

CATHOLIC RELIEF SERVICES (CRS) - Nicaragua
CARITAS - Matagalpa

Final Base Line Report
"COLLABORATION FOR CHILD SURVIVAL"
PROJECT
Department of Matagalpa

Dr José Fco Mendieta López
Managua, March 1997

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BASE LINE SURVEY FINAL REPORT
"COLLABORATION FOR CHILD SURVIVAL" PROJECT
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CRS-NICARAGUA/CARITAS MATAGALPA

I INTRODUCTION

This report presents the results obtained in the Base Survey done in January for the project "COLLABORATION FOR CHILD SURVIVAL" which CRS-Nicaragua will promote together with CARITAS-Matagalpa

a Background

The project called "COLLABORATION FOR CHILD SURVIVAL" began in October 1996 and will extend over four years with financing from CRS and USAID. Its goal is to improve the health of 16,416 nursing infants and children under two years of age, as well as 13,784 women of reproductive age, in 98 communities of 4 municipalities of the Department of Matagalpa, through health education, strengthening the community network and supporting the interventions of the Ministry of Health regarding infant and maternal survival.

The Project is being implemented in the Department of Matagalpa, in the Muy Muy, Matiguás, La Dalia and Rancho Grande municipalities approximately 190 km from Managua, the capital of the country.

The territory in which the Project is being carried out is characterized as having a largely peasant population. From the economic point of view, the zones of La Dalia and Rancho Grande make up a coffee development pole complemented mainly by the cultivation of basic grains and cattle raising. The Muy Muy and Matiguás zone is largely a livestock development pole. The population is dispersed in the four municipalities, with few access roads or means of communication.

The inhabitants of these four municipalities have been subjected to social conflicts for over twenty-five years, leading to a deterioration of living standards. The highest poverty levels in the country and one of the highest percentages of infant and maternal morbidity and mortality are found in the Project site.

This territory was chosen to promote a Child Survival Project for the above-mentioned reasons. To achieve the proposed objective, the plan is to execute basic Child Survival strategies such as appropriate handling at the household level of illnesses prevalent in the zone (ADE and ARI), education for adequate nutrition, fostering of maternal care (TT, prenatal control) and attention at delivery by a health professional and/or trained midwife. All the interventions will be linked to a

strategy of education at the interpersonal, group and mass levels

The implementing institution is CARITAS-Matagalpa

b Objectives of the base line study

- 1 Establish base information about knowledge, practices and coverage of the maternal-infant health interventions in mothers with children under two years old
- 2 Make available an instrument that facilitates the administration of the project, and permits its tendencies, progress and programmatic decision-making to be observed

II METHODOLOGY

a The Questionnaire

The questionnaire used (Annex 3) contains 44 questions, it was designed to gather relevant information for the base information and indicator adjustment (DIP) regarding the Child Survival interventions

Translator's note What is the correct translation of DIP, since the Spanish is obviously not a literal translation of it?

The questions were developed taking as a base the project interventions and/or the generic KPC survey questionnaire developed by the Johns Hopkins University Child Survival Support Program (CSSP)

b Determining the Sample

The system for determining the sample size in a KPC survey is of 30 conglomerates, deriving what is required for a survey by a random sampling calculated according to the following formula

$$n = z^2 pq/d^2$$

In which n = sample size, z = 95% of the reliability limit = 1.96, p = coverage or prevalence rate, q = 1 - p, and d = the precision desired, which is usually 5% to 10%

A sample of 300 (10 per conglomerate) is normally used in the KPC survey of 30 conglomerates to assure that the sub-samples are broad enough to obtain useful information with adequate statistical margins for project management and decision-making

c Sample selection

30 conglomerates/communities are selected from a list of community beneficiaries of the project, which includes the population of each of them (Annex 2)

To select the first house to be visited in each community, a pencil was spun in the center of the community. The adjacent houses were then covered in clockwise fashion.

d Training of the supervisors and interviewers

The contents of the training workshop included

- * Methodology of the study
- * Logic of each of the questions to understand them better
- * Adjustment of the questionnaire language to the linguistic codes of the zone
- * Filling out forms. In this kind of study, it should always be taken into account that the questions should be asked the same way, and multiple exercises and practices were done to achieve this, taking the different education level of the interviewers and supervisors into account, as well as the experience of each of them in similar studies. This was an attempt to eliminate or reduce the bias that the interviewer might present as much as possible. The training program appears in Annex 5.

e Data collection

Nine teams were organized, made up of 1 supervisor and 2 or 3 interviewers who, according to the programming and the distances and access roads to the communities, as well as the number of surveys to be done, interviewed the mothers of children under 2 years of age in their homes over 5 consecutive days (January 17-21, 1997).

Great motivation was noted in both the interviewers and field supervisors, which permitted the coverage of a lot of territory in fewer days than were programmed. The field team spread out in the survey area without difficulties.

The center of each of the communities was determined and a pencil was spun to select the first home to be visited, then continued clockwise. They continued with the interviews only in homes with children under 2 years old in which the mother was present.

When the interviews were finished in each of the communities, the supervisors carefully reviewed each of the questionnaires.

The teams working in each of the zones appear in Annex 4.

f Data Processing and Analysis

The processing of the information was electronic, using the EPI/INFO program for that purpose

For the first draft of the study, the frequency distribution was taken for each of the questions

In some cases, crossed tables were made in EPI/INFO for the age of the children, to get second-level indicators

Afterward, some other crossing of information was done to find possible relationships, which will be mentioned below in the results section

III RESULTS

300 mothers of children under 2 years old were surveyed from 30 sample conglomerates of 98 communities in 4 Municipalities of the Department of Matagalpa

a General Characteristics of the Mother

The average age of the mother was 26 (± 7.2) years, with a range from 15 to 49 years. About 10% of the mothers are 18 years old or younger

47% of the mothers do not know how to read, of which 40.7% declared that they have never studied. This percentage is much higher than the national average and than the percentage found in other studies for similar zones, which reaches 30.6%

Only 14.7% of the mothers indicated that they work outside the home, but 34% reported that they do income generating activities, emphasizing among these the sale of agricultural products (19.7%), and 5% were wage workers

b General Characteristics of the Child

The average age of the 300 children surveyed was 9.9 months

58.3% of the children were under 1 year old

With respect to care for the child when the mother leaves the home, 25% of the children accompany their mother, 28% are cared for by older siblings, 30% by other relatives and barely 1% leave their children in infant care centers

c Infant Feeding

Breastfeeding

Some 70.7% of the mothers were breastfeeding at the moment of the survey. Of the mothers who were not breastfeeding, 92% reported that they had breastfed in the past, barely 8% of these mothers had never breastfed their children.

Breastfeeding was begun early, that is, during the first 8 hours, in 55.2%, of which 37.5% did it during the first hour after birth. An important percentage of mothers (42.3%) reported having begun to breastfeed after 8 hours.

46.3% of the mothers consider it important to drink more liquids, particularly pozol, to produce more milk, 31% stated that they should eat well.

Some 17% of the children under 4 months old receive only mother's milk.

Food for Weaning

The fact that only 17.3% of the mothers know that they should begin weaning between 4 and 6 months gives us the measure of the mothers' ignorance with respect to infant feeding.

It is important to stress that the knowledge of the mothers is not in accord with their practices.

With respect to the food that the mother provides to her children during weaning, it is quite varied, in which one notes a tendency to give water at a very early age, likewise atols and cow's milk, gradually including fruit and solid foods.

d Control of Growth

To learn the growth control practice and the use of an infant health card (CSI) for this purpose, each of the mothers interviewed was asked for the CSI of the children. It was found that 68.7% had the card, of which only 49.0% had taken their children to be weighed within the 3 months prior to the base study.

e Diarrheic Illnesses

Some 46% (138) of the mothers reported that their children had diarrhea within the two weeks prior to the study.

An ignorance of the appropriate handling of a case of diarrhea is observed in an important percentage of mothers, allowing a glimpse of the potential risk of dehydration, malnutrition and death.

Thus, 16.7% of the mothers reduced breastfeeding, added to 6% of the

mothers who suspended breastfeeding

Some 29% of mothers reduced and 7 2% even suspended liquids, while 30 4% (42) reduced and 13% suspended food

When asked if they had given any treatment to the children with diarrhea, only 28% gave Oral Rehydration Salts (SRO) It is important to mention that 10% gave liquids and 49% reported having given medicines

35 3% of the mothers reported having asked for help or advice when their children had diarrhea, 42 3% went to the health center, while 37 7% asked for help or advice from their relatives and only about 4% turned to the community health worker

Asked what the mother would do if her child had diarrhea, 56 8% responded that they would give medicines and 36 % would give household remedies

