IEC NEED-DETECTION SURVEY ON REPRODUCTIVE HEALTH IN SIX ETHNIC GROUPS IN MEXICO

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INOPAL III

FINAL TECHNICAL REPORT

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IMSS - Solidaridad[1] / INOPAL III, Population Council

1 Introduction

1 1 Antecedents

The Indian populations in Mexico show the highest fertility, maternal and infant mortality rates in the country According to the latest estimations, global fertility among Indian populations amounts to 4 1 infants per woman, whereas the national average in 1997 was 2 8 infants per woman The maternal mortality rate among Indian populations is 6 1 deaths per 100,000 births, as compared to the estimated national average in 1995 that was 4 8 deaths Similarly, the estimated perinatal mortality rate is 55 1 deaths per 100,000 births, in regards to the national average, which is 29 deaths

These indicators show that the Indian groups are lagging behind 20 to 30 years, as compared to the rest of Mexico's population For instance, the national fertility average in 1976 was 4 6 children per woman, which is similar to the Indian fertility rate in 1997

Reproductive health indicators among Native populations in Mexico are comparable to those currently prevailing in some countries in Africa and the least developed countries in Latin America For example, according to the latest demographic surveys available, Haiti's current fertility rate is 5 0 children per woman, Bolivia's is 5 8, Nigeria's is 5 9, and Zaire's is 6 4 children per woman

On the other hand, demographic research indicates that the younger the couple is when they get married and when they begin childbearing, the greater the fertility at the end of a woman's reproductive life will be The National Family Planning Survey, carried through in 1997, shows that the average number of children at the end of the reproductive life of women who began childbearing under 18 is 5 9, as compared to 4 7 among those who got married between 18 and 20, and 3 5, among those above 20

The National Population Program has prioritized the provision of care to young couples, who generally get started on contraception only after having had two or three children In Mexico, a large proportion of the population uses contraceptive methods to end reproduction, not to space out pregnancies According to the NPP, the use of contraceptive methods among the young population of the country has to be reinforced to delay the first pregnancy and to space out births This research work is inscribed in this priority

From a programmatic point of view, the significance of this study is in that it analyzes the situation of populations whose fertility patterns impact greatly the demographic growth of the country The National Population Program recognizes that the demographic growth is largely due to a lack access to basic reproductive health and family planning services for rural and native populations The contribution of Indian populations to the demographic growth of the country is proportionally larger than that of any other group

[1] Mexican Institute of Social Security – Solidarity Plan

1 2 Problem Statement

The main problem to develop materials and communication strategies for Indian populations is the lack of detailed knowledge regarding their information, education and communication needs Due to the urban bent of the surveys performed to date and the difficulties found in reaching the most scattered populations in Mexico, there is a generalized lack of information about what these populations know regarding reproductive health, and what their attitudes and intentions in respect to family planning are What are their expectations concerning the size of their families and the future of their children? How do Indian groups in Mexico view family planning? Are they knowledgeable about modern contraceptive methods? What do they know about contraceptive methods and reproductive health in general?

It is necessary to differentiate between problems of 1) information, which refer to the knowledge on reproductive health topics, 2) education, which refer to beliefs, values and practices related to the topic, and 3) communication needs, which include messages, channels, data emission and transmission in general

It is also important to distinguish between the IEC needs regarding family planning and contraception Family planning refers to decisions on when to marry, family size, place of residence, schooling level of the children, employment The use of contraceptive methods is an instrument of family planning

An additional problem is that parents condition and largely determine their children's knowledge regarding sexuality and reproductive health There is a lack of knowledge about the information, attitudes, beliefs, preferences, desires and practices of the parents and how they influence the young population's behavior

As a consequence of the generalized lack of knowledge there is regarding native populations, the IEC strategies addressed to these groups showed deficiencies in matters such as channels, messages, structure, information and objective During field visits to Indian locations, it is frequent to find IEC materials that have been prepared basically for urban populations It is also common that those materials that seek to inform and educate on reproductive health bring forth wrong interpretations or misconstructions that remain as myths and beliefs among native peoples

2 Objective

To solve the above mentioned problems, the Community Action Direction of the IMSS-Solidaridad decided to carry out a survey with the following objectives

1) To collect information about family planning and reproductive health-related knowledge, attitudes, intentions and practices among young Indians and parents

2) To develop pertinent IEC strategies in matters of sexual and reproductive health for young Indians, taking into consideration the local cultures

The questions we sought to answer were What are the perceptions, knowledge and practices concerning sexuality and reproduction among young Indians? What IEC needs

in regards to sexual and reproductive health do they have? How can these needs be fulfilled?

To achieve this objective IMSS-Solidaridad decided to survey the knowledge, attitudes and practices on reproductive health, in the six ethnic groups with the largest population in the country[2] The purpose of the survey was to collect useful data to support the activities of IMSS-Solidaridad's educational communication model, as well as to help design operational strategies that allow the native populations to have access to reproductive health services, in a culturally acceptable fashion

IMSS-Solidaridad will report the results of this survey to Community Action Supervisors and Promoters (in Spanish, SACs and PACs) and will develop messages, reproductive health strategies and messages, according to local preferences and practices The outcome diffusion has been scheduled as one of the activities of the Community Action Direction, in 1998

3 Methodology

3 1 Target population

The study universe of this investigation includes young men and women aged 12 to 19 The parents were interviewed, as it is impossible to design an action plan for adolescent populations, disregarding the opinions, preferences and behavior of the parents

According to the 1990 population census, there were 8 55 million speakers of an Indian tongue in Mexico, in 1990 8 37 million in "Indian households" and 1 78 million in "non-Indian households" Adolescents aged between 12 and 17 are estimated to make up 1 197 or 14% of this total This calculation includes 13,179 localities one hundred percent Indian, 4,359 partly Indian, and 26,680 which are considered as scattered Indian population According to this classification, there is a total of 44,218 Indian localities in the country

In accordance with the 1990 census data, concerning their population the main ethnic groups of the country are as follows

[2] This survey belongs to a more general research course, within which three types of studies were carried out (1) ethnographies, (2) focal groups, and (3) surveys As part of this general project, six ethnographies were performed in the same number of localities 51 focal groups in 28 Indian localities and a survey in 70 Indian communities

ETHNIC GROUP	POPULATION AGED 5 YEARS AND ABOVE	PERCENT IN RESPECT TO THE NATIONAL TOTAL
Mayan	713,520	8 3
Mixtec	386,874	4 5
Nahuatl	1,197,328	14 0
Otomi	280,238	3.2
Tzeltal	261,084	3 1
Zapotec	403,457	4 7
Total	3,242,501	37 9

3 2 Sample size estimation

To determine the sample size, the Cox method for ratio sampling in two stages (Cox 1971) was used As per this procedure, the sample size can be estimated through the following

$$n_0 = t^2 PQ / d^2 = PQ / V$$

and $$n = n_0 (1+(n_0-1) / N)$$

Where

$V = d^2 / t^2$ is the desired variance of the sample ratio,
d is the desired error level
P is the sampling ratio, which in this case can be the proportion of young Indians that know contraceptive methods
t is the t-Student value, corresponding to the confidence interval α
α is the occurrence probability of d, that is Pr(|p-P|>= d) = α, in other words, α is the desired confidence interval

The standard error (sample variance) for the sample in two stages is

$v(y) = s1 / n = \Sigma$ (y-y) / n(n-1) where y_1 are averages per units

In this case, the sampling stages are the following
1) Locality sampling
2) Individual sampling, within the localities

The meaning of the above equation is that the value estimators for the population (universe) are not directly estimated from the sample total but considering the sample structure namely a weighted average of the variations between the primary sampling units

In this case we chose

d = 0 05
t = 2
α = 0 05

and taking into consideration that the fraction of the population that knows of contraceptive methods is unknown among the native groups, we chose p = 0 5 to maximize the sample size

$n_0 = (4)\ (0\ 5)\ (0\ 5) / (0\ 0025) = 400$

On average, among the ethnic groups analyzed N = 820 Therefore

$n = n_0 / (1+(n_0-1) / N) = 400 / (1+(399/820)) = 400 / (1+0\ 487) = 269$

Therefore, we estimated a sample size of 269 youngsters per ethnic group Considering a total of six ethnic groups in the study, 1,614 (269 x 6) youngsters and 1,614 parents were interviewed

The estimated sample size is a total of 3,228 interviews, without including the non-response margin For fieldwork purposes, a 15% non-response had to be added to the estimated sample size, in order to expect (3,228 x 1 15) 3,712 people interviewed It was possible to expect a much greater non-response margin among the parents, due to the fact that we dealt with a mobile population, which was difficult to interview under the conditions required for fieldwork

Summarizing, the sample size was estimated from an average population of 14%, ages ranging within the study limits, an error level of 0 05, a confidence interval of 90% and a non-response margin of 15%

3 3 Sample Selection

Individuals were randomly selected in two stages

1) Locality selection with odds ratio proportional to their population sizes From the data available at IMSS-Solidaridad, the number of populations in the communities that are provided care by this institution were identified and the localities to be visited with odds ratio proportional to their sizes were selected

2) The second stage consisted in the selection of adolescents from IMSS-Solidaridad's community censuses, with a systematic interval The mother or the father of the selected adolescent was interviewed

It is worth noting here that this selection procedure is possible only from IMSS-Solidaridad's data In this sense IMSS-Solidaridad's community censuses represent the most valuable information source our country has on the Indian communities, where this institution operates

3 4 Training and Supervision

For fieldwork purposes, nine Community Action Promoters were trained for three days in Mexico City, to supervise the interviewers After the training, these promoters pre-tested the questionnaire by applying ten such questionnaires in each work zone Some questions were corrected and modified so as to adapt them to fieldwork needs
In a second stage, 110 voluntary interviewers were trained to apply the questionnaire, select respondents and schedule fieldwork This training included the following (1) how to administer the questionnaires, in general, (2) how to apply the questionnaire to research, (3) activity programming, and (4) supervision procedure

The interviewers were secondary school students from the communities where fieldwork was performed Conjointly with the secondary school teachers of the communities, the IMSS-Solidaridad's promoters requested support from the best students, who were stimulated by granting them extra points to improve their school grades and giving them a document issued by the IMSS-Solidaridad, as a recognition of their services

The questionnaires were verbally translated to monolingual interviewees Fieldwork was carried through for 6 weeks, between May and June 1997

3 5 Obtained Sample

Out of the 3,720 expected interviews, we obtained 3,410 complete questionnaires

Table 1 shows the obtained sample size for each ethnic group, among youngsters and parents This table also shows that 508 interviews were completed in the Mixtec zone, 520 in the Zapotec zone, and roughly 600 in the rest of the selected areas

The sample includes approximately 53% of teenagers and the parents make up the remaining 47% In the Nahuatl, Otomi and Tzeltal areas alone, the parents' sample represents 40% of all the interviews For the rest of the cases, the sample achieved is 50% adolescents and 50% parents

The age ranges of the sample obtained include both young adolescents (between 12 and 15) and youngsters nearing adulthood (15 to 20), the parents' ages ranged from 20 to 50 This distribution of the obtained sample offers advantages, because it allows studying the differences between heterogeneous population groups

As per the data presented in Table 2, as many as 1,111 youngsters aged 15 to 19 were interviewed, being this the central group of the study This represents 33% of the total sample (3,410 completed interviews) Additionally, as shown in the same table, 751 (22%) interviews to young adolescents (aged 12 to 15) were collected As for the parents about 200 young fathers (aged 20 to 30) were interviewed, which represents 6% of the sample Also, 640 middle-aged parents, between 30 to 40 years of age (19% of all the interviews), and 709 individuals aged above 40 were interviewed

Table 2 shows that the above-described distribution is similar among the various ethnic groups of the study, exception made of the Nahuatl sample, where more young adolescents (under 15) were interviewed, and the Tzeltal sample, where relatively more

young parents (aged 20 to 30) were interviewed, in respect to the distribution of the whole sample

Regarding the interviewees' sex, the sample distribution includes approximately 47% men and 53% women, among all the age groups and the study ethnic groups As shown in Table 3, a total of 1,588 men and 1,807 women were interviewed For each ethnic group, this represents a minimum of 200 interviews of each sex, a'l ages included In the Nahuatl, Mixtec and Mayan zones, proportionally fewer men (37 to 39%) were interviewed, in respect to the total average of the sample For the Tzeltal group, proportionally more men (near 60% of the sample within this ethnic group) were interviewed, in regards to the total average

