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**Formative Research on Anaemia and Iron
Supplementation During Pregnancy
in Honduras**

FINAL REPORT

**Programas Para el Desarrollo de
la Infancia y la Mujer
PRODIM**

**MotherCare
Anaemia**

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FORMATIVE RESEARCH ON ANAEMIA AND IRON
SUPPLEMENTATION DURING PREGNANCY
IN HONDURAS

INTRODUCTION

Iron deficiency is the commonest nutritional problem in the world, and is the principal responsible for anaemia during pregnancy. In Honduras there are no data at a national level of anaemia prevalence during pregnancy. Some studies in different areas shows a great variability in anaemia prevalence among childhood and pregnancy (14-65%). These data aren't reliable even in the areas where they been made.

Anaemia during pregnancy is due to several factors. The requirements in the 2nd and 3rd periods in pregnancy increase because of the increase on fetus and placenta demands, and by the erythrocyte mass expansion. The iron requirements during the 2nd and 3rd periods of pregnancy rises to 4.4 and 6.3 mg respectively. Although during pregnancy the proportion of absorbed iron in diet rises, this isn't enough to satisfy the excessive demand. So pregnant women must use some iron from the storage sites. If storage is low or absent then anaemia appears.

The iron storage is low in people who got diets with low available iron, with parasite infection that generates chronic bleeding or with frequent and low interval pregnancies. In Honduras these conditions occurs in a great population segment. The diet has little haeminic iron from animal food sources. The non haeminic iron, which has low bio available, is consumed with factors that interferes with it's absorption like tanins in coffee and phitates present in vegetable food sources.

Women with multiple and low interval pregnancies suffers a constantly depletion of her storage. It has been postulated that in supplementation absence, a women can't meet her before pregnancy levels after two years.

The iron supplementation during the second and third pregnancy periods is necessary. The women health program in Honduras had made it a rule, in their services. Since the second pregnancy period the women must be supplemented with 120mg of ferrous sulphate a day.

Although the supplementation looks like a good and acceptable way to solve the anaemia, it's effectivity shows several problems. The compliance with the supplementation is related with beliefs, perceptions and practices influenced by women culture. In Thailand and India for example iron supplementation is related to giant babies. In Sierra Leona people think that red color medicines replaces and purify blood.

In other cultures anaemia symptoms during pregnancy are natural and so there is no need for a supplement. Supplementation side effects with ferrous sulphate like diarrhea, abdominal pain and cramps can affect their intake.

Health personnel could sometimes be an obstacle because of their lack of compromise with the anaemia problem. Other problem is the economical and physical limited access of pregnant women living in extreme poverty communities to iron and health services.

Searching solutions to these access and compliance problems, some alternative supplementation vehicles and the adoption of a weekly dosage system are postulated. But in the first case, the cost seems to be too high and in the second, although there are promising results, no concluding evidence can be used.

In the short term a national micronutrient survey will be carried out to establish the anaemia prevalence in the country. In addition to that, qualitative data are needed to establish a strategy to improve the offer and demand of iron supplementation during pregnancy.

This study provides basic information qualitative to design a communication plan on anaemia and iron supplementation in several areas in Honduras.

Objectives

General Objective

The general objective of this study is to provide qualitative basic information and recommendations to develop an intervention plan in information, education and communication on anaemia and iron supplementation in several areas in Honduras.

Specific Objectives

- 1 Document vitamins supplements and minerals for pregnant women existences and access to them.
- 2 Establish the knowledge and practices during pregnancy on anaemia and iron supplementation of health centers personnel.
- 3 Establish the knowledge and practices on anaemia and iron supplementation during pregnancy of selected women.
- 4 Identify doubts and barriers to iron supplementation compliance on pregnant women, including side effects, and undesirable things upon tablets or it's distribution.

- 5 Identify alternative distribution channels for iron supplements, and measure women availability to pay for it, and the price suggested for the supplements
- 6 Identify communication channels and best materials for communication process

MATERIALS and METHODS

GENERAL ASPECTS

This study have been made in five communities Rivera Hernandez Colony which is a periurban San Pedro Sula Community, Ajuterique and Las Flores Village, which are rural communities in Comayagua, and Peñita and Hornitos small villages which are remote rural communities in La Paz area. In each one of those sites there is a public health center. Around that center the study has taken place.

TECHNIC AND PROCEDURES

The following procedures have been made in each community

- 1 In each public health center in depth interviews were made the responsible to give prenatal care (5 interviews)
- 2 In each public health center a self given questionnaire have been made in each one of staff members. 23 questionnaires made: 6 in Ajuterique, 12 in Rivera Hernández, 4 in Flores, 1 in Peñita and 1 in Hornitos.
- 3 In each public health center, service exit interviews to pregnant women have been made. 40 exit interviews made: 12 in Ajuterique, 5 in Rivera Hernández, 10 in Flores, 4 in Peñita and 9 in Hornitos.
- 4 In each community the following focus group discussions have been made:
 - a) 2 focus groups with mothers aged less than 25, on prenatal care, pregnancy knowledge, anaemia and iron supplements and communication channels for pregnant women.
 - b) 2 focus groups with mothers aged between 25 and 49, on the same subjects.
 - c) 2 focus groups with older women aged above 49, on the same subjects.
 - d) 1 focus group with family men, on the same subjects. In Ajuterique 2 focus group discussions have been made.