16 3% of the mothers identified dehydration as a serious sign, 17% fever and 14 3% vomiting When asked what actions they would do when the infant is recovering after an episode of diarrhea, 24% think that food in small quantities should be given more often, and 60% say that vitamins should be given

f Managing Water for Human Consumption

74% of the mothers surveyed say that water for human consumption should be chlorinated and 90% that it should be kept in clean and covered containers

60% of the families surveyed do their elimination outside, while barely 35 5% have latrines

g Acute Respiratory Illnesses

According to the information provided by the mothers, 75% (228) of the children had acute respiratory illness during the two weeks prior to the survey Of those, 84 6% had rapid breathing 56% of those cases asked for help, mainly turning to the health center (47 3%), while barely 3 6% asked for help from the community health worker

When the mother was asked about the serious signs in respiratory infections, 44 3% recognized rapid breathing as a serious sign, while barely 2 3% mentioned intercostal retraction It is important to highlight that 8 3% of the mothers declared that they did not know what this symptomatology of seriousness was

h Maternal Health

The Child Survival project within maternal health contemplates the promotion of vaccination with Tetanic Toxoid (TT), fostering of prenatal control, nutritional education during pregnancy and delivery care by health professionals and/or trained midwives

With respect to why a pregnant women should be vaccinated against tetanus, 21 3% said that it is to protect both the mother and the child, 25% believe that it is only to protect the child and 40 3% do not know

61 7% of mothers think that their first prenatal control should be done in the first quarter of pregnancy, 20% think that they should go at the halfway point of the pregnancy and/or in the last quarter

Barely 30% (89) of the mothers have the CPN, of which 56% have three and more prenatal controls registered

It should be noted that the majority have TT vaccination control cards, and it is observed that 57% (163) of the mothers surveyed received one and/two doses of TT vaccine

Investigation was also done on what foods a pregnant woman should eat to avoid anemia 60% do not know and 36% say that one should eat red meat, liver and/or green vegetables In addition, 68% of the women eat more or equal amounts of food compared to what they ate before getting pregnant

24% of the women identified some sign of seriousness during pregnancy

Some 38% of the deliveries were attended by health personnel (doctor and/or nurse), 33 7% by midwives and 27 7% of the cases were not treated by anyone and the mothers themselves or a member of the family cut the umbilical cord

IV DISCUSSION AND RECOMMENDATIONS

We can see some percentages in the survey that indicate to us the socioeconomic situation of the population benefited by the Project

One notable issue is the high level of illiteracy found, reaching almost 50% in comparison to other national references that indicate 30% as a maximum This figure is even more worrisome if we take into account that mothers are the ones most directly in charge of educating the children and transmitting or not the appropriate values and practices for health As a result, it will be necessary to develop strategies, methodology and educational materials for unschooled adults, as well as

consider the mothers' time availability. The segmentation of audiences based on the roles that each one carries out within the organizational structure of each of the communities will also be very important.

The great majority of mothers have breastfed their children, which, though encouraging, shows through the disaggregation that considerable percentages of mothers still exist who begin breastfeeding late and introduce water or food before four months. These are aspects to emphasize in the project.

Although high percentages are observed in relation to the introduction of semi-solid foods to children between 5 and 9 months of age, it will be necessary to go into slightly greater depth with respect to amount, frequency and consistency of the infant food.

Although more than two-thirds (68.7%) of the children had their infant health card, less than half (49%) of those who showed it use it for weight control or monitoring the growth of the child. Since growth control is one of the strategies used in Child Survival with the aim of getting the mother to visualize the physical growth of the children and immediately take actions, it is important to accomplish registration and interpretation of the growth card at a family and community level, so that it becomes possible in the short or medium term to modify or change infant feeding practices.

Another important datum is that 60% of those surveyed do their elimination outdoors, largely contributing to the transmission of illnesses through vectors or via the anal-oral canal as are all intestinal illnesses.

The morbidity rates found from diarrhea (46% of the total) and acute respiratory infections (76%) were high in children under 2 years old. Of this 76%, the mothers reported 84.6% as being rapid breathing or tiredness. These two types of pathologies are those that cause the greatest numbers of deaths in children.

With respect to the key indicators, the following can be found:

30% of the mothers report treating diarrhea with oral rehydration salts, either as a household serum or coming from industrial packages that the Ministry of Health distributes. This percentage is a little higher than the 26% found in a base survey from another Child Survival Project done in 1993 in a Pacific zone of Nicaragua, where there is greater access to health services and more information. This indicator could be indicating that the Ministry of Health has improved its coverage in the distribution of oral serums.

Despite finding this percentage, however, the datum contrasts with the

fact that only 17% of the mothers recognize the signs and signals of dehydration, which constitute the first link for possibly avoiding death from diarrhea and being able to adequately administer the oral dehydration serum. If we analyze this question taking the signs of seriousness of diarrhea as parameter, the percentage increases to above 60%.

With relation to maternal lactation, some encouraging indicators appear. 17% of the mothers report breastfeeding exclusively before 4 months, more or less 7% over the maximum levels reported at a national level and 15% over another base survey done in 1993 in the Pacific area.

70% of the mothers report giving their children an equal amount of breast milk or more in case of diarrhea, contrasting with 43% found in the other survey referred to, which speaks in favor of the preserved cultural concepts about breastfeeding in the zone of the Project and about the possible contribution that this practice has in avoiding a greater number of deaths from diarrhea.

54% of the mothers report breastfeeding the child in the first 8 hours after birth and 37.5% report doing so in the first hour after birth, much like the 37% found in the family health study, which favors the protection these infants receive directly from colostrum.

The practice of giving an equal or greater amount of liquids and food during an episode of diarrhea reaches 58% and 45%, respectively, which is a tendency 10% greater than the 46% and 37% found in the base line of the other project that is serving as a comparison.

Unfortunately, the majority of the mothers do not know the appropriate way to handle a child with diarrhea and acute respiratory infections. In addition to a strong educational component, it will be necessary to guarantee the availability of SRO and basic medications for handling children with ARI. In addition, a referral and counter-referral system with the health units of the Ministry and other institutions with the ability to resolve them.

The datum referring to maternal health is worrisome with respect to the fact that only 17% of the pregnant women did three prenatal controls compared to the national average, which is around 50%, and to the reference Project, which was about 52% and another reproductive health study which reached some 64% in the mountainous rural zone.

The previous figure is strongly related to the fact that only 38% of the deliveries were attended by trained personnel and another 34% attended by midwives. Some 28% of the deliveries were attended by the women themselves or by relatives. The risk of maternal and neonatal death that this implies is very large.

In contrast, the immunization coverage with respect to TT in women of reproductive age is 37% higher than the 24% found in the project that we have taken as reference. Greater immunization coverage exists in the area than of prenatal attention, with a very significant opportunity cost.

On the other hand, 49% of the mothers identified at least one sign of seriousness of pneumonia. In this aspect, the efforts will have to be intensified so that the mothers adequately delimit these signs and symptoms.

In relating breastfeeding to the spacing of pregnancies, only 4% of the women refer to it. It is more or less culturally imbedded that breastfeeding is beneficial for the child, but mothers generally do not recognize that it can have some benefit for them as well.

With respect to introducing solid and semi-solid foods into the diet of the child between five and nine months of age, 95% of the mothers have answered affirmatively. This percentage coincides with those found in other base surveys in which figures of up to 100% are found.

Finally, in relation to weight control, only 34% of the children in the survey had weight control in the past three months. This figure has to do with the fact that weight control is done in the health posts and centers, and, as is documented in other studies, the practice among the population is to go to the health posts and centers only in cases of illness. To this must be added the difficulties that the Project population has getting to the health units in general.

KEY INDICATORS OF CHILD SURVIVAL

I INDICATORS OF KNOWLEDGE AND PRACTICE IN DIARRHEA

INDICATORS	% 19 de marzo de 1997 FOUND
1 Children with diarrhea who receive Oral Rehydration Therapy	42%
2 Children who are breastfed the same or more during diarrhea episode	70%
3 Children who receive the same or a greater quantity of liquids during diarrhea episode	58%
4 Children who receive the same or more food during diarrhea	45%
5 Mothers who recognize the signs and signals of dehydration	16%

SOURCE Survey of mothers of children under two years of age municipalities of Muy Muy, Matiguas La Dalia, R Grande January 1997

II INDICATORS OF KNOWLEDGE AND PRACTICES IN PNEUMONIA

INDICATORS	% FOUND
1 Mothers who identify signs and symptoms of seriousness in cases of respiratory infection	49%
2 Mothers who seek adequate help when their child presents symptoms of pneumonia	37%

SOURCE Survey of mothers of children under two years of age municipalities of Muy Muy Matiguas La Dalia R Grande January 1997

III INDICATORS OF KNOWLEDGE AND PRACTICES IN NUTRITION

INDICATORS	% FOUND
1 Children under two years old with weight control in the past three months	34%
2 Children breastfed immediately after birth	54%
3 Children exclusively breastfed up to 4 months of age	17%
4 Children between 5 and 9 months receiving solid and semi-solid foods	93%

SOURCE Survey of mothers of children under two years of age, municipalities of Muy Muy, Matiguas La Dalia, R Grande January 1997

IV INDICATORS OF KNOWLEDGE AND PRACTICES IN MATERNAL CARE

INDICATORS	% FOUND
1 Mothers who recognize breastfeeding as a factor in spacing pregnancies	4%
2 Mothers who received three or more prenatal controls	17%
3 Mothers who received two dosages of TT	37%
4 Deliveries attended by trained personnel	38%
5 Mothers who recognize some danger sign in a pregnancy	71%

SOURCE Survey of mothers of children under two years of age municipalities of Muy Muy Matiguas La Dalia R Grande January 1997

Please
to Ruth Harvey
ASAP. Thanks
AA

CATHOLIC RELIEF SERVICES - USCC
Nicaragua Program
Managua, Nicaragua

FAX TRANSMISSION

URGENT!!

DATE January 29, 1997
TO Ruth Harvey CRS/PQSD FAX #
FROM Mark Snyder AA FAX # (505) 2 781852
APPROVED #

This FAX consists of ___ page(s), including this page

SUBJECT KPC Selection Process (KS's e-mail message)
REF

Attached please find the onerous e-mail I don't know why you're unable to pull it down. Must be the reorganization of your system this week.

Thanks

To crsni@nicarao.apc.org.ni
From Catholic Relief Services-USCC/GT <crsgua@guate.net>
Subject KPC Cluster Selection
Status

Mark,

Per our telephone conversation, here's a run-down of our decision making process regarding cluster selection.

30 clusters were randomly selected using the dollar bill method on January 7. By January 14-15 however, we received news that recent kidnappings and assaults precluded conducting the survey in as many as 10 of the 30 clusters. As you know, the survey was set to begin the next day.

Per your communication with HQ, we learned that it was better to go ahead and reselect communities (eliminating the risky ones) than to do 20 surveys now and 10 later (when things calmed down).

Unfortunately however, we could not go back to the drawing board and re-select ALL of the communities due to the following

1 In the 20 or so safe communities, contacts had already been made. Community committees were informed and guides/mules were hired in each. Redrawing the entire sample would have meant breaking a commitment with 20 community organizations. We would have also had to track down and hire guides in the new communities-- which could have set us back 4-6 days. This, in turn, would have affected our interview/supervisor staffing levels as their contracts were up by a certain date.

Thus, in consulting with Jose, Caritas staff and the bishop, we decided to begin the survey in the northern (safe) municipalities as scheduled. On the fourth day (1/20) the team was due to arrive to the unstable area. Upon arriving, they would check with the local priests and authorities. Our hope was that with the recent change of power/administration, things would settle down and the survey could take place in all of the 30 original clusters (including the 10 or so risky ones). Should the team arrive to Matigua and find that the situation was still too dangerous they were to do the following:

1 Determine how many of the Matigua communities could not be surveyed.

2 RANDOMLY REPLACE those communities (again, with the dollar bill method) by redrawing a sample, from the universe of all the safe communities in Matigua and Muv Muv. We decided to limit the replacement universe to Matigua and Muv Muv for the following reasons:

a The Matigua and Muv Muv communities would be SIMILAR TO THOSE COMMUNITIES WHICH WERE WITHDRAWN from the sample. Matigua and MM represent coffee regions, whereas La Dalia and Rancho Grande are mountainous, small-landholder plots-- quite different.

b Logistically, it would be difficult and time-consuming to return to Rancho Grande and La Dalia. Travel back there requires returning through Matagalpa and would add another day to the trip. On top of this would be added time to advise committees and hire guides. By limiting the replacement communities to relatively similar and homogenous area of Matigua and MM, the team could ensure that parish contacts advised the communities and guides as they went along.

Please let me know if you need any more information regarding our rationale for the decision. As you know, I'm not aware of how things actually turned out (e.g., how many of the originally-selected communities couldn't be visited). I'm just sending you information on the types of analysis and decisions we made during the last two days of the training.

Regards

-- Kristen

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