3 6 Validity and Reliability of the Sample

As part of the data purging process three types of errors were analyzed (1) non-response, (2) measurement errors, and (3) interviewer, edition, coding and tabulation errors

Out of the 3,720 interviews expected (according to the estimation of the sample size), there were 152 rejections because of absence and 78 questionnaires that had to be disregarded for not having very reliable information, as per the herein above described criteria This represents a 6 2% non-response Out of the 3,490 remaining questionnaires, 80 were identified as having been partly completed, that is to say, these questionnaires had reliable information in most of the sections but for some reason, they were missing one or more sections Therefore, the number of complete questionnaires available for analysis was 3,410

For the data reliability analysis, a quality control system was created from a congruence analysis of the individuals' answers Reliability indexes were estimated for the answers in each questionnaire section, by means of two criteria (1) Number and ratio of applicable questions answered per section, and (2) number and ratio of answers, out of range or incongruent, as per the expected response patterns A lack of congruence means, for example, that the interviewee says that he/she knows of contraceptive methods, but when asked what methods he/she knows about, they declare they know none The reliability quotients obtained for the main sections of the questionnaire are included in Appendix 1

To examine the external validity of the available data, the age and sex distributions obtained in the sample and the patterns shown in the IMSS-Solidaridad's communities censuses were compared The comparison between the obtained and the expected distributions is shown in Appendix 1 The graphs included therein show that the age and sex distributions obtained in the sample are statistically comparable to those observed in community censuses, which are the most complete and reliable source of information in Mexico

To examine the internal validity of the survey's data, the standard errors of the main variables were calculated among the ethnic groups analyzed This analysis approach is that standard errors have to be statistically the same among the sampled subgroups The statistics and the corresponding probing analysis are found in Appendix I

4 Questionnaire

A basic questionnaire was designed for youngsters aged 12 to 19 Said questionnaire was adapted so as to be applied to the parents, in order to obtain answers to comparable questions among both populations Samples of the questionnaires used in the survey are shown in Appendix 2

The contents of the questionnaire was as follows

a Identification entity, municipality, locality, sex, age, marital status, residence, schooling

b Expectations and intentions
What do you think is the single most important thing a woman has to achieve in her lifetime?

How old do you think a woman should be when she has her first baby? Why then?
Why is it important for women to have children? And for men?
Should the children take care of their aging parents?

c Knowledge on reproductive health
Do you know what menstruation or period is? What is it?

Do you know what sexually transmitted diseases are? Mention some of them How can you be protected against these diseases?
At what age can a woman get pregnant?
Is it necessary for the woman to have sexual relations several times to get pregnant, or can she get pregnant the first time she has sex?

d Knowledge and attitudes towards family planning
What do you think is the best age for children to start supporting themselves, help support their families, leave school to start working?
How many sons and daughters would you like to have?
Number of live children
Desire for more children and preferred sex
Desire for more children by the partner and preferred sex
What age would you like your sons to stop studying? Your daughters?
Knowledge on reproductive risk

e Knowledge, attitudes, intentions and usage of contraceptive methods
Spontaneous knowledge with the help of specific methods

Are you for or against using contraceptive methods? (Personal opinion including that of close relations)
Have you talked to your husband (wife) or partner about how many children you would like to have?
Do you believe that in the near future you or your partner will use remedies to prevent pregnancies? (For those who live together)
Use of contraceptive methods

At the end of the document, you will find the questionnaire applied to youngsters and parents, in Appendix 2

More specifically, the information, education and communication needs that the questionnaire sought to identify were the following

Among young adolescents, information levels concerning

a) Pregnancy and sexual relations
b) Risks of an early pregnancy
c) Risks of not spacing out pregnancies
d) Sexually transmitted diseases
e) Prejudice for or against particular methods
f) Doubts about the effectiveness of the methods

Among young married couples

a) Desire for having more children
b) Fatalism or lack of control of their own destiny
c) Preference for sons
d) Insecurity regarding old age
e) Overestimation of the economic value of the children
f) Denial of the importance of informing adolescents about contraceptive methods and family planning
g) Magic beliefs concerning medicine, in general, and the methods, in particular

Among men

a) Machismo
b) Gender relations
c) Traditional beliefs that assign a woman the responsibility for procreation without considering the reproductive risk
d) Tolerance and indifference to the lower status of women, within families and communities
e) Reference groups pressure (eg Friends, relatives)

Among couples

a) Lack of communication between the man and the women regarding the ideal size of their family, spacing out of children, contraceptive methods and family planning practice
b) Inequality in the couple's relationship

5 Results

5 1 Sample Characteristics

For analysis purposes the age and sex groups were divided into six segments so as to identify men and women aged 12 to 19 20 to 35 and above This division of the sample will allow showing the main differences found among the study groups and at the same time, keeping the sample large enough in subsequent statistical analysis

Table 4 shows that regarding the monolingual status in the study sample Additionally, this table shows that approximately a third of the interviewed sample (1,020 interviews or 31%) was monolingual In accordance with census data, the largest proportion of monolingual individuals is found among women, mainly among the older ones This fact can be confirmed through the outcome obtained, which shows that 43 and 46% of the women aged 20 to 35, and above 35, respectively, are monolingual Moreover, in the subsample of men above 35, a third was found to be monolingual

Table 5 indicates the schooling levels of the interviewees (years of schooling that have been completed at the moment the survey took place) Said levels were determined through two questions Firstly, the interviewee was asked whether he/she was studying at that moment If so, they were asked what grade If the interviewee answered that he/she was not studying, they were asked what grade they had completed This way, the information presented in table 5 refers to the schooling level the interviewees had achieved at the moment of the survey Due to the fact that youngsters aged 10 to 20 were included, there is a large percentage in the sample (1,312 cases or 38%) of individuals that are still studying

The results presented in table 5 indicate an average level of 6 5 years of schooling among the interviewees This is a high average, considering the national averages and marginality of the interviewed populations, for it means they have completed primary school However, a comparison between age and sex groups shows significant differences that confirm the expected trends in matters of the education of the interviewed groups Also, Table 5 shows that the average years of schooling among the elder group (35 and above) is 3 3 and 3 9 for women and men, respectively, and the average among women aged 20 to 35 is 4 35

It is important to highlight the differences found among the age and sex groups, as shown in Table 5 The resulting averages among the younger population, both for men and women, are high even when considering the national average As per these results, most of the interviewees have completed primary school and are studying secondary school The schooling level among youngsters is higher than that of young adults (20 to 35 years old) and is twice as high as the older adults' level The results in Table 5 also show an important change in the schooling levels of the younger generations The consequences of this marked difference among the age groups will be herein after analyzed

In regards to the marital status of the interviewed population, 1,549 interviewees were living with their partners at the moment of the survey This includes those whose marriages had been church-sanctioned, those who married at a registry office, and those who had been married under both authorities, and those who lived together without being married This represents that in 44 9% out of 3,454 interviews the required information was correctly coded At the moment of the survey, among adolescents, only 5 5% of the men and 10 3% of the women interviewed were living together with their partners Also among adolescents, 92 3% of the men and 88 5% of the women interviewed were single On the other hand, among the population above 20 years of age, the interviewees were mainly people living together or married Approximately 95% of the older men interviewed were married, and 90% of the women (above 20) were living together or apart from their partners at the moment of the survey Summarizing, 1,549 interviews were completed among married individuals or individuals living with their partners, and 1,776, among bachelors, mainly adolescents

5 2 Knowledge on Contraceptive Methods

According to the outcome of the survey, 65% of the interviewed population have heard from methods to prevent pregnancies This proportion is lower in as many as 34 percent points than the current national average (1997), as per the latest available surveys It is also comparable to the national level that prevailed 25 to 30 years ago, approximately

There are significant differences, from a statistical point of view, among the analyzed ethnic groups (Pearson $chi^2(5) = 62\ 8467$, Avg = 0 000) These results can be found in Table 6, which shows the number and proportion of individuals that claim they know contraceptive methods, in each analyzed ethnic group The groups with largest segments that claim to know contraceptive methods are the Mixtec, the Ñahñu, and the Mayan Among the Zapotec fraction, only 54 4% know of contraceptive methods, and among the Nahua and Tzeltal, 62 7% do Among the latter groups, a special effort has to be made to provide information about the availability of contraceptive methods Prioritizing said information is needed first among the Zapotec, then the Nahua and finally the Tzeltal segments

There are important differences among the age and sex groups as far as being informed about contraceptive methods is concerned A comparison of the knowledge on contraceptive methods between parents and adolescent children shows a generation gap and a clear trend towards increasing this information level among the younger generations These results are shown in Table 7, where the number and fraction of people who know methods to prevent pregnancies are presented by age and sex group, for each ethnic group

The results shown in Table 7 indicate that young adolescents, both men and women, are not knowledgeable, in general, about contraceptive methods In the Nahuatl group, 51 1% of the young men versus 58 8% of the women know of contraceptive methods Also within this group, older men are not familiar with contraceptive methods (47 2% claim to know of a method), as contrasted with the women, where the proportion of those who know of methods is relatively high (78%)

As for the Mixtec group, the adolescents (aged 10 to 19) show higher levels of knowledge (68 to 69% claim to know methods) than those in the Nahuatl group However, the results also show a lack of knowledge among the parents (66 to 70% of men and women above 35 claim to know about methods) As for the Zapotec and the Otomi groups, roughly 50% of the individuals are informed about contraceptive methods, although this knowledge is higher among women than among men interviewees One of the lowest levels of knowledge on methods was detected in the Zapotec group among men above 35, where only 40% of them have heard from family planing methods Concerning the Tzeltal group the surprisingly low level of knowledge among young adolescents (aged 10 to 19) is also one of the lowest levels identified in the sample

The largest fraction of people who know of contraceptive methods was identified in the Mayan group, where more than 80% of the population interviewed, for each age and sex groups are knowledgeable, exception made of the younger groups Nonetheless, the generalized knowledge regarding the methods among older groups, and the frequent occurrence of knowledge among young adolescents, allow classifying this group as the one with the highest levels of knowledge regarding contraceptive methods

An important aspect that requires further study is that in those groups where knowledge concerning methods is relatively low, there is a marked difference between the levels of knowledge of men and women, being exclusively the group of interviewees aged 35 and above the case in point Among the Nahuas, the Zapotecs and the Otomi, the percentage of men that claim to know of contraceptive methods is higher than that of women, that is to say, more men than women are knowledgeable about contraceptive methods In turn, men and women have comparable levels of knowledge among the Mayans and Mixtecs It is important to note that only among the Tzeltal group, the women's knowledge is greater than the men's

It could be possible to argue here that men have a tendency to declare that they do know of contraceptive methods, when in truth they do not However, with the questionnaire we used, it is possible to confirm if the interviewee truly knows about this topic, because one of the questions was, "What have you been told?" Several related questions were asked to exactly determine the extent of the knowledge of the interviewee The confirming data analysis indicates that the number of the interviewees that can mention contraceptive methods, despite having had claimed to know them, is relatively small and, in all cases, comparable to that of women Therefore, we can conclude that the previously presented percentages of knowledge adequately reflect the distribution of knowledge among men and women, in the interviewed groups

The differences as to information, education and parent-to-children communication needs are evidently associated with the schooling levels of each generation Table 7 shows these results As for the Nahua group, 51 to 59% of the youngsters claim to know contraceptive methods, as compared to 47 to 78% of the parents In this ethnic group, the fathers are those who show a lower level of knowledge Among the Mixtecs, in turn, the knowledge levels of parents and children are comparable, approximately 68% In the Zapotec group, the youngsters show higher levels of knowledge than those of older men, but lower than those of the mothers aged 35 and above A similar pattern is noted among the Ñahñu, whose women have the highest levels of knowledge, although it is less frequent that men know about contraceptive methods

Among the Tzeltal, it is frequent for men to be more knowledgeable about methods than women, and there is a significant difference between adolescents and parents too A relatively high number of young and adult women have not heard from family planning methods Said differences between adolescents and parents are also noticeable in the Mayan zone, where the fraction of parents who are informed about these methods is significantly higher than that of youngsters

5 3 Attitudes towards Family Planning

The following was included in the questionnaire "In your community, how many children does a big family have?" And then "How many children does a small family have?" The answers were recorded These questions sought to identify the social norms regarding family sizes in each of the ethnic groups included in the study Table 8 presents the average of the social norm concerning the average family size In the first column of the table, we can note that a big family is one with more than ten children For the Zapotec and Tzeltal groups, a big family has more than nine children, for the Mixtec, more than eleven On the other hand, the second column of Table 8 shows that a small family is one with three children The average size of a small family is 2 57 children for the Mayans, and 3 82 for the Tzeltal group

Afterwards, we would ask the following "There are people who are in favor of having few children and others are against it Are you in favor or against having few children?" (Question VI 3) The answer choices were as follows in favor, neither in favor nor against it, and against The answer "Don't know" was also allowed The results of the survey show that 70% of the interviewees claimed to be in favor of having few children, 21% were neither in favor nor against having small families, and only 4% were against it The remaining 5% opted for the "Don't know" option

There are significant differences between the identified attitudes in the ethnic groups analyzed These differences can be noted in Table 8, where results regarding attitudes, for each ethnic group studied, are shown It can also be noted in this table that almost 90% of the Nahua interviewees claimed to be in favor of small families, among the Mixtec, Zapotec, Ñahñu and Mayan, nearly 70%, including all the interviewed population (???) Conversely, among the Tzeltal, only half of the interviewees claimed to be in favor of small families Additionally, 20% of the members of this group declared not having a definite attitude towards the topic, their answers being classified as Don't know

It is worth mentioning that the fraction of the population that openly showed a negative attitude towards small families is low among all the study groups (Table 8) Taking into consideration the total of the sample, the percentage that said to be against small families was close to 4%, as previously mentioned This percentage is under 4% among the Nahua, Mixtec, Zapotec, Tzeltal, and Mayan As for the Ñahñu, who showed the largest population fraction with negative attitudes, 5 5% said to be against small families It is also important to highlight that in the Mayan group, only 2 5% of the population claimed to be against family planning

A thorough attitude analysis in the age and sex groups of each ethnic group shows that there are important differences, both in a social and a statistical sense, among the adolescents and the parents interviewed The fact that the attitudes of parents and children are similar has programmatic implications, which have to be considered for the design of information, education and communication strategies

In the Nahua group, almost 90% of the interviewees showed positive attitudes towards a family regarded as small in respect to their communities' parameters (2 78 children, on average) A thorough analysis shows that the attitudes among men and women adolescents are comparable to those of parents above 35 years of age From a statistical point of view, these differences are not significantly different from zero

Significant differences between parents and adolescents are noted among the Mixtec, Ñahñu and Tzeltal groups, in the sense that the adolescents more frequently show positive attitudes towards small families than the older group For the Mixtec, while 63% of the parents state that they have positive attitudes towards family planning, the corresponding proportion among adolescents is 77%, both for men and women The difference in attitudes is more evident among the Ñahñu It is estimated that 60% of the mothers and 63% of the fathers have positive attitudes towards family planning In turn 78% and 72% of men and women adolescents, respectively, are in favor of small families As for the Tzeltal, the differences found among parents and children can be attributed to the fact that a growing proportion of young women are showing positive attitudes, as contrasted with the corresponding fractions of older men and women (parents) and younger men In the adolescent group, 70% of the women and 46% of the men claim to have favorable

attitudes towards small families, whereas among parents, 56% of the men and 36% of the women do

Summarizing, the above mentioned findings show that in three ethnic groups, the Mixtec, the Ñahñu and the Tzeltal, adolescents have more positive attitudes regarding small families than the parents In the case of the Tzeltal group, young women are in the vanguard The reason may be the impact of their recent schooling (which was lower than that of the other ethnic groups)

Regarding the Zapotec group, the outcome shows that the parents and the adolescents have similar attitudes Here the women tend to show more positive attitudes than men, in each age group This is not a generalized pattern for among the Mayan, for example, fathers (79%) are more frequently in favor of family planning than mothers (66%)

5 4 Intrafamiliar Communication on Contraceptive Use

In the sample description, we mentioned that at the moment of the survey, among adolescents, 92% of the men and 89% of the women were single, which means that 7 6% of the men and 11 4% of the women were married Among those aged above 20, 90% were or had been married at one point in their lives (divorced, separated, widowed)

The following questions were asked to those who were married or living together, regarding contraception use as a family decision "Have you ever talked with your husband (wife) or partner about the number of children you would like to have?' (Question VI 4) "Have you ever talked about things or methods that keep you from having children?" (Question VI 5) "In your opinion, who is responsible for doing something to keep you from having children?" (Question VI 6) "Does your husband agree with the use of contraceptive methods or not?" (Question VI 7) And finally, "Do you think that you or your partner will use remedies to stop childbearing in the next years?" (Question VI 8)

The survey findings, as presented in Table 9, show that three fourths of those who are married say to have talked with their partners about the number of children they would like to have Said percentage is based on 1,042 valid answers obtained from 1,549 interviewees Almost 70% (714 out of 1,032 valid answers) say to have discussed contraception use with their partners, to prevent childbearing More than 80% think that both the man and the woman are responsible for deciding the number of children they will have Only 13% declared that the man is the one that has to decide the size of the family, while 5% say the woman should decide on this issue A comprehensive analysis of the answers shows that approximately 17% of men interviewees stated that the man has to decide the number of children, as compared to 10% of the women This finding is important because it shows that the general belief that among Indian groups the man is the one who makes these family decisions is wrong Also, the outcome shows that the general opinion is that both the man and the woman decide on the number of children There is indeed a relatively small group (between 10 and 15%) of the population where the man has the final word, but it is not possible to assert that this is a common practice among all the interviewed groups Based on a total of 1,046, the difference in opinion between sexes is statistically significant (Pearson $chi^2(2) = 10\ 5087$ Avg $= 0\ 005$) due to the fact that more frequently than women, men tend to think that it is they who have to decide on the family size

The following question probed into the opinion of the spouse or partner about contraceptive use The general findings show that almost three fourths (73 8%) of those married or living together (1,030 valid answers) answered they were in favor, whereas 17 8% were against contraception (in other words, they said their spouse disagreed with contraception) and 8 5% do not know their partners' opinion When considering the sex of the interviewee, the data analysis shows that the difference in opinions is relevant from a statistical point of view (Pearson $chi^2(2) = 10\ 1351$ Avg $= 0\ 006$) Based on a total of 1,028 valid answers, the findings showed that 21% of the women who were married or living with a partner declared that their spouses or partners were against contraceptive use, and that an additional 7% did not know what their spouses or partners think about it Among men, 14% asserted that their wives or partners were against contraceptive use, and an additional 10 5% did not know their spouses' or partners' opinion Concluding, more than one fourth of the men and women of the subsamples reported that their partners are against the use of contraceptive methods or that they do not know what is their opinion on this issue

In order to analyze the degree of agreement among couples about family planning, Table 9 compares the personal opinion of the interviewee and that which the respondent perceives his/her spouse has This table includes 847 answers that contain information about both types of opinion Thus, 667 persons are in favor of family planning, 156 have a neutral opinion about it, and 24 are against limiting family size Among those who say to be in favor of planning, 16 6% report that their spouses are against the use of contraceptive methods Conversely, among those who say to be against family planning, nearly 60% declare that their spouses think otherwise

A detailed analysis of these opinions, taking into consideration the sex of the interviewee, shows that men, apart from their opinion about family planning, think that their spouses are of the same opinion In turn, among women, it was more frequent to find different opinions between the spouses Approximately 60% of each group (men and women) say to be in favor of family planning and assert that their spouses are, too Between 12 and 14% of the interviewees affirm that, although they agree with family planning, their spouses disagree with contraception use Among the men who are in favor of family planning, 8 7% do not know the opinion of their spouses

It is important to mention that only 3% of the interviewed sample declared they were against family planning In this subgroup, approximately 50% affirm that their spouses have a favorable opinion regarding family planning

This analysis shows there is a need for education and information in family matters While the largest proportion (70%) of the interviewees assert that both they and their spouses are in favor of family planning, approximately 12 to 15% of the population that is in favor of family planning perceive that their spouses think otherwise An additional 10% do not have a clearly defined opinion in favor or against family planning, however, they perceive favorable attitudes in their spouses This subgroup of the population also has a need for information, education and communication

Schematically, the findings can be summarized as follows

INTERVIEWEE	SPOUSE	IEC NEEDS
In favor	In favor	Most of the population They require counseling on methods
In favor	Against or does not know spouse's opinion	Approximately 12-15% of the population They require an intrafamilial communication campaign. Common among women, but also among men.
INTERVIEWEE	SPOUSE	IEC NEEDS
Non-defined opinion	In favor	Approximately 10% of the population Individual counseling on the advantages of family planning
Non-defined opinion	Against or does not know spouse's opinion	5-7% of the population They require information
Against	In favor	2%. Similar for men and women.
Against	Against	A small percentage of the population 1% of the total sample and in each sex group

The opinions of the partner on family planning are an important factor to determine the intention of using contraception This was confirmed through secondary analyses that showed the percentage of people who expect to use or continue using contraceptive methods in the future, in accordance with the above described opinion groups According to these results, 68% of the families where there are favorable opinions on family planning, both by the man and the woman, expect to use or continue using contraceptive methods In the case of the couples where the respondent says to be in favor of family planning, but the spouse is against it, the percentage is as low as 30%, that is, these are cases where contraceptive methods are used in spite of the partner's disapproval Among those who showed a neutral attitude (neither in favor or against family planning), contraceptive use is more likely if the partner's opinion is perceived as favorable towards restricting family size In turn, if the respondent's attitude is not clearly defined and the partner is perceived as disapproving of family planning, the likelihood of contraceptive use is reduced Only 20% of those who showed neutral attitudes expect to use methods in the future, due to their partner's present reluctance to do so Finally, in spite of the negative attitudes towards family planning that some individuals show, a high ratio of this group expect to use contraceptive methods, mainly because their partners have a favorable attitude in that respect It is important to remember that this group has a small number of cases and that the results are subject to important variations

5 5 The gap between Knowledge, Attitudes, Intentions and Practices

The gap between knowledge, attitudes, intentions and practices (Westoff, 1995) refers to a phenomenon that has been observed in many countries, where broad sectors of the population who are knowledgeable about family planning and contraceptive methods, show positive (favorable) attitudes or predisposition towards small families and the

restriction of fertility They declare that they would like to use a contraceptive method, however, they are not currently using any This is what is known as a gap between knowledge, attitudes, intentions and practices

To measure the level of knowledge about contraceptive methods, the number and proportion who spontaneously or with help remember at least two modern contraceptive methods was determined To measure the attitudes or predisposition towards family planning, the individuals that showed the following characteristics were identified 1) the individual thinks that the ideal age to get married is 20 or above, 2) that the ideal age to have the first child is above 20, 3) that the ideal size of a family is 4 children or fewer (4 children may seem a high number but it is not, considering the current size of Indian families), 4) that family planning has personal and familial advantages, and 5) is in favor of small families

The intentions of using contraceptive methods were determined through a direct question "Do you think that in the future you will use or continue using contraceptive methods?" Finally, contraceptive use was defined as using or having used any modern method in the present or the past The individual was specifically asked about the use or non-use of each contraceptive method that the interviewee was knowledgeable of (see questionnaire)

The gap between knowledge, attitudes, intentions and practices can be clearly noted in the group of women aged 10 to 19, who are married or living with their partners at the moment of the survey This is the most vulnerable group within the Indian population, from the reproductive health perspective, because they are young women who are exposed to the risk of a pregnancy and, in most cases, have at least one child at this early age The survey's outcome shows that 73% of the women belonging to this age group and marital status know, at least, about 2 modern contraceptive methods, 46% have favorable attitudes towards family planning, and the same fraction expects to use or continue using contraceptive methods, but only 30% have used a method some time

The following graph shows that this gap between knowledge, attitudes, intentions and practices exists among older women, whether married or living with a partner In the case of women 20 to 34 years old, 81% know about modern contraceptive methods, 65% have favorable attitudes, 55% are willing to use methods, but only 45% actually use a family planning method The survey findings show that as for women aged above 35, 72% know about methods, 55% is in favor of family planning, 40% have the intention to use a method, and 37% have used one In this group, the gap between intentions and practices is relatively small (3%), but the gap between those who favor contraceptive use and actually use it is relatively large (55% vs 37%) These results are the reflection of a problem women think that they have to limit the size of their families, but they cannot perceive it as something they can achieve

6 Conclusions and Discussion

a) The results of the survey show that the so-called "gap between knowledge, attitudes intentions and practices" is very wide in the study populations In other words, there is a minimum level of knowledge about family planning and contraceptive use, there are favorable attitudes towards said use and, in lesser measure, there is the intention of using contraceptive methods However, there is a gap between the

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desire of planning a family and the actual possibility of doing it, which is still large in the groups that were analyzed

b) In spite of the cultural factors that affect the patterns of contraceptive use, a preliminary analysis shows that the main limiting factors of contraceptive use, among rural populations, are formal schooling levels (at schools) and access to supplies sources

c) The survey findings allow making some design recommendations for IEC campaigns, among Indian population, namely (i) audiences need to be segmented in at least ten identified demographic subgroups, (ii) IEC strategies should cater for the needs identified in the study, (iii) the format of this messages should be specified in accordance with the recommendations of the studies of focal and ethnographic groups

Part of the problem of reproductive health among Indian populations is that there are preconceptions among service providers, managers and donors regarding these populations' cosmovision For instance, some service providers are afraid of promoting reproductive health among Indians because they think that this message will be rejected Some argue that contraceptive use favors violence against women, inasmuch as men are against family planning out of fear of their women's infidelity Still others argue that religion would hinder the progress of these services

The above mentioned speculations call for a more serious empiric analysis that will allow for well-founded IEC strategies, addressed to these populations, as well as for the identification of general and specific information, education and communication needs, concerning family planning and reproductive health in general

Positive attitudes towards family planning (limiting family size) and contraceptive use were identified in 55 to 60% of the interviewees The negative attitudes in the remaining 40 to 45% of the population are associated with a lack of information on (i) the possibility of deciding on the number of children, (ii) contraceptive methods, (iii) the individual and familial advantages of limiting family size, and (iv) prejudice against contraception

Apparently, the reasons to be against contraceptive use are not religious in nature, but are associated with a lack of information on the way contraception works On the other hand, this problem is associated with a lack of knowledge about the way the reproductive organs work Mainly in adult populations, knowledge about reproduction is very limited, thus making it difficult for them to understand how contraceptive methods operate, namely, the pill and sterilization

It is important to emphasize here that the survey does not reflect that the magic beliefs and cultural barriers are an important hindrance to the availability of contraception for Indian populations Although many experts are of the opinion that myths and magic beliefs limit the understanding of native peoples, open questions seldom showed the presence of these elements

Table 1

Sample size by ethnic group

Ethnic group	*Youths*	*Parents*	*Total*
Nahuatl	373	226	599
Mixteco	270	238	508
Zapoteco	225	295	520
Otomi	297	302	599
Tzeltal	340	239	579
Maya	306	299	605
Total	1811	1599	3410

Ethnic group	*Youths*	*Parents*	*Total*
Nahuatl	62 27	37 73	100 00
Mixteco	53.15	46.85	100 00
Zapoteco	43 27	56 73	100 00
Otomi	49.58	50 42	100.00
Tzeltal	58 72	41 28	100 00
Maya	50 28	49.42	100 00
Total	53 11	46 89	100 00

Table 2

Sample size by ethnic and age group

	Age					
Ethnic group	***12-14***	***15-19***	***20-29***	***30-40***	***40-+***	***Total***
Nahuatl	200	233	21	80	65	599
Mixteco	132	128	21	78	149	508
Zapoteco	102	121	17	178	102	520
Otomi	127	166	14	112	180	599
Tzeltal	88	264	94	77	56	579
Maya	102	199	32	115	157	605
Total	751	1111	199	640	709	3410

	Per cent					
Ethnic group	***12-14***	***15-19***	***20-29***	***30-40***	***40-+***	***Total***
Nahuatl	33 39	38 90	3.51	13 36	10 85	100.00
Mixteco	25 98	25 20	4 13	15 35	29 33	100 00
Zapoteco	19.62	23.27	3 27	34 23	19 62	100.00
Otomi	21 20	27 71	2 34	18 70	30 05	100 00
Tzeltal	15.20	45 60	16 23	13.30	9.67	100.00
Maya	16 86	32 89	5 29	19 01	25 95	100 00
Total	22 02	32 58	5.84	18.77	20 79	100.00

Table 3 *Sample size by ethnic group and sex*			
Ethnic group	***Male***	***Female***	***Total***
Nahuatl	233	362	595
Mixteco	200	306	506
Zapoteco	255	265	520
Otomi	305	289	594
Tzeltal	369	208	577
Maya	226	277	603
Total	1588	1807	3395

Ethnic group	***Male***	***Female***	***Total***
Nahuatl	39 16	60 84	100 00
Mixteco	39 53	60 47	100.00
Zapoteco	49 04	50 96	100 00
Otomi	51 35	48 65	100.00
Tzeltal	63 95	36 05	100 00
Maya	37.48	62.52	100.00
Total	46 77	53 23	100 00

Table 4

Sample size by age group, sex and monolinguism

	Monolinguism		
Age/sex group	*Monolingual*	*Bilingual*	*Total*
Male 12-19	200	692	892
Female 12-19	259	682	941
Male 20-25	60	153	213
Female 20-35	151	193	344
Male 35-+	145	290	435
Female 35-+	205	239	444
	1020	2249	3269

Age/sex group	*Monolingual*	*Bilingual*	*Total*
Male 12-19	22 42	77 58	100 00
Female 12-19	27.52	72.48	100 00
Male 20-25	28 17	71 83	100 00
Female 20-35	43.90	56.10	100.00
Male 35-+	33 33	66 67	100 00
Female 35-+	46.17	53.83	100.00
Total	31 20	68 80	100 00

Table 5

Average years of education by age and sex groups

Age/sex group	*Average*	*Std. Dev.*	*Cases*
Male 12-19	8 67	11 08	922
Female 12-19	8 33	11 63	976
Male 20-35	5 73	7 3	192
Female 20-35	4 35	3 16	322
Male 35-+	3 96	7 85	502
Female 35-+	3 25	8 89	513
Total	6 5	10 07	3427

Table 6
Knowledge of contraceptivemethods by ethnic group

Ethnic group	*Knows*	*Don't know*	*Total*
Nahuatl	339	220	559
Mixteco	352	139	491
Zapoteco	302	253	555
Otomi	419	179	598
Tzeltal	313	194	507
Maya	412	161	573
Total	2137	1146	3283

Ethnic group	*Knows*	*Don't know*	*Total*
Nahuatl	60 64	39 36	100 00
Mixteco	71.69	28.31	100.00
Zapoteco	54 41	45 59	100 00
Otomi	70.07	29 93	100 00
Tzeltal	61 74	38 26	100 00
Maya	71.90	28.10	100 00
Total	65 09	34 91	100 00

Table 7

Knowledge of contraceptive methods by age/sex groups and ethnic group

Nahuatl

	Knows		*Don't know*		*Total*	
Age/sex group	*Cases*	*Per cent*	*Cases*	*Per cent*	*Cases*	*Per cent*
Male 12-19	87	51 48	82	48 52	48 52	100 00
Female 12-19	140	58 82	98	41 18	41 18	100 00
Male 20-25	10	71 43	4	28 57	28 57	100 00
Female 20-35	36	92 43	3	7 69	7 69	100 00
Male 35-+	17	47 22	19	52 78	52 78	100 00
Female 35-+	46	77 97	13	22 03	22 03	100 00
Total	336	60 54	219	39 46	39 46	100 00
Pearson chi2(5) = 33 444 pr = 0 000						

Mixteco

	Knows		*Don't know*		*Total*	
Age/sex group	*Cases*	*Per cent*	*Cases*	*Per cent*	*Cases*	*Per cent*
Male 12-19	61	67 78	29	32 22	90	100 00
Female 12-19	108	69 23	48	30 77	156	100 00
Male 20-25	7	77 78	2	22 22	9	100 00
Female 20-35	48	100 00	0	0 00	48	100 00
Male 35-+	67	69 79	29	30 21	96	100 00
Female 35-+	59	65 56	31	34 44	90	100 00
Total	350	71 57	139	28 43	489	100 00
Pearson chi2(5) = 22 044 pr = 0 001						

Zapoteco

	Conoce		*No conoce*		*Total*	
Grupo	*Casos*	*Por ciento*	*Casos*	*Por ciento*	*Casos*	*Por ciento*
Male 12-19	69	49 29	71	50 71	140	100 00
Female 12-19	65	53 28	57	46 72	122	100 00
Male 20-25	19	57 58	14	42 42	33	100.00
Female 20-35	57	72 15	22	27 85	79	100 00
Male 35-+	42	40 78	61	59 22	103	100 00
Female 35-+	48	64 00	27	36 00	75	100 00
Total	300	54 35	252	45 65	552	100.00
Pearson chi2(5) = 22 19 pr = 0 000						

Cuadro 2 continuacion

			Otomi			
	Conoce		*No conoce*		*Total*	
Grupo	*Casos*	*Por ciento*	*Casos*	*Por ciento*	*Casos*	*Por ciento*
Male 12-19	73	49 32	75	50 68	148	100 00
Female 12-19	110	78 57	30	21 34	140	100 00
Male 20-25	29	90 62	3	9 38	32	100 00
Female 20-35	39	95 12	2	4 88	41	100 00
Male 35-+	80	64 00	45	36 00	125	100 00
Female 35-+	85	79 44	22	20 56	107	100 00
Total	416	70 15	177	29 85	593	100 00
	Pearson chi2(5) = 60 6815		pr = 0 000			
			Tzeltal			
	Conoce		*No conoce*		*Total*	
Grupo	*Casos*	*Por ciento*	*Casos*	*Por ciento*	*Casos*	*Por ciento*
Male 12-19	102	55 14	83	44 86	185	100 00
Female 12-19	52	48 60	55	51 40	107	100 00
Male 20-25	57	81 43	13	18 57	70	100 00
Female 20-35	41	68 33	19	31 67	60	100 00
Male 35-+	44	77 19	13	22 81	57	100 00
Female 35-+	15	57 69	11	42 31	26	100 00
Total	311	61 58	194	38 42	505	100 00
	Pearson chi2(5) = 29 7228		pr = 0 000			
			Maya			
	Conoce		*No conoce*		*Total*	
Grupo	*Casos*	*Por ciento*	*Casos*	*Por ciento*	*Casos*	*Por ciento*
Male 12-19	64	53 78	55	46 22	119	100 00
Female 12-19	108	67 50	52	32 50	160	100 00
Male 20-25	17	80 95	4	19 05	21	100 00
Female 20-35	42	82 35	9	17 65	51	100 00
Male 35-+	62	82 67	13	17 33	75	100 00
Female 35-+	119	82 07	26	17 93	145	100 00
Total	412	72 15	159	27 85	571	100 00
	Pearson chi2(5)= 36 3865		pr= 0 000			

Table 8

Average size of large and small families and attitudes towards small families by ethnic group

Ethnic group	Average size of large families	Average size of small families	For	Not for not against	Against	Don't know	Total
Nahuatl	10 27	2 87	466	29	18	13	526
Mixteco	11 76	2 78	293	79	14	19	405
Zapoteca	9 75	2.99	334	135	17	8	494
Otomi	10 76	2 94	377	122	30	16	545
Tzeltal	9 46	3 82	218	116	14	84	432
Maya	10 88	2 57	294	111	11	20	436
Total	10 46	3 00	1982	592	104	160	2838

Ethnic group	Std. Dev large families	Std. Dev small families	For	Not for not against	Against	Don't know	Total
Nahuatl	2 74	1 70	88 59	5 51	3 42	2 47	100 00
Mixteco	3.04	1 60	72.35	19.51	3.46	4 69	100.00
Zapoteca	2 28	1 46	67 61	27 33	3 44	1 62	100 00
Otomi	2 69	1 52	69 19	22 39	5.50	2.94	100 00
Tzeltal	2 77	2 16	50 46	26 85	3 24	19 44	100 00
Maya	2 80	1.57	67 43	25.46	2 52	4 59	100 00
Total	2 72	1 72	69 84	20 86	3 66	5 64	100 00

Table 9

Own opinion and partner's opinion about small families

Persons in union

Own opinion	*Partner's opinion*			
	For	*Against*	*Don't know*	*Total*
For	509	111	47	667
Against	102	34	20	156
Don't know	14	8	2	24
Total	625	153	69	847

Own opinion	*Partner's opinion*			
	For	*Against*	*Don't know*	*Total*
For	76 31	16 64	7 05	100 00
Against	65 38	21 79	12 82	100 00
Don't know	58 33	33 33	8 33	100 00
Total	73 79	18 06	8 15	100 00