5 2 focus groups were made with the child attention program monitors , one in Flores and one in Hornitos, to explore how that program could be integrated to the monitoring of pregnancy weight

6 3 focus groups were made with midwives, one in Ajuterique, one in Flores and one in Hornitos to discuss topics related to iron, anaemia and pregnancy, and to explore their relations with the health services

7 A supplementation trial was carried out in Flores (rural) and Peñita (remote rural) communities, 25 women were contacted in Flores and 6 in Peñita. It was impossible to find the proposed 20 pregnant women in Peñita area, 6 were all the pregnant women identified

Every women received the same instructions during the trial onset and an amount of 30 ferrous sulphate tablets were given in a purse to each one of them. Follow up interviews were made one week after the iron trial onset, but only 18 pregnant women in Flores were disposable to answer the questionnaire. The 6 women in Peñita were interviewed

8 2 Focus Groups, one in Flores and the other in Peñita were made with the pregnant women involved on the iron trial at least two weeks after the onset

9 In Ajuterique 42 interception interviews were made on the streets with women of several ages to complete the information of the focus groups

10 In each community key informants interviews between 3 and 5 were made. These persons were community leaders, or health related. 20 of these interviews were made

DATA ANALYSIS

Data from the self given health personnel questionnaires, exit services pregnant women interviews, and follow up iron trial interviews were double processed and entry in EPI INFO 6.0

In depth interview about the prenatal services was processed as qualitative data. A careful preliminary reading allowed to place the information in several matrix to compare texts and data

The main procedure to collect data was the focus group discussion. The analysis of focus group information begun with a careful reading of all of it. After the reading the most important topics were identified: pregnancy, anaemia, foods, prenatal care, communication methods, supplementation (iron and vitamins). These topics were grouped in several matrices differentiating knowledge from practices of different ages and different communities women. A text program known as Gofer ver 2.0 was used too, to complete the analysis process

PERSONNEL

The Study was coordinated by Javier Rodríguez as principal researcher. Five field researchers were used, all of them health professionals, which were responsible for the data collection. Study team had been counseling by Patricio Barriga in the preoperative phase and by Elena Hurtado in the analysis one.

CALENDAR

Study was held one week in each community. In Ajuterique it was made between July 28 and August 2, in Rivera Hernández between 5 and 9 August, in Flores from August 12 to August 16, in Peñita between August 26 and August 30, and in Hornitos between September 2 and September 6.

For the iron trial onset with ferrous sulphate Flores community was visited August 23 and 30, and September 12, while Peñita community was visited September 4 and 11.

PROBLEMS AND LIMITATIONS

To reach the maximum cooperation level with the public health ministry, the principal researcher had several meetings with health areas personnel to coordinate the study team visit to each one of the health centers chosen. But when the research team arrived in each health center, their personnel didn't know about it. Although this was an inconvenience to the study, every one of health centers personnel involved in it has shown a wide and gentle cooperation.

Health centers at Flores, Peñita, and Hornitos were closed at least one day or more during the week visited by research team. This inconvenience limited the number of pregnant women that could be interviewed after receiving prenatal care.

Communications facilities between Rivera Hernández and the San Pedro Sula city, and between Ajuterique and the cities of La Paz and Comayagua allows many pregnant women to travel to others health facilities. This had limited too the number of pregnant women interviewed in those sites.

To start the iron supplementation trial in Flores, the pregnant women list in the health center was consulted. In Flores only 12 women were on it, so the research team did make an inquiry in the neighborhood to achieve 25 women to the trial. Nevertheless in the follow up interview one week later, seven among the 25 pregnant women originally chosen weren't able to answer the questionnaire because of several reasons. In Peñita health center pregnancy list had only 4 women. Two more were founded by the research team. These conditions had limited the number of pregnant women originally scheduled to participate in the trial.

No arrangements couldn't be made to increase the number of women participating because the lack of time to accomplished it in other communities

RESULTS

The results are presented in three sections. In the first section Qualitative research results are shown, grouping the communities of study in three areas

- 1) Periurban area (Rivera Hernandez colony in San Pedro Sula)
- 2) Rural accessible area (Ajuterique and Flores)
- 3) Rural remote areas (Hornitos and Peñita)

In each area the women knowledge and practices related to pregnancy, anaemia, iron and vitamin supplementation and alimentation

After it some information related to factors involving the pregnant women practices, communications and distribution alternatives to the supplementation. These results are shown in one only group of data for the five communities. Finally, an overview of the integral child attention program is made view the results in Flores and Hornitos

In the second section the qualitative and quantitative results relatives to the health services are shown. The relevant results of questionnaires, interviews and focus group discussions are presented

In the third section the preliminary results from the iron trial are shown. The results from the follow up interviews is separated from focus group discussion results

1 QUALITATIVE RESULTS

A Knowledge and Practices

A1 Rivera Hernández Colony (Periurban community)

1 PREGNANCY

Women listed the following malaises: Vomit, Squeamishness, food loathsomeness, spitting, appetite increase or hunger loss, molar teeth pain, no eating until the third month, headache, low back pain, body pain, belly pain, sea-sickness, debility, decaying, "vaidos" (guidness), weight loss, the foot become tumefied. The commonest are the gastrointestinal malaises

Between those malaises some look like anaemia suggestive headache, "Flojedad" weakness, sea-sickness, decaying, guidiness, tired

Many women told about some spirit alterations laziness, aggressive, bad humor, hate the father of the child, bad temper and angry All those suggest a malaise status in pregnant women

Nevertheless some women told that they didn't felt any malaises during her pregnancies and no spirit alterations neither One women justified that women with pregnancy malaises are blood weak

There are belief that the midwives "sobadas" (handling) let the veins flaccid and that helped to strength them Now they don't go to the midwife but to the physician They regret that the physician doesn't have such knowledge, although they recognize that he might have others skills that can help

Women in this community assist to the prenatal care in some private services in the same colony, or come to the municipal facilities They can also go to the San Pedro Sula city to visit private, municipal, social security or public health facilities Access to those is easy and fast Just a little number among all the women participating in the focus group affirm that they go exclusively to the public health center

ANAEMIA

All the women in all the focus groups knew about anaemia They answer anaemia when descriptions of an anaemic pregnant woman symptoms were made The following terms were mentioned as anaemia synonyms or definitions

- "Decayed blood"
- "Weakness"
- "Lack of blood"
- "Lack of Haemoglobin"
- "Lack of Vitamins"

They recognize that anaemia impairs blood All the people can be affected One of the women told "We all have the anaemia, but it isn't deep (severe)" Other said "We got all the diseases but they aren't developed, perhaps we don't have AIDS"

To diagnose the anaemia some of the women look for the "white in the conjunctiva eye" Although if anaemia is severe, they don't need to do this because they note it just looking the person

Anaemia Classification

Some of the participants recognized two anaemia types

- Deep Anaemia Woman is "pallula" (pale), wasted, without spirit, with drowsiness, with "ojeras" (blackish circles under the eyes), and white eye-lids, tumefied It penetrates bones and is hard to relieve it
- Light anaemia is the one all the people have "We all have one sixteen (a little 1/16) of anaemia"

Anaemia Causes

The commonest cause of anaemia responsible is related to the alimentary Nevertheless they mentioned others such as, having kids very fast, being careless, the lack of prenatal care controls and the lack of physical exercise "Anaemia is the result of sleeping too much"

Anaemia Symptoms

Anaemia synonyms are "pallula" (pale), wasted, without spirit, only drowsiness or sleepless, with "ojeras" (blackish circles under the eyes), white eye-lids, tumefied, yellow (color of the body), "bofa" (like a balloon without air), "vaidos" (guddiness), cold, unwillingly for walk "People with anaemia is tumefied, they become pale"

Anaemia Consequencies

Consequencies of the anaemia are related to the child and the mother Anaemia makes that child born with malnutrition and low birth weight, sick with weakness and "tullido" (non develop), without strength, with anaemia

Mother is affected because her defenses lowers and she might even die during a bad delivery

Anaemia Treatments

Several treatments were listed, they can be grouped in homemade remedies, food and pharmacological treatments

Homemade remedies are "Calaiuca" (herb), cooked purslane, "Pascua(plant) water with Romero(bot Rosemary herb)", roots of the "indio desnudo" (lit "naked Indian", plant), calagualla, "diente de león" (lit "Lion teeth", plant), Carao (plant)with milk, liquidambar (plant) skin, Guava leaf, Avocado leaf, raw liver extract and "manzanilla" (Chamomile)

Food treatments are Beans soup, "frijolillo" (little beans), red beet juice, carrot juice

Pharmacological treatments are Vitamins oral or injected, blood transfusions, iron, Combactrin , Ferrum (commercial iron names), ferrous sulphate, life pills, vigorón, (commercial) and B complex (injection)

Many homemade remedies or food mentioned before are red like blood

SUPPLEMENTATION

When asked about iron, women got two responses. Some of them didn't know what it is, others knew that it is a vitamin. Some of the ones that didn't know what is iron, knew the ferrous sulphate or the prenatal caps, identifying them as the vitamins that were given to hers at health center. Some of the ones that did know that iron is a vitamin, didn't know the ferrous sulphate, but knew about prenatal caps and commercial iron presentations like CromatonB and Ferrum. Some of the women indicated that iron is good for the blood.

Some of the women mentioned that iron can be obtained from several foods that contains it. One of them said that she prefers fruits vitamins rather than tablet ones. One of the participants said "Vitamins are made from plants, if we knew how to do it, we didn't have to buy it but we would make it."

Some positive effects of iron were mentioned: good for the blood, raises the blood, strengthens the mother and the kid, gives force, kids don't birth with malnutrition, gives force for the delivery hour, benefits kid bones and teeth, helps to raise haemoglobin levels, gives color and appetite.

Some talked about consequences if they don't take the iron: weