care programs are hindered by a low demand for services.

Several years ago, to improve the situation, the Central Government created a training program for local traditional midwives (Moore 1977:92). A house-to-house visit by this personnel constitutes an important effort in some communities to secure periodic check-ups mostly of fetal position in addition to hygienic deliveries. But it is doubtful that an adequate prenatal program for Indians (including nutritional supplementation, weight and growth control, and preparation for delivery) could be implemented under the present conditions of such low demand for services.

Low demand for adequate prenatal care is still further limited during adolescence when knowledge about pregnancy and services is likely to be inaccurate and scanty. This is particularly so of societies as these, which have a very conservative outlook on matters of sex (Paul 1974), and in which the topic is seldom discussed and then only among adults of the same gender (Nick 1975). As women become adults only after the first child is born, a very limited flow of traditional knowledge between generations is expected to occur at this point. Discussion with the young husband is likely to be hindered for the same reasons. Mass media and formal education, although more important than in the past, provide meager information on health issues related to reproduction. The status indefiniteness of the adolescent is a supporting factor in maintaining ignorance about the existing services. Shyness derived from fear of overstepping into the adult world blocks adequate information about these services.

II. Objectives and Hypotheses.

To gain a better knowledge and understanding of the factors inhibiting the demand and use of the prenatal care services, this study has the following specific objectives:

- a) To describe the beliefs and attitudes of pregnant Indian adolescents regarding pregnancy and their caretaking and careseeking behavior during pregnancy.
- b) To determine the knowledge, conceptualizations, and attitudes pregnant adolescents have about traditional and Western prenatal services.
- c) To determine how knowledge, beliefs, and attitudes affect the utilization of prenatal traditional and Western services.
- d) To determine the sources of information and support influencing such knowledge, beliefs, attitudes, and behavior.

The principal working hypotheses of the study were:

- a) Indian adolescents [1] make very inadequate use of prenatal care services [2].
- b) The Indian adolescent's knowledge, beliefs, and attitudes towards pregnancy and health providers are often conducive to inadequate prenatal care.

[1] Fifteen to nineteen years of age.

[2] Prenatal care in these communities usually involves counseling, periodic examinations, food supplementation, and treatment for ailments.

c) The sources of counseling and of emotional and social support provided by the social system are incompatible with proper prenatal care.

III. Research Design and Methodology.

A. The Research Design.

The research design was developed to a) arrive at a national general view of Indian adolescent prenatal care; b) gain knowledge about the variables involved in the decision making process related to prenatal care, and c) describe the ways the adolescent, other members of society, and Western and traditional services interact in the process.

The decision-making process, and the treatment received were believed to be determined by three types of variables: a) the prevailing beliefs and attitudes regarding pregnancy; b) the socio-cultural options provided by the community, and c) the available medical alternatives. Prevailing beliefs and attitudes are those held by the pregnant adolescent, and other individuals who strongly influence the adolescent's behavior. Social options are the ways permitted by the social system to solve a problem or attain an end, in this case to remain healthy during pregnancy and have a normal delivery. The number and kind of social options are likely to vary according to the level of Westernization of the community, and its cultural complexity. For instance, while in traditional Guatemalan towns the pregnant adolescent is usually taken by her mother-in-law to the health provider, in more Westernized towns she may go either with her mother, husband, mother-in-law, or even by herself. Medical

alternatives refer to the number and types of prenatal services available in the community. Some of these alternatives may be a national hospital, a county health center, one or more private physicians, Catholic and Protestant clinics, and the traditional midwives.

To gain insight into how these three sets of variables (beliefs, options, and medical facilities) interact, the research design takes into consideration individuals with very traditional beliefs and attitudes, and individuals with a more Westernized or modern set of beliefs and attitudes, making decisions in communities with either a limited or a great variety of social options and medical alternatives.

In this design, three figures are considered of central importance: the pregnant adolescent with her own knowledge, beliefs, and attitudes about pregnancy, about social options, and about medical facilities; the relevant person or persons who act as information sources, advisers and mediators between the girl and the health care provider, and the health care provider with his or her own beliefs, attitudes, and practices.

B. Sampling Techniques and Characteristics of the Sample.

1. The Community Sample.

Guatemala is a country of considerable cultural complexity. At least eighteen languages and many more dialects (Instituto Lingüístico de Verano 1983: 4-49) are spoken by roughly three and a half million Indians representing forty-two percent of the

nation's total population. Nearly all the heavily populated Indian municipios or counties exhibit important cultural variations within the general pattern of modern mesoamerican culture. To improve national representativeness it was necessary to account, in as much as practical considerations permitted, for these variations. Medical facilities are also markedly different between the more and the less rural Indian communities.

Middle size towns throughout the country are usually served by a public health center attended by a physician and one or more nurses. Health posts with fewer facilities and personnel operate in villages and smaller towns (Maldonado 1985:15-31; AID, 1987:24). Centers and posts are supported by the state and provide services at nominal prices. However, pregnant women seldom request these services (Early 1982:97), except when procuring relief from acute illnesses (AID, 1987:15). Medical services supported by private agencies and independent physicians may also be present in the municipio or county. The national coverage of the former is, nonetheless, limited (Maldonado, 1985:5) and the latter too expensive to use except in case of serious illness (AID, 1987:36).

A decision was made to restrict the study to middle size settlements with existing Western facilities and thus to permit the testing of the working hypotheses and to better understand the decision-making process involved in prenatal care.

Two communities were selected from each of the three major geographical-cultural areas of the country that account for approximately sixty percent of the total Indian population. These areas are: Cakchiquel (Central Highlands), Quiché (middle region of the Western Highlands), and Kekchi-Pokomchi (Northern Highlands). Based on preliminary field work and secondary sources (Dirección General de Estadística 1981), a total of six county seats with a population of less than 10,000 inhabitants, were selected to represent different levels of westernization (thought to be associated to the number of social options) and access to Western medical facilities.

Due to some difficulties encountered during field work (see Implementation below), two other localities in the Kekchi-Pokomchi region were added to the sample (San Cristobal Verapaz and San Pedro Carchá). This situation limits the possibilities of cross-comparison between these communities and the four communities in the Cakchiquel and Quiché regions, but does not impare, and probably enriches, a national overall view of prenatal care among Indian adolescents (see Map 1 for the geographic distribution of the communities).

The eight communities that compose the study sample are described below.

(1) Nahualá to the Northwest of Lake Atitlán, in the Department of Sololá, is the county seat of Nahualá county. Ninety-seven percent of its 2,314 inhabitants are Quiché speaking Indians with very limited knowledge of Spanish. Men and women

still use their traditional dress and in general have a traditional outlook despite Nahuala's proximity to the Pan American Highway. Quetzaltenango, 43 Kms. away, is the closest city. Guatemala city is 158 Kms. east.

Nahualá has the following medical options for prenatal care: a Type "C" health center, a Catholic and Protestant clinic, and around 15 midwives. Nahuala's health center is covered on a year round basis by a physician, 2 nurses, 2 rural health technicians and health promoters. Pregnant women are attended by the doctor, and when he is not available by the male rural technicians. The midwives refer their patients to the health center for free vitamins, milk, corn meal, cooking oil, and tetanus vaccines. The health center does not attend deliveries. The Catholic clinic also has a physician, a male student nurse, and two health promoters. The Protestant clinic only attends members of the Protestant Church. It has the following medical personnel: a medical doctor, a student nurse, and a laboratory technician.

(2) San Andrés Xecul has a population of 4,220 inhabitants. Ninety-nine percent are Quiché speaking Indians, most of whom have limited knowledge of Spanish. The town can be reached by a dirt road, approximately 10 Kms. long, detouring from a major national road. Xecul is not far from Quetzaltenango, Guatemala's second largest city (approximately 11 Kms. westward), but it lies 190 Kms. from the country's capital.

San Andrés has a Type "C" health post, with an advanced medical student, one registered nurse, and one rural health

technician. Prenatal care visits are attended by the doctor or by the nurse. There are no facilities for delivery.

The majority of the pregnant women visit the health post for their prenatal care. They prefer going to the Hospital in nearby Quetzaltenango or Totonicapán for delivery than being attended by the midwives. They feel the hospital is safer, as there have been several delivery related deaths attended by the midwives. The latter are not considered as hygienic as they should be, and do not take prenatal care courses, which are given in San Andrés Xecul only on a yearly basis.

(3) San Lucas Tolimán is one of the twelve towns on the shore of Lake Atitlán, in the department of Sololá. It has a population of 6,067 inhabitants, 82% of whom are Cakchiquel speaking Indians. The town is located about 3 Kms. from a major highway. San Lucas is 117 Kms. west of Guatemala City.

San Lucas Tolimán has a Type "B" health center, a Catholic and a Protestant clinic, a private physician and four midwives. The health center has no facilities for attending deliveries, but prenatal care is offered. The prenatal visits are attended by the registered nurse or the student nurse (generally by the student nurse). Other health personnel in the center includes a doctor and a technician in rural health.

Prenatal visits in the Catholic or Parroquial clinic cost one Quetzal (approximately US\$ 0.35) per visit. Deliveries are attended here for Q30.00 to Q40.00 (approximately US\$ 14.80). Medicines are given free of charge or for a nominal fee. One

doctor and three auxiliary or student nurses attend the clinic; prenatal care visits are seen to by nurses, whereas the doctor assists in the deliveries.

The same doctor is also in charge of the Protestant clinic, which has more personnel than the Catholic Clinic: five auxiliary or student nurses, three registered male nurses, an administrator, an accountant, a janitor, and a caretaker. Here again, prenatal visits cost one Quetzal, and Q30.00 to Q40.00 per delivery depending on the economic resources of the patient. The clinic admits patients mostly from the outlying rural areas. Prenatal visits are attended by the female nurse or the doctor.

Religious membership is not as important here as it is in Nahualá, since either Protestants or Catholics can attend both clinics. The Protestant Clinic is better equipped for deliveries, more hygienic, and spacious. The Catholic Clinic, on the other hand, has a greater variety of medicines.

(4) Sumpango in the Department of Sacatepéquez has a population of 9,040, of which ninety-five percent are Cakchiquel speaking Indians; most of them fully bilingual, moderately Westernized (Ladinoized), and well acquainted with city living and modern facilities. Sumpango is only 45 Kms. west of Guatemala City on the Pan American Highway.

Medical options in the community includes a Type "C" health post, midwives, and two private physicians. The personnel in the health post includes a student doctor, one registered and one

auxiliary or student nurse. The auxiliary nurse attends the majority of the prenatal visits; the health post does not admit patients for deliveries. There is a registration fee for prenatal care of Q0.25 (approximately US\$ 0.09); but each visit is free of charge.

The two private physicians in Sumpango (one works Monday through Friday, the other one only on weekends) do not attend pregnant women, nor assist in deliveries. Patients with more economic resources prefer to go to private physicians in large towns such as Chimaltenango, 13 Kms. away.

There are seven midwives in Sumpango who care for the majority of pregnant women and their deliveries. The midwives refer patients to the health post for vaccination. All deliveries are attended by the midwives at the patient's home. Midwives take refresher courses every month and meet at the health post every fortnight to discuss any problems they may have.

(5) Santa Cruz Verapaz in the department of Alta Verapaz has a population of 1,497 inhabitants, forty-seven percent are Indians, of whom the majority speak Pokomchi. Kekchi-Pokomchi bilingualism is common. Santa Cruz has a Type "C" health post, with one health technician, one auxiliary nurse, and advanced medical student.

(6) San Cristobal Verapaz, less than 5 Kms. from Santa Cruz Verapaz on a paved road, is a larger and more important town than Santa Cruz which, in spite of its county seat status, is a

satellite of San Cristóbal. San Cristóbal has a population of 7,040; seventy percent of whom are Pokomchi and Pokomchi-Kekchi Indian speakers. The town has a large and very well equipped Type "A" health center with ample bedding facilities for delivery, and well organized maternal and child health programs.

(7) San Juan Chamelco in the Department of Alta Verapaz has 3,280 inhabitants. Eighty percent of them are Kekchi speaking Indians. A paved road connects Chamelco with the largest regional city, Cobán, less than half an hour away to the South-East. The town has a Type "C" health center, and has neither a private clinic nor a resident private physician.

San Pedro Carchá is the largest town in the region. Ninety-five percent of its 5,191 inhabitants are Kekchi speaking Indians. Cobán, to the South-West is less than 15 minutes away by a paved road. Carchá has a Type "A" and a Type "B" health center in addition to several private clinics.

2. The Individual Sample.

In accordance with the research design, the individual samples included three types of individuals: the adolescent, relevant others, and prenatal care personnel. Our own preliminary research shows that the mother-in-law and mother are among the most important relevant others for adolescents and influence the girls' decisions at all stages. Consequently, three populations were sampled:

- i) Thirty-five to fifty year old women who could be the mothers or mothers-in-law of the adolescents.
- ii) Fifteen to nineteen year old adolescents at various stages of pregnancy.
- iii) Health care personnel providing prenatal care and counsel.

Twenty to thirty adult women were interviewed in each community. Each locality was divided into quarters, roughly equivalent to the old Spanish divisions of cantones or barrios (see Polo Sifontes 1981). Since a random sample was impossible as it would require considerable knowledge of the population and too much time, an equal number of women were selected from each quarter to minimize sample bias.

The adolescent ideal sample consisted of sixty 15 to 19 year old girls in each community. Since beliefs, attitudes, and practices are likely to vary according to the stage of pregnancy, the adolescent sample was divided into three subsamples corresponding to the first, second, and third trimester of pregnancy. Each subsample was ideally composed of 20 adolescents.

A sample of the personnel of all public and private clinics were to be interviewed, and as many private physicians and midwives as time permitted.

The actual samples of adult women, adolescents and health care personnel are presented in Table 1.

C. Data Collection Instruments.

Seven instruments were developed. Three were used exclusively in interviews with adolescents, one exclusively with adult women, and one exclusively with health care providers. The remaining two instruments were used with all three populations. Observation, key informants, and unstructured interviews were also used to supplement the data collected through interviews.

The instruments used with adolescents include the following topics: socio-demographic characteristics (age, marital status, place of residence, level of education, degree of Westernization, economic status and religion of the adolescent, and of her consanguinal and affinal families); knowledge and attitudes toward pregnancy, and health care providers. The instruments also include questions aimed to determine the conceptual place of pregnancy within the domain of body states, and to describe careseeking behavior and its relation to elements of the social and illness domains. Finally, there is a large number of questions intended to clarify the underlying cultural and social factors involved in the selection of specialists for consultation and treatment received while pregnant (see Appendix, instruments 1,2,5,6, and 7).

Adult women were interviewed on knowledge and attitudes toward pregnancy, the health care personnel, and treatments (see Appendix, instruments 2,3, and 5).

Interviews with health care personnel covered topics on the personnel and the services available at the public and private clinics in and near the community. In the case of the midwives, the instruments also included questions on attitudes toward adolescent pregnancy and knowledge and attitudes regarding pregnancy itself (see Appendix, instruments 2,4, and 5).

All instruments were translated into the four appropriate Indian languages (Cakchiquel, Quiché, Kekchi, and Pokomchi) to ensure comprehension of the questions and to avoid cultural biases, especially in the cognitive-attitudinal survey items. Translation was done by the field personnel. Groups of two and three fieldworkers worked on each version to secure an adequate translation. The instruments were field tested for comprehension in communities near those selected for the main study. An item by item review of the results from three days of practice led to the final version of the instruments.

D. Methods of Analysis and Statistical Techniques.

The complex nature of the study required different methods of analysis and statistical techniques for its various components. Some aspects are best covered by an interpretative, non-quantitative analysis, while others are enhanced by the application of statistical techniques. In the analysis of the data an effort was made to keep this consideration in mind and reach a balance between qualitative and quantitative analysis. Simple statistical techniques such as percentages and measures of central tendency were applied to most of the data. A variety of formal analysis, cluster frequencies, and hierarchical clustering

were applied to materials related to the selection of the specialist and the structure of the illness domain (See Results, for greater detail on the use of these specialized techniques).

IV. Implementation.

The study was carried out in three major phases: 1) the preparation for data collection including the elaboration and testing of the instruments and hiring and training the field personnel; 2) the collection of the field data, and 3) the final processing and analysis of the information, and dissemination of results.

A. Phase I: Preparation.

To maximize interpersonal rapport and minimize linguistic and inter-ethnic biases, Indian women from communities near those studied were used as field personnel and interviews were carried out in the local languages. Young unmarried Indian girls are expected to know little about sexual matters and to refrain from talking about them. Consequently, in hiring the interviewers, an effort was made to select women who had at least one child. Generally, these women are allowed to talk freely about sexual matters and pregnancy. To facilitate communication, young interviewers were preferred. An ability to write in the local language and to be able to translate back and forth in their native language and Spanish were required. Most of the interviewers selected were rural school teachers. The training of these personnel included an item by item review of all questions in the seven instruments; mock practices between

interviewers, field practices, and review and evaluation of those practices.

The original work plan was to have a fieldworker who would supervise the fieldwork teams daily. However, due to the distances between the selected communities, close supervision of the field teams was not possible. To remedy the situation, one fieldworker in each language group was trained as a supervisor. Her duties included helping with interviews, reviewing the material collected by the other interviewers, and reporting any problems and doubts that emerged in the field operation to the principal investigator.

B. Phase II: Field Work.

Fieldwork started late in August 1988, and was completed in mid January, 1989. The fieldwork involved two periods of residence in each community. During the first period of residence, the field team interviewed the adult women, using instruments 2,3, and 5. Other important activities at this time were the formation of the sample of recently married or pregnant adolescents to be interviewed during the second period of residence in the community and the compilation of a preliminary inventory of prenatal care services available in the community and its surroundings. Once these materials were partially processed, the field team was sent back to the community for the second period of residence to interview adolescents, midwives, and other health care personnel.

Two main difficulties were encountered during fieldwork; one concerned the fieldwork personnel and the other concerned the number of interviews that were actually carried out with the pregnant adolescents. Two Kekchi and three Cakchiquel groups of field personnel rather than one per language, had to be trained in the use of the instruments, because the first groups either did not perform adequately or showed a lack of responsibility. Anticipating difficulties in setting up the adolescent sample in each community, preliminary lists of adolescents were constructed during the interviewers' first stay in each community. This was done by visiting the Civil Registry, the Health Centers and through informal interviews with the people of the town. Unfortunately, the Civil Registry's marriage listings did not provide addresses and the Health Centers had very incomplete registers. A third source of information on pregnant adolescents were their younger siblings who attended the local schools. This source also proved inadequate because of an early suspension of school activities.

These problems were compounded by the small size of some of the communities, and consequently its small adolescent population and in others by the commercial activity of women or seasonal migrations that takes them away from the locality for several days or even months.

In the two Kekchi communities originally chosen (San Juan Chamelco and San Cristobal Verapaz), it proved impossible to obtain the number of interviews originally planned in the research design. To compensate for this, two other communities

were chosen to increase the number of interviews; Santa Cruz Verapaz and San Pedro Carchá.

Due to these difficulties and to those with the personnel, and above all, due to the secrecy surrounding the first months of pregnancy, the number of interviews with adolescents that was originally planned (360) was not reached. However, the actual size of the sample of adolescents (282) is adequate for the purposes of the study.

C. Phase III: Processing and Analysis of Data.

The data collected in the field was transported on a regular basis to the central offices in Guatemala City. There the interviews were coded and the answers requiring no translation were processed. Translation began in the field, but most of it was carried out in the office by the interviewers during the time between the first and second period of residence in the community or at the end of the data collection phase.

V. Results.

A. The Pregnant Indian Adolescent, Her Knowledge, Beliefs, Attitudes, and Behavior.

In the communities studied sex and procreation are considered to be matters which the unmarried young girl should neither talk nor know about. If she does, she is a bad girl. Sex is of such concern in these societies that siblings of different sexes are discouraged from talking and playing with each other from about age eight on. Formal education and mass media offer but meager amount of information on this aspect of

life. Thus girls marry knowing very little, and find themselves with tutors, such as the mother and mother-in-law, who can barely improve this situation. In most cases, the young girl learns about pregnancy from one month to another, the principal source of knowledge appears to be her own experience. While sixty-four percent of the girls that were two months pregnant were able to mention at least one symptom or characteristic associated with the first month of pregnancy, only twenty-seven percent were able to do so regarding the symptoms of the following months. While most of the girls in their seventh month of pregnancy could mention one or more symptoms or characteristics of the first, second, third, fourth, and fifth months of pregnancy, just above half of them could mention symptoms of the eighth and ninth months, see Table 2. Similarly, a very small number of these adolescents knew about the common ailments associated with pregnancy and sixty-five percent of them could not even mention half of the midwives well-known in their communities. This sharply contrasts with the richness of emotional, spiritual, and social aspects adolescents associate with pregnancy as seen below.

1. Feelings, Attitudes, and Emotions.

In order to determine the conceptual association of various feelings with pregnancy a three point scale was developed. The average value of three degrees of intensity, (1) intensely felt, (2) moderately felt, (3) not felt, was used. The measure is referred to as the average associational distance (AAD) of the feelings investigated as related to pregnancy, see Figure 1.

The interview data revealed that for the young Indian adolescent, pregnancy is a condition primarily associated with feelings of an emotional and spiritual nature rather than a physical nature. Love, fear, boredom, shame-shyness are closely associated with pregnancy. Physical feelings such as pain, hunger, and cravings are not as closely related.

Most adolescents (82%) associate love with pregnancy. The AAD for love was 1.34 for the entire sample. Some adolescents associate love for the child, others love for the husband, and still others love for the family in general. Since love relates to the desire or rejection for the child (see below), the intensity with which it is felt modifies other feelings the young mother associates to pregnancy. It was found, for instance, that shame was more intensely felt among those who felt moderate or no love than among those who felt it intensely.

Girls are usually very frightened of being pregnant. Fear is the second most mentioned feeling (74%) associated to pregnancy and has about the same average associational distance to pregnancy as love (1.40). Girls said they were afraid of dying during delivery, of aborting, of pain during delivery, and of the child dying or being abnormal.

Love and fear tear the girl between desire for the child and apprehension toward childbirth. While the first of these feelings seems to be based on cultural values, the second is supported by the generalized ignorance of the biological processes, and a distrust for the existing health facilities.

Fifty-nine percent of the girls feel an intense boredom resulting from limitations imposed by biological discomforts. Overall the AAD for boredom was 1.63. This may be due to feelings of sadness derived from exclusion from full social participation in activities that were accustomed when single. Since marriage and pregnancy occur almost simultaneously in these societies, the feeling of exclusion is likely to be a complex issue related to social status change. Since full adulthood is thought to be reached only after delivery, a girl finds herself at a threshold of status change for nearly nine months. During this period she is limited from full social participation in both the status she is leaving and the status she is about to enter.

About half of the girls feel intense shame while pregnant. The AAD for shame is 1.90. Girls say they are ashamed because their "stomach" is growing; people stare at them and talk behind their back. The secrecy in which sexual matters are held for the young in these societies, the strict social regulations between genders, and the value assigned to sexual ignorance on the part of young girls, suggests that shame is a very deeply grounded feeling. The growth of the "stomach" not only alters her appearance making her shy, but is a clear evidence of sexual experience. Being at the threshold of status change, she is neither a virgin nor a true woman, and she appears to be overwhelmed by feelings of insecurity and shame.

Fifty-three percent of the girls feel extremely tired when pregnant. The AAD for tiredness is 1.80. However, none of the respondents mentioned the child's need for nutrients, poor

nourishment, or the biological condition of the mother, such as anemia, as cause for this condition. Tiredness is said to be caused by the weight of the child. The mother is in a very literal way, primarily a child carrier.

Forty-three percent of the informants associate pregnancy with pain. The AAD for pain is 2.01 whether these pains are normal or abnormal or related to delivery. Almost an equal percent (41%) think the same of cravings. Overall, cravings have an AAD of 2.00. As cravings are always for food, they are very similar to hunger which is mentioned by a similar percentage of informants (36%). Cravings and hunger are felt--adolescents say--because the child "wants to eat", "desires something", "already eats", or "he is growing". These are not metaphoric ways to express the need for a more abundant food supply for the mother. Most of the girls actually believe that the child demands food and that he is able to eat somehow. For many of them, the child is a perfectly formed being who eats and breathes in utero.

One-third of the girls associate pregnancy to sadness. Most of them attribute this feeling to the uncertainties and fears related to delivery. One can imagine other reasons such as boredom and fatigue. In addition they have often been removed from their parental homes and placed under the supervision of their mother-in-law (see Results: The Relevant Other), and are leaving their previous status of young, unmarried girls to become responsible, adult women.

Surprisingly, only a fifth of them (21%) associate pride to pregnancy. The AAD for pride is 2.51. Even less associate thirst (19%) and cold (14%) to it. Feelings such as rancour, hate, contempt, and anger are distantly related to pregnancy.

2. Behavior and Role Activities

Adolescent girls think that there are activities which should be avoided. In some of them the girl is the subject and in others she is the object of the action. Some activities are of a physical or a psychological nature, and others have implications for social relations and role performance.

Only jumping, of all of the physical activities measured, is strongly associated with pregnancy. Ninety percent of the girls believe jumping can cause an abortion because "the womb leaves the child loose," or because the womb itself falls. Jumping can also change the child's position, causing pain and difficulties during delivery and increasing risks for the mother and child.

The data shows that walking is nearly irrelevant. Only eleven percent of the girls believe walking has negative effects, such as swelling of the feet and backaches. Excessive walking is believed to cause tiredness, and lead to abortion, premature birth, or weak children. It is worthwhile to notice, however, that women normally walk considerable distances in these villages, and what they call excessive walking may actually be considered excessive. Only one girl reported that walking may help pregnancy and delivery.

Although tiredness and pregnancy are associated in the adolescent's mind, there is no evidence of a widespread belief that pregnancy causes a desire to sleep.

Some psychological activities, such as crying, have considerable importance in pregnancy. Over half of the girls think that crying results in babies with stomach aches (cólicos), and children that cry for everything. Some girls think crying can even lead to abortion. There are other psychological activities which are considered of very little importance, such as thinking. Only very few girls associate thinking to sadness with the negative consequences seen above.

Antisocial behavior results in considerable damage for the mother and her child. Seventy-two percent think that anger (cólera) and/or fright (susto) felt by the mother due to fighting can induce abortion. Anger is also believed to produce stomachaches (cólicos) in the newly born baby. About half of the girls also reported that fighting can be damaging because the mother can receive a bad blow. In the latter case the child, if born alive, would be all black-and-blue (morado).

One-fourth of the girls think that insulting another person has negative effects on pregnancy. Insulting involves anger (cólera), with the related consequences, but most important, one may become the object of witchcraft. Witchcraft can kill, make mother and child sick, or make delivery very painful.

Pregnancy bears on activities strongly identified with women's roles in society. Some of the most important of these activities is making flat corn bread (tortear); washing clothes (lavar), and carrying water or cornmeal (mixtamal) in pots or pails. Tortear is regarded as the most compatible of these activities with pregnancy. Over three-fourths of the girls think it is possible to tortear without endangering themselves or the child. Only a few of them believe it can have minor negative consequences, such as backaches and headaches due to the standing position and the proximity of a cooking fire.

Clothes-washing is viewed as less compatible with pregnancy than tortear. Sixty-five percent consider that there is no danger in doing it. Thirteen percent do not approve of any clothes-washing at all, compared to nine percent in the case of tortear. Clothes-washing can be done but in a very moderate way according to 22%. In the case of tortear, this restriction is supported by only 14%. Besides backaches it is believed that washing can produce a change in the child's position due to the back and forth movement and that after birth the child may show a proclivity to respiratory diseases because of this proximity to water.

To carry a pot or pail of cornmeal or water is still less compatible. Only 44% think it can be done without injury for mother or child, one-fifth (18%) think it should not be done at all, and over a third (38%) think that it should be done only in a moderate way. Otherwise, abortion, damage to the mother's womb, and children with hernias, crippled, or dead are expected.

Activities bearing on pregnancy in which the pregnant adolescent is the object of the action usually involves, in addition to physical damage, violation of social norms. Being pushed (78%) and beaten (82%), which often occurs to young wives in these societies, is believed to hurt the child or induce abortion.

Similarly, the importance of sexual activity (in which women are usually considered passive agents), varies according to social approval. To be kissed has no bearing on pregnancy. Having voluntary sexual relations affects pregnancy negatively only according to thirty percent of the girls. Among the negative effects mentioned is the belief that the child may be hit by the penis and born crippled or turn into an abnormal position complicating delivery. Some girls think that having voluntary sexual relations has a positive effect by helping to keep the vagina open for an easier delivery. On the contrary, to be raped has important negative effects according to eighty-three percent of the informants. As in the above cases, the child may be hurt by the penis and born crippled. In addition, the mother's anger, hate, and fright alone may induce abortion.

The importance of social context and social condemnation is also reflected in the following actions. Only ten percent of the girls interviewed think that to be bothered or teased can affect pregnancy, and then only if the girl gets angry, or if there is a hidden bad intention behind the teasing. In the case of being scolded the situation is somewhat different. Eighteen percent of the girls believe that the anger and sadness felt by the

admonished girl affects the child negatively. Some girls think that the unborn child can hear the scolding and become sad with serious consequences. A still larger percentage (28%) think that being insulted has damaging effects because of the animosity involved. The girl's anger may cause a child to be born with stomachaches (cólicos) or induce abortion. Witchcraft is the epitome of actions involving conflictive relations. It is not surprising that forty-three percent of the girls believe that the death of the mother and the child may be caused by witchcraft. Many more may share this belief but are reluctant to discuss about it. Witchcraft is also considered important because it endangers the soul.

It is because of the potential damage to the soul that to be frightened is also considered important by 80% of the girls. When frightened, the soul is lost, or can be imprinted with the image of an event or substance (see Méndez-Domínguez 1983). This leads to psychological commotion with possible serious consequences for the mother and child. Finally, to be poisoned, strongly associated to witchcraft and its physical consequences, are dreaded by ninety-four percent of the girls. They consider it a real danger for the mother's and child's life.

3. Forms of Being and Status.

Informants associate various forms of being to pregnancy. Some of these forms are of a physical nature (i.e. being fat), others are personality traits (i.e. being angry), and still others relate to social roles and conditions (i.e. being

married). Few girls attribute any importance to being short, (5%), or fat (19%). Shortness, it is said, may cause difficulties in expelling the child, obesity may make the mother's heart fail during delivery. A greater number of girls (48%), believe that women with narrow hips have to be operated. It may be significant that wide hips are considered a sign of beauty in these societies.

It is significant that only seventeen percent of the girls consider being too young as having any bearing on the risks of pregnancy. These few girls think that the children of very young mothers are smaller and likely to die, that the mother is unable to carry the weight of the child because her bones and muscles are not fully developed, and that she lacks the necessary strength for delivery. But even this small percent of adolescents believes that girls 17 or 18 years old are completely capable of having children, and should not have problems.

The importance of a personality trait seems to be associated with its social relevance. According to one-fifth of the girls, children suffering from nervous disorders and seizures are born of nervous mothers. Many more girls believe that a lack of responsibility on the mothers part induces a lack of care for herself and the child with a variety of negative consequences. To be dirty leads to sickness, and to be angry leads to the problems of cólera, above described, according to approximately forty percent of the informants.

Surprisingly, the social status of the girl and her economic situation are regarded as important by a relatively small number of informants. Only one-fourth of the girls attribute any importance to being married (legally or by custom) versus single. Those who attribute any importance to marital status mention lack of money, desire to kill the unborn child, sadness and loneliness at delivery as negative factors associated with being single. Similarly, poverty is generally not conceived of as an important issue by most girls. Only 23% of the girls believe poverty may result in a lack of food for the mother and a weakened infant.

B. Services.

1. Number and Kind of Services.

Prenatal care is offered in the national hospitals, health centers and posts, and private clinics, and by private physicians, healers, (curanderos), and midwives (comadronas). However, only the national hospitals, the Type A health centers, and the more complete private clinics have bedding facilities and equipment for delivery. These centers and clinics are scarce throughout the rural area.

Only two of the communities studied, San Cristobal Verapaz and Carchá, have delivery and postpartum facilities provided by Type A health centers. Another community, San Lucas, has limited bedding facilities provided by the Catholic and the Protestant clinic. The inhabitants of the other two communities (Chamelco and Santa Cruz Verapaz) can reach a regional hospital or a Type A health center in less than a quarter of an hour's drive. People living in the rest of the communities (Xecul, Nahualá and

Sumpango) can reach a hospital or a health center in about 45 minutes. However, even a short distance is a deterrent for people having no private means of transportation, living in localities lacking night services, and having infrequent and unreliable transportation during the day. People have other objections. Since the hospitals and health centers are usually located outside the community, this would mean a physical and emotional separation from blood and affinal relatives. It also means that a different specialist than the one consulted during pregnancy would attend the delivery.

Five communities have one or more private physicians who offer prenatal care. Adolescents and adults largely agree that to have a private physician is best. But to be attended by one has some inconveniences. While in the national centers prenatal examinations are either free or have a nominal charge (for instance the equivalent of US \$0.08), a private physician will charge about US \$1.75. People consider this very expensive even in comparison with a private religious clinic. The Catholic clinic in San Lucas, for instance, charges only US \$0.33. Moreover, the private physicians' clinics have no bedding facilities. Physicians refer their patients to national hospitals, large private clinics or Type A health centers for delivery care. The physical and emotional separation from the family are, in this case, also present. Occasionally, a physician may accept to deliver a baby at the patient's house, but they usually decline because of unhygienic conditions and the patient's inability to pay for the service.

Consultation with a comadrona has none of these problems. There are plenty of midwives in all the communities. In Xecul, for instance, there are 24. Midwives are also inexpensive and tune in with the people's conception of pregnancy as something natural and frequent. A prenatal examination, which may include a steam bath, may cost as little as US \$0.20. The midwife is also someone widely known in the community and the mother-in-law, the mother, and even the girl may have been her patient in a pregnancy or an illness. Furthermore, and more importantly, the midwife not only offers prenatal care, but attends the delivery in the patient's own home. She is usually available any day, at any time, lives near-by, and charges only Q25.00 to Q30.00 for delivering a girl (about US \$10.00); and maybe Q40.00 or Q45.00 (about US \$16.50) for a boy. This is really inexpensive considering a hen costs Q16.00.

Most midwives have strengthened their empirical and folk knowledge through short training courses offered by the Ministry of Health and maintain some relationship with the public health establishments in the community. In all communities midwives said they referred the difficult cases to the local center or closest hospital. For midwives in some communities, this relationship with the health center goes even further. The midwife diagnoses the pregnancy, and refers all of her patients to the health center for food supplements (corn meal, cooking oil, and powdered milk), tetanus vaccination, and laboratory examinations when available.

The present research took place in middle sized towns, seats of the municipal government. The majority of the Indian population lives outside these towns in small villages and hamlets, with no health facilities. The nearest health center, while it may not be very distant, is often reachable only by foot paths across mountains. This implies an even greater dependence on midwives in these rural areas.

The curandero or healer is consulted only in those cases of illness associated with pregnancy, particularly, but by no means exclusively, when black magic is suspected. The healer not only makes the diagnosis through folkloric means, but also prescribes the cure. Cures includes patented medicines as well as homemade remedies and magical rituals.

2. Service Attendance.

Midwives as a group provide more prenatal and delivery care for adolescents than other specialists, not only because they are more numerous, but also because each midwife attends more girls on the average than any other specialist. This is particularly true of the first visit to a specialist. Sixty percent of the girls that at the time of the study had gone to a specialist, consulted first with a midwife; eighteen percent with personnel of the health center; eighteen percent with a private physician, three percent with a parochial or private clinic, and only one percent consulted with personnel of a national hospital.

The first consultation with a specialist generally occurs very late in pregnancy, frequently (31%) in the fifth month and

later, after the child's movements have been felt by the mother. It is not surprising, therefore, that forty-two percent of the totality of adolescents interviewed at all stages of pregnancy had received no prenatal care, and had never been examined even by a local specialist.

When a midwife is consulted, the first visit may occur exceptionally late, in the seventh to the ninth month. The comadrone delay effect appears to be related to a normal pregnancy; if everything is going well there is no need for a consultation with a highly trained Western specialist or any specialist late in pregnancy.

After the first visit, the specialist seems to have no problem in encouraging return visits. Generally the specialists ask the adolescents to return once a month, except in the ninth month when checkups every fifteen days are usually required. It seems that once the culturally based feelings of shame and insecurity have been conquered, the communication with the appropriate relatives has been established, and the social mechanisms have been put to work (the mother-in-law and mother selecting the specialist and introducing the girl to him or her), resistance vanishes and the opportunities for regular prenatal care is present.

3. Care and Treatments.

The midwife's prenatal examination generally consists of gently rubbing the "stomach" or "womb" (matriz), with oil, suet, Vick's Vapor rub, or other all-purpose commercial ointments. They

claim that this enables them to determine whether the child is in a good position and whether they can expect a normal delivery. The examination usually takes place inside of a temascal, a Mayan Indian steam bath. The temascal, usually a small enclosure made of mud bricks with a miniature door is located in the midwife's home. In the center or at the side there is a pile of stones previously heated with a wood fire and over which water is poured to produce steam. The heat, steam, and ointments soften the girl's skin making it easier for the midwife to massage the patient's abdomen, to detect the child's movements, and to place him or her in the right position, if necessary. If the midwife is not satisfied, she advises the girl to consult a physician. Both patient and midwife are completely nude while bathing, facilitating the examination, and probably breaking down shame barriers. Midwives advise girls to take a temascal bath at least once a month during the last four months.

Nurses at the health centers and private clinics also rub the abdomen to detect the child's position, without the help of the temascal or ointments. They are supposed to weigh and measure the patients and in some communities they take their blood pressure, examine their breasts for nipple formation, vaccinate them against tetanus, and give them vitamins and food.

The private physician and the medical students examine, weigh, and measure the girl. Some of them examine the breasts and the inside of the eyelids for anemia. Very few of them talk to the girls about delivery.

C. The Relevant Others.

Older women, seventy years and over, remember the days when marriage was a contract between families. Children were engaged to be married immediately. A girl spent her infancy in her parents' house and then, around age seven to nine was sent to the in-law's house. There, under the close supervision of the mother-in-law, she learned the duties of a good wife and the way that things should be done in her husband's house. The mother-in-law was in charge of guiding her, including in matters of sex and reproduction. While waiting for puberty, the mother-in-law closely guarded her against sexual advances from male members of the family, and, above all, from her son, the girl's husband. To ensure her protection, the girl slept with her. When puberty came, the mother-in-law watched for her first menstruation and decided when sexual relations should take place.

At the present time, contractual marriage even at an older age, has practically disappeared. Women and men become acquainted with each other by their own initiative and marriage is an act of volition. However, residence in the in-law's house immediately after marriage, and often until the first child is born, is still the dominant pattern in many Indian communities.

Seventy-eight percent of the adolescents interviewed in the eight communities live with their parents-in-law, either in the same house or residential plot, eleven percent live in their own parents' house, and only nine percent live in an entirely different dwelling (two percent have made other residential arrangements). Although residence in a separate property seems

to be increasing, judging from what is happening in Sumpango, the largest and closest town to Guatemala City, only sixteen percent of the adolescents interviewed live in a separate dwelling.

Living in the parents-in-law's house is a painful experience for most adolescents. For example, approximately one-third of them considered the in-law's house worse than their own. In communities where residence in the in-laws' house is more severely marked (Xecul and Nahualá) over half of the girls think the in-laws' house is worse.

The mother-in-law is not the overwhelming figure she was up to the beginning of this century, but she still plays an important role in the training of the girl and in the young couples relationship including sexual behavior and procreativity. But informal interviews with some of the girls show that their position in the in-laws' house varies considerably. The young wife may occupy a very subservient position. For example, she may be responsible for cooking for the entire family. In other households, she may only help her mother-in-law cook, and in others she may be allowed to cook separately for her husband and herself.

Being forced to live under their mothers-in-law's supervision make these young wives perceive them as figures that inspire a low degree of affection and trust; not much respect nor fear, but much shame. The position of the mother-in-law with respect to the mother and husband can be appreciated in Figure 2

in which the relative number of girls that feel much love, trust, respect, fear, and shame for their husbands, mothers, and mothers-in-law is shown.

This perception of the mother-in-law may have important consequences for communication between mother-in-law and daughter-in-law. An adequate intergenerational flow of knowledge and information on sex and reproduction is further hindered by the secrecy with which these matters are treated in these communities.

In addition to these obstacles to communicate there is a generation gap that restricts the adolescent's possibilities of acquiring relevant modern Western knowledge from either her mother-in-law or her own mother. Since the adolescent days of the older generation, the communities studied have changed considerably. Urban contacts, Westernization, medical facilities, and wealth have notably increased. While only four percent of the adolescents in the four towns are monolingual, seventy-six percent of the mothers-in-law, and seventy-nine percent of the mothers are monolingual. Adolescents seem to be aware of this situation because around sixty percent reported that their mothers and mothers-in-law knew less Spanish than they did. There are also major differences in formal education, although the educational level is low for both generations. While mothers and mothers-in-law have an average of 0.30 years of formal education, adolescents have an average of 2.42 years.

Fluency in Spanish and formal education are important tools to acquire knowledge on procreation and information about health facilities from the mass media and in personal contact with the health providers. Hence, the older generation is handicapped when trying to provide adequate information to young girls.

In spite of the strained interpersonal relations and the differences in Westernization and formal education, the adolescent wife is controlled by and depends upon her mother-in-law for advice. The mother-in-law feels responsible for the girl. She repeatedly asks the girl if she has menstruated, since the girl will be too bashful to discuss this with her mother-in-law. For the mother-in-law this issue is important since she usually feels responsible for the well-being of the girl. Nowadays a girl usually confides first in her husband or mother; the mother-in-law being advised of the girl's possible pregnancy through them. But even now in nearly one-fifth (16%) of the cases the mother-in-law is the first to be informed. In any case this is a matter of much shame and the girl hides the issue as long as she can. Over sixty percent of them reveal their pregnancy only after two missed periods.

The revelation of the pregnancy, however, does not guarantee a visit to a health care provider (See Service Attendance).

The mother-in-law accompanies the girl for the first examination most frequently (43%), but the mother may also go with her. Only exceptionally do girls go by themselves or with

their husbands. The girl's medical care is often delayed until the second or the third trimesters of pregnancy when the mother-in-law or mother accompany her, see Table 3.

The mothers-in-law beliefs regarding pregnancy and childbirth are significant. Over one-fourth of them consider that the best age to become pregnant is before 20 years of age. Over sixty percent believe the best age to become pregnant is 20 years of age and before. Close to fifty percent believe that pregnancy should occur immediately after marriage in the small towns of the Quiché regions. However, there is some variation between communities. In the larger towns of the Cakchiquel region and in the northern region the postponement of pregnancy for some months after marriage is preferred.

Preference for an early pregnancy is determined by an alleged desire of the male companion and the parents-in-law to have children and grandchildren. In spite of this general preference for an early pregnancy, sixty-nine percent of the adult women in all communities think that pregnancy is a matter of much concern. This is illustrated by the fact that over half of them have a great fear of pregnancy and consider it more serious than four of the most commonly recognized illnesses: fever, diarrhea, common cold, and magical fright, Table 4.

These older women have strong ideas about the health care providers. Important criteria for their preference are the security these services offer for the health of the mother and child; the shyness the girl may feel when examined, and their

availability when needed. Most of them (55%) report that physicians offer a greater security. However, a large sector (29%) thinks that the midwife is best in terms of security. But even when the physician is preferred on these grounds, over fifty percent of the adult women believe that the girls feel less ashamed when treated by the midwife than by any other health care providers. There is also the matter of the proximity of the health care provider to home and his or her availability at the time of delivery. Sixty-eight percent feel that the midwife is more available than other health care providers. There is also the matter of cost. Midwives offer the most inexpensive service in all the communities.

Health centers and private clinics offer prenatal care and treatment but do not assist in deliveries except in emergencies when they may help midwives deliver in the patient's house. Midwives are preferred because they will be attending the girl not only during prenatal visits, but also during delivery.

D. Selecting the Specialist.

1. Health, Social, and Economic Determinants.

The patient who consults with the midwife is the common girl with no major health problems. This study reveals that consultation with the health center personnel and the private physician is related to various social attributes of the patient and the way pregnancy develops. The weight of these characteristics and events was calculated by counting the number of times each of them was mentioned by the informants and dividing these frequencies by the total number of replies. A

weight of .50 indicates an equal probability of going or not going to a given specialist. The girls who attend the health center have the following characteristics in order of importance: they have not worked in large cities (.64); have health problems derived from pregnancy (.58); are poor (.57); have never been pregnant before (.54). The girls consulting with a private physician are: well off (.80); have health problems derived from pregnancy (.78); are pregnant for the first time (.71); and are very young (.58).

2. Cultural Determinants.

To develop sound education and intervention programs, it is necessary to know not only how people act but why. Knowledge of the beliefs pertaining to a relevant cognitive domain provides a sound understanding of behavior when considerations of a practical nature are also incorporated into the argument. We repeatedly hear from informants that pregnancy is not an illness or disease, but a unique body condition. This creates complex problems for a cognitive anthropological study since it is difficult to identify a relevant domain. It was considered that in order to understand prenatal care and the process involved in the choice of a specialist, the analysis of the illness domain may prove useful. This domain has some recognizable similarities to pregnancy, such as a relation to one or more body parts, the need for special care and treatment, and the consultation with the same types of specialists.

Using componential analysis (Lounsbury 1969, Goodenough 1969), the thirteen most common and important illnesses these communities experience were broken down into attributes potentially relevant to understand prenatal care. The following kinds of attributes were included in the analysis: allocation of the illness within the body, genders and ages at risk, and the patient's feelings when suffering from the disease.

The allocation attributes include: blood, skin, head, stomach, lungs, arms and legs, chest, and reproductive organs.

Age and gender include children, adult women, and adult men. Feelings include fear, shame-shyness, cravings, pain, cold, and hunger. The intensity with which these feelings were felt was measured on a three-point scale: very intense, moderate, and not felt.

Efforts were made to avoid a priori assumptions that would cause a cultural bias. Accordingly, the selection of the thirteen diseases and attributes was based on their recurrence in the data gathered from a pool of informants prior to the main phase of the research. Young Indian women from communities near those studied, among whom the interviewers were eventually chosen, formed the pool.

Cluster analysis was applied to these data and the degree of cognitive similarity was mapped in a dendrogram, see Figure 3. Similarity is represented by the distance of the branches to a

common trunk. Thus, fever and measles are near each other and cognitively similar; both are distantly related to worms and even more distantly related to headaches.

The cognitive arrangement shown in the dendrogram shows very little relationship to the choice of specialists. For instance, a private physician is preferred in the case of measles and anemia by a large percentage of informants (41% and 68% respectively); however, these illnesses are cognitively distant one from the other in the dendrogram. Worms and stomachaches are close to each other in the dendrogram, but the healer is preferred by fifty-four percent of the informants in the case of worms and is almost never consulted in the case of stomachaches (3%).

To gain a better understanding of the relationship between the conceptualization of body states (including illnesses and pregnancy) and the choice of specialists and treatments, the following procedures were carried out. The attributes corresponding to the categories of allocation, gender, age, and feelings of all thirteen diseases together with the kind of treatment received and the specialist consulted were cast into a single pool consisting of approximately 41,000 digits. Each digit corresponds to an attribute, kind of treatment, or type of specialist. The next step consisted in determining the frequency with which each of the possible combinations occurred (i.e. the feeling of shame occurring with injecting and visiting a physician). These procedures provided basic information on the syntax of medical behavior based on the probability of recurrence

of a specific belief with a particular behavioral unit. A sample of these findings concerning illness attributes and treatment is presented in Table 5.

The probability that a given specialist will be consulted when a particular attribute is present was calculated. Thus, a midwife has a probability of 0.13 of being consulted, in the case of a common disease, when the patient is a woman, and only 0.06 when the patient is a man. A healer has a probability of only 0.05 when the patient is a woman while a private physician has one of 0.39. The health center personnel has a still greater probability, one of 0.43. The midwife and the health center personnel have about the same probability of being consulted when the patient is a child as when the patient is a woman, but the healer has a greater probability (0.22), and the private physician less probability (0.24) when the patient is a child, see Table 6.

If the patient suffers from a disease of the blood, skin, head, lungs, or arms and legs, the probabilities that the health centers' personnel will be consulted are above 0.50. The probability that a private physician would be consulted when the patient suffers from such problems is high only in the case of diseases associated with blood and skin (above 0.25). The physician is also consulted in the case of diseases of the breast (0.32) and reproductive organs (0.45). The probability that a healer will be consulted is high in the case the disease allocation is in the arms and legs (0.25). He is also consulted

for diseases associated with the soul (0.35). Finally, the probability that the midwife will be consulted in the cases of illnesses associated with blood, skin, head, lungs, or legs and arms is near 0. Midwives have higher probabilities of being consulted when the patient associates the illness with the stomach (0.17), soul (0.19), breast (0.27), or reproductive organs (0.16), see Table 7.

Similarly, the probability that a specialist will be consulted varies according to the feelings associated with the disease. The midwife will be consulted to a greater degree in the case of a disease that inspires a great deal of fear (0.13) than when that disease inspires shame, cravings, and pain. The probability that a healer will be consulted is also much greater in the case of diseases that inspire a great deal of fear. Table 8 shows these probabilities by attribute and specialists.

These procedures lead to the following generalizations regarding specialists:

- a. Physicians see more women with diseases associated with blood and reproductive organs that inspire fear and produce a feeling of coldness than women suffering from other illnesses.
- b. The personnel of the health centers treat more women and children with illnesses of the blood and skin and those associated with acute pain than women and children suffering from other illnesses.

- c. Healers treat mostly children with illnesses associated to stomach pains and problems of the soul that inspire a great deal of fear and pain.
- d. Midwives mostly treat women but also children with illnesses associated with the "stomach", sadness, the reproductive organs, and to a much lesser degree to the soul, that inspire a great deal of fear but cause little or no pain.

These data suggest that the specialists in states and conditions of the human body and mind may be subdivided into the following groups: (1) the specialists that deal with common illnesses, that is, those pertaining to the body itself; (2) those that deal with illnesses pertaining to the spirit or the soul even when physical manifestations are present; and (3) those that deal with non-pathological transitional states, such as being pregnant, menstruating, and being in love. Medical and paramedical personnel belong to the first kind; healers to the second, and midwives to the third.

But illnesses, as seen above, are complex cultural entities which include in their structure attributes of a diverse kind, such as magic, physical pain, and emotions. This seems to be a very important reason why clear-cut decisions in the consultation of specialists are difficult for the patient and the family. Alternative and even simultaneous consultation with various kinds of specialists is, in effect, a common pattern. Pregnancy, sharing many attributes of illnesses, is also subjected to this alternative treatment by specialists. She usually consults first with a midwife. She may consult with a healer if pregnancy

causes backache believing something is wrong with her lungs. She may go to a health center for food supplementation and return to the healer because emotionally she feels disturbed. She may visit a private physician if she has serious problems associated with her breasts or reproductive organs. She will usually return to the midwife for delivery.

Since common diseases are primarily treated by medical personnel, the fact that they are occasionally treated by the midwife is indicative that they have "strong" attributes that pull the actor away from the culturally normal way of acting. These strong attributes are part of the definition of pregnancy among those people and consequently largely explain the preference for treatment by the midwife during pregnancy. According to the findings of the study, adolescent pregnancy is viewed as:

A unique temporary condition characteristic of women at the threshold of status change with a body allocation in the "stomach" associated to reproductive organs; causing feelings of sadness, with a strong association to the soul or spirit that inspires a great deal of fear, but causes little or no pain.

VI. Conclusions and Recommendations.

The prenatal care Indian adolescents are receiving is inadequate. It comes very late in pregnancy and it is often restricted to manual detection of the position of the child to ensure normal delivery. The programs that the Ministry of Health have implemented to train local midwives and to involve them in complementary programs with the health centers are relatively successful in some of the communities studied. For instance some of the midwives refer their patients to the public health centers

for food supplementation, vaccination, and even laboratory testing. However, there appears to be in all the communities important incongruencies between the services offered by the Ministry of Health and private clinics on the one hand, and the knowledge, beliefs, and attitudes people have about pregnancy and delivery on the other. These incongruencies limit the success of these efforts and are based on the following.

1. Adolescents have a very limited knowledge about pregnancy and the existing Western and non-Western services offered in their own communities.
2. Adolescents have a very limited knowledge about the physiological processes involved in pregnancy.
3. The link between mother and child is primarily conceived as one of an emotional and spiritual nature. On the physical side the mother is viewed, to a large extent, as a simple carrier.
4. The absence of physiological and biological knowledge leads to a mechanistic conception of pregnancy. For instance jumping, washing, and being raped are hazardous to the child because it may change his or her position. Walking is not recommended because the weight of the child causes fatigue. The fact that there are few food restrictions and recommendations during pregnancy in these communities is consistent with this mechanistic view of pregnancy.

5. Pregnancy is viewed as a common normal event which is only natural in a country with one of the highest fertility rates in the continent. This implies, in the mind of these people, no need for special care.
6. Pregnancy is conceived as a waiting period. The adolescent is at a social and physical threshold in which there are few prescribed and prohibited activities. Delivery, and not pregnancy is what is important. Delivery not only implies pain and danger, but also a re-entrance into the normal social world through the acquisition of a new status by becoming a culturally defined adult woman.
7. Pregnancy is characterized by considerable fear and expectation toward delivery apparently based on lack of knowledge and adequate sources of consultation and emotional support.
8. The mother and mother-in-law play an important role in the sexual education of the adolescent, in the decisions made throughout pregnancy and in the medical treatment the girls receive. However, the sexual education that the girl receives is very deficient because the mother's and mother-in-law's knowledge is based on tradition and lags behind the knowledge otherwise available in the society at large. The usually strained inter-personal relationship between mother and daughter-in-law seems to limit still further an adequate performance of the mother-in-law's tutorial role assigned by society.

9. The lack of knowledge about pregnancy, the emotional-spiritual, and mechanistic conception of it; the fear and expectations associated with delivery, the state of being at a social threshold, and the lack of adequate sources of consultation and emotional support are powerful factors inducing minimal and late prenatal care.
10. The characteristics of gender, allocation, and feelings that characterize commonly recognized illnesses are important factors in the choice of the health specialist or practitioner consulted. The choice of the midwife in the case of pregnancy (strongly associated to the female gender, the abdomen, the breast, the soul or spirit, and given feelings and emotions) seems natural enough given the established cultural patterns.
11. Since in most of the communities studied there are no delivery facilities in the public or private health centers, selecting a health specialist for prenatal care other than the midwife, means that the adolescent will be attended by different specialists during pregnancy and delivery.
12. Midwives are also preferred to other specialists because they are always available, and their services are inexpensive as opposed to the private physician.

Based on the results of this study, the following specific recommendations are made to increase the coverage and quality of prenatal care programs.

1. A multitarget program should be built directed toward (1) Indian adolescents; (2) influential adult women, and (3) midwives.

Efforts should be made in this program to strengthen the adolescent's knowledge on the physiological processes and needs associated to pregnancy. A limited number of these adolescents could be reached through the formal educational system. For the rest of them, new community activities involving adolescents should be developed.

In these societies where sexual matters are embodied with much secrecy and shame, the mother and mother-in-law offer one of the few channels by which adolescents can be reached. Consequently, it would be erroneous to dismiss them because of their present limitations as sources of knowledge and emotional support. Communal programs should be developed aiming not only at educating these women on prenatal care, but also involving them in finding better ways of transmitting pertinent information to their daughters and daughters-in-law.

The local traditions and the national system seems to have assigned the midwife important delivery responsibilities. However, the national system provides the midwife with limited prenatal care education and responsibilities. The educational program proposed should enrich the vernacular knowledge of the midwife regarding prenatal care, enabling her to apply Western techniques and taking a more active part in the national health system.

2. Some of the aims of this multitarget program would be to create the conception that pregnancy is a well defined state of being with both biological and emotional needs. The rich emotional and social contents associated to pregnancy by these populations should be preserved while enriching the biological knowledge. The program should also be directed at reducing the amount of fear and anxiety the adolescent feels through adequate information about pregnancy and delivery. The program should also provide abundant information about the health alternatives existing in the communities to facilitate a free and rational choice. Emphasis should be placed on the convenience of consultation with a specialist and on adoption of adequate health habits from the very first months.
3. An effort to create in the public a unitary conception of prenatal care and delivery facilities should be made. This could be accomplished partially by the educational program described above and by assigning more prenatal responsibilities to the midwife. But a unitary conception could not be developed without a greater involvement of medical and paramedical personnel of the public and private clinics during delivery and the postpartum period. This cannot be fully accomplished without improving the clinics by increasing the medical and paramedical personnel and creating laboratory and bedding facilities in many of the communities.

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MAPS, FIGURES, AND TABLES

Map 1. Geographical and Linguistic Distribution of the Communities Studies.

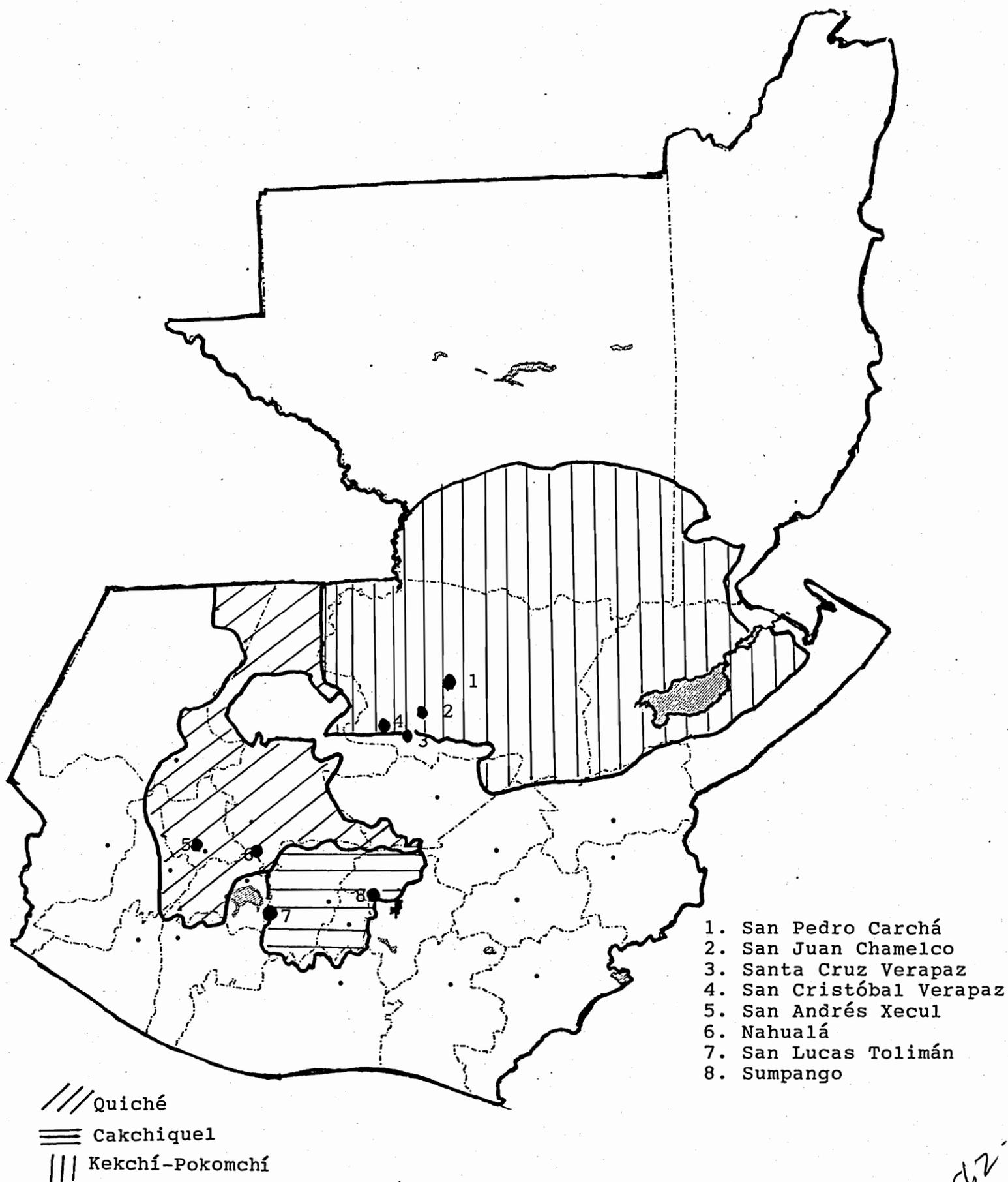


Figure 1. Average Associational Distance of Feelings Related to Pregnancy.

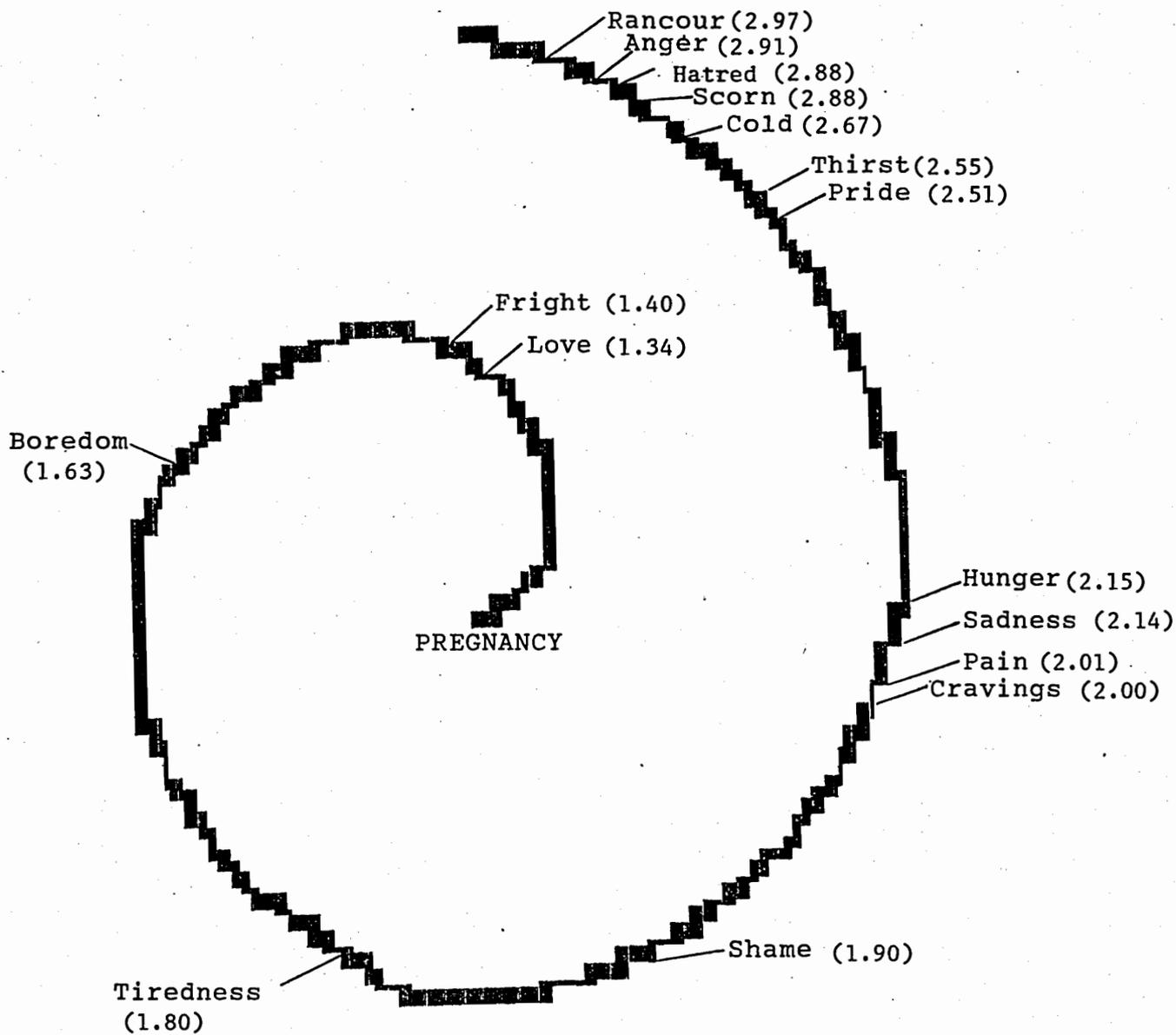
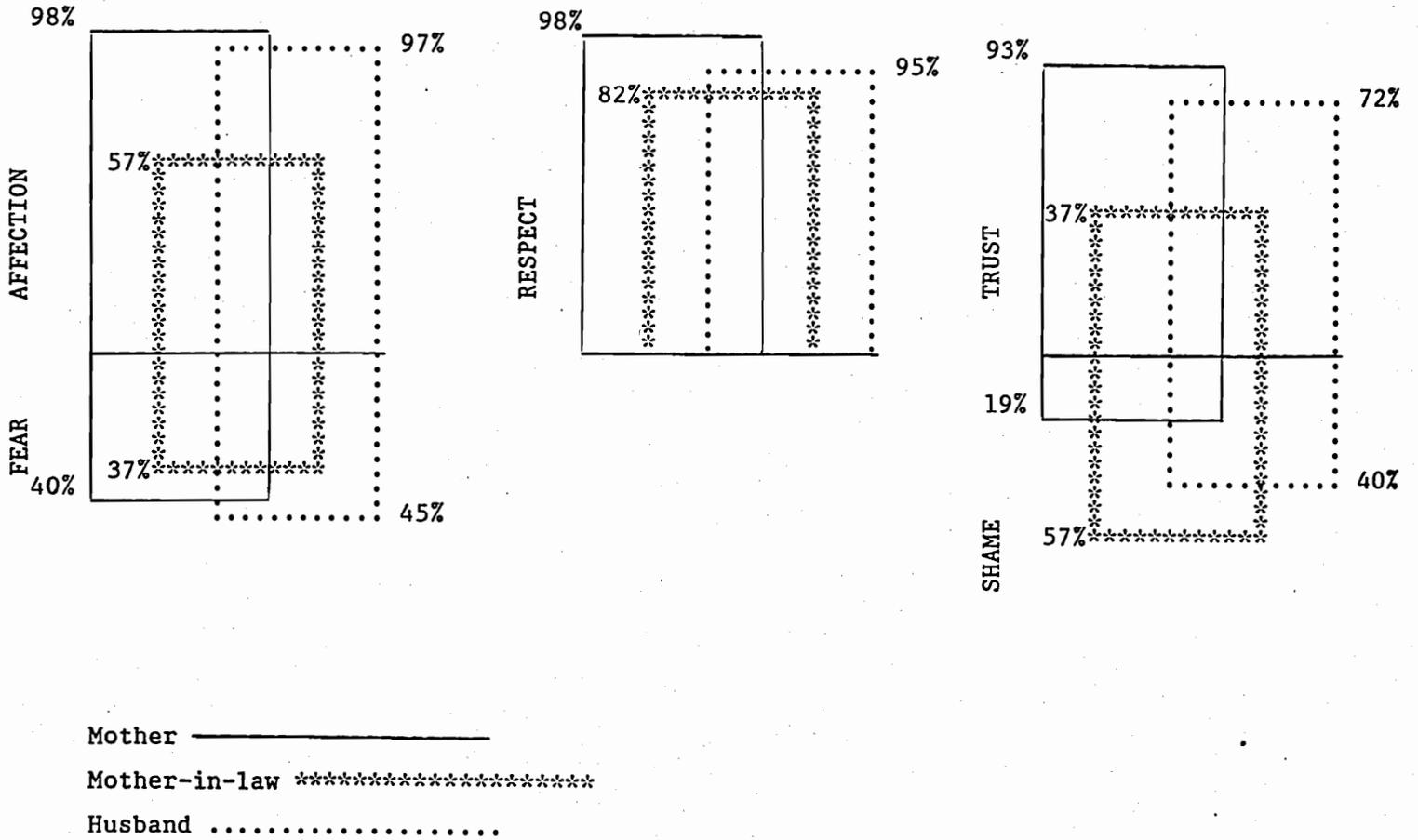


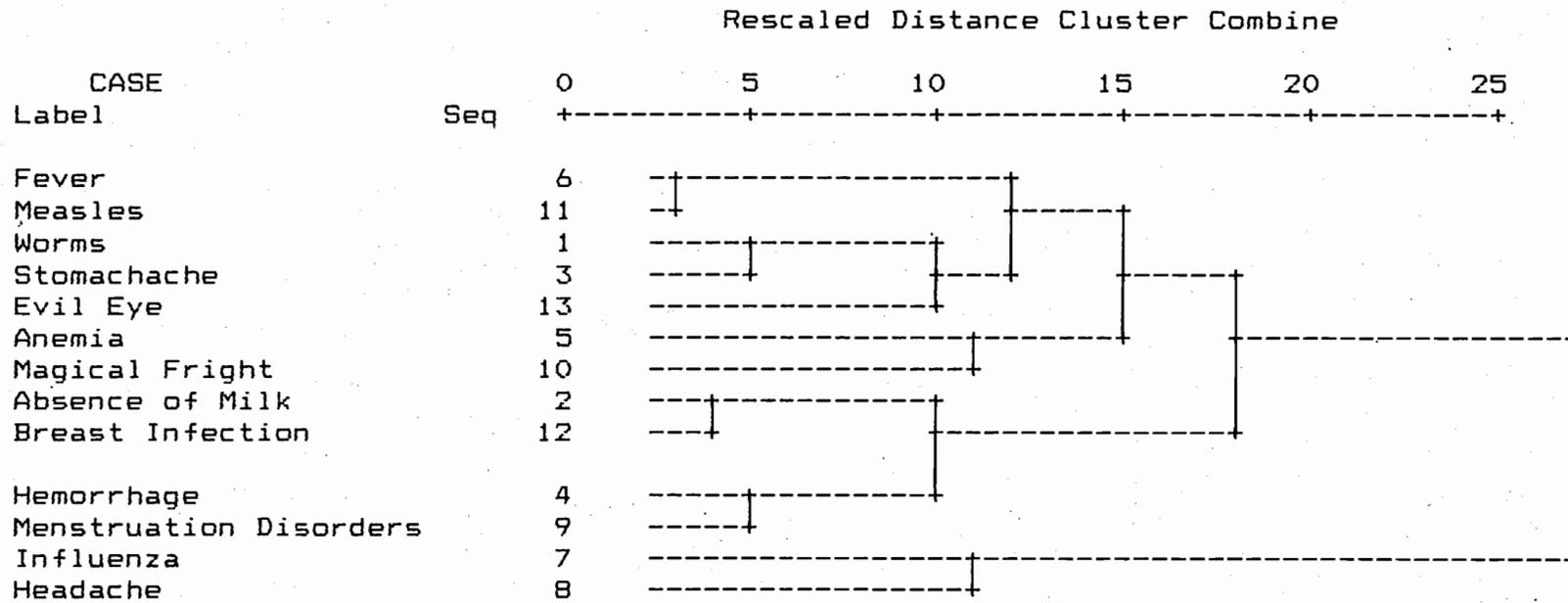
Figure 2. Percentage of Girls Feeling Much Affection, Trust, Fear, Shame, and Respect for Their Husband, Mother, and Mother-in-law.



SPSS/PC+

Figure 3. Cognitive Distance Between Thirteen of the Most Common Illnesses.

Dendrogram using Complete Linkage



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Table 1. Actual Number of Interviews by Community, Age Group, and Health Personnel.

GROUP	COMMUNITY	NUMBER OF INTERVIEWS				
		ADULTS	ADOLESCENTS	MIDWIVES	HEALTH PERSONNEL OTHER	TOTAL
Quiché	San Andrés Xecul	31	34	4	1	5
	Nahualá	34	40	7	3	10
Cakchiquel	Sumpango	44	57	4	2	6
	San Lucas Tolimán	45	57	2	4	6
Kekchí-Pokomchí	San Juan Chamelco San Pedro Carchá	38	53	-	-	-
	San Cristobal Verapaz y Santa Cruz Verapaz	25	41	1	-	1

Table 2. Percentage of Adolescents from the Second to the Ninth Month of Pregnancy Who Know Selected Symptoms Occurring at Various Stages of Pregnancy.

MONTH IN WHICH THE SYMPTOM OCCURS	MONTH OF PREGNANCY (Number of Months Pregnant when Questioned)						
	2	3	4	5*	7	8	9
1	64	58	83	69	86	60	100
2	64	92	100	75	71	60	100
3	↑	83	100	75	57	60	100
4	↑	↑	100	87	86	60	100
5	↑	↑	↑	87	71	60	100
6	27	37	↑	↑	86	60	100
7	↑	↑	17	↑	86	60	100
8	↑	↑	↑	19	↑	60	100
9	↓	↓	↓	↓	55	20	100

* Very few cases of adolescents in the sixth month of pregnancy were found in the sample.

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Table 3. Percentage of Adolescents Who Visited a Health Care Provider by Type of Relative Accompanying Them on First Visit and Trimester of Pregnancy.

	PREGNANCY TRIMESTER			Total No. of Cases
	First	Second	Third	
Alone	33	67	--	3
Mother-in-Law	43	46	11	35
Mother-in-Law and Mother	59	32	9	32
Husband	80	20	--	5
Mother and Husband	50	50	--	2

Table 4. Percentage of Women Believing Pregnancy is a Matter of More, Equal, or Less Concern than Four Commonly Known Illnesses.

ILLNESSES	PREGNANCY IS OF MORE, EQUAL, OR LESS CONCERN THAN			NO INFORMATION
	MORE	EQUAL	LESS	
Fever	56	25	15	4
Diarrhea	57	28	8	7
Common Cold	74	20	1	5
Magical Fright	59	27	9	5

Table 5. Probabilities of Recurrence of Specific Illness Attributes and Particular Behavioral Units (Sample).

ILLNESS ATTRIBUTES	BEST TREATMENT					
	DRINK SOMETHING	INJECTIONS	APPLY SOMETHING	RUB	EXPEL	PRAY
ILLNESS ALLOCATION						
Blood	.43	.29	.08	.04	.03	.04
Skin	.42	.24	.10	.06	.04	.08
Head	.70	.09	.10	.04	.01	.01
Stomach	.65	.05	.10	.10	.02	.02
Lungs	.50	.00	.08	.00	.02	.10
Legs and Arms	.36	.10	.05	.05	.05	.15
Soul	.55	.05	.06	.03	.10	.02
Breast	.32	.21	.07	.12	.01	.01
Reproductive Organs	.23	.29	.47	.02	.00	.01
GENDER ATTRIBUTES						
Women	.61	.75	.05	.07	.02	.02
Men	.75	.26	.02	.02	.02	.02
Children	.69	.20	.08	.06	.05	.05
FEELINGS & EMOTIONS						
Fear	.50	.47	.41	.64	.62	.33
Shame	.34	.34	.31	.20	.27	.38
Cravings	.10	.09	.21	.11	.09	.10
Pain	.11	.17	.00	.07	.05	.03
Cold	.62	.03	.03	.04	.05	.03
Hunger	.60	.04	.03	.04	.05	.07

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Table 6. The Probability that a Specialist will be consulted when the Patient is of a given Sex and Age.

	WOMEN	MEN	CHILDREN
MIDWIVES	.13	.06	.12
HEALERS	.05	.06	.22
HEALTH CENTERS	.43	.46	.42
PRIVATE PHYSICIANS	.39	.42	.24
TOTAL	1.00	1.00	1.00

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Table 7. The Probability that a Specialist will be consulted when the Illness affects a Particular Body Part.

	BLOOD	SKIN	HEAD	STOMACH	LUNGS	ARMS AND LEGS	SOUL	BREAST	REPRODUCTIVE ORGANS
MIDWIVES	.03	.01	.00	.17	.00	.00	.19	.27	.16
HEALERS	.11	.09	.10	.33	.05	.25	.25	.11	.03
HEALTH CENTERS	.54	.65	.78	.42	.74	.69	.35	.30	.36
PRIVATE PHYSICIANS	.32	.25	.11	.08	.21	.06	.22	.32	.45

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Table 8. Probability that a Specialist will be Consulted when the Illness Inspires given Feelings, Attitudes, and Emotions.

	FEAR	SHAME	CRAVINGS	PAIN	COLD	HUNGER
MIDWIVES	.13	.09	.10	.09	.06	.00
HEALERS	.16	.10	.13	.13	.09	.04
HEALTH CENTERS	.40	.51	.64	.61	.58	.70
PRIVATE PHYSICIANS	.31	.30	.13	.17	.27	.26

APPENDIX

Evaluation

We consider that almost the totality of the tasks proposed (maybe over 90%) were adequately completed. In addition, the experience was of great educational benefit for the Indian women who acted as field interviewers, and generally, for the professionals and semi-professionals who participated. Although some of the findings could have been anticipated by members of the staff with experience in the region, many of them represent, in a very true sense, new and sometimes unexpected findings with important implications for maternal and child care.

As is often the case in studies involving fieldwork, unanticipated events delayed the completion of some of the tasks. In this study two main difficulties were encountered, one regarding fieldwork personnel and the other, the adolescent sample. During the first phase of the study several groups of field workers were trained in the use of the instruments, but after trials in the field, they were suspended because of irresponsibility and dishonesty in carrying out fieldwork. Naturally, this caused some delays and additional expenses since new teams had to be trained.

Anticipating difficulties in setting up adolescent samples in the communities, preliminary lists of adolescents were constructed during the first phase of the fieldwork by visiting the civil registry, the health centers, and by interviewing adult women. However, we found that health care centers generally have inadequate registers and the civil registry's marriage listings do not provide addresses. Visiting local schools for listings of the siblings of married adolescents--as a forseen alternative in case the other two would have proven inadequate--could not be put in practice due to an early suspension of school activities in the preliminary phases of data collection.

These problems were compounded by the comparatively smaller size of the Quiché communities, and, consequently their small adolescent population; furthermore, many women are engaged in commercial activities outside their town or community and are absent from their homes for long periods of time.

Census data indicated that the size of the Kekchi-Pokomchi communities should have provided the necessary number of married adolescents. However, possibly due to temporal migrations, change in age of marriage, higher educational aspirations, and a different age distribution, we were able to secure only about half of the sixty adolescents required. This forced a selection of two other communities to increase the number of subjects.

Although an expansion of the actual sample would not likely produce substantial modifications in the findings corresponding to the whole sample, the obstacles above mentioned considerably limited the comparison between towns proposed in the research design. Inferences regarding change in adolescent pregnancy and prenatal care as urbanization and westernization increase would have to be restricted to the Quiché and Cakchiquel regions.

Dissemination of Results

At the present time we are preparing the article entitled "Prenatal Care among Indian Adolescents in Guatemala" to be submitted to one or more of the following journals:

1. Social Science and Medicine (first choice)
2. Adolescents
3. International Journal of Adolescent Medicine and Health

The article will be published under the authorship of Alfredo Méndez-Domínguez and Marianne de Quesada and will give a general perspective of the problem. We are considering the publication of at least one other article on a specific topic covered by the study.

By invitation of the United States Mission in Guatemala we will be presenting the results of the study in a seminar to be held on September 16, 1989.

ANNEX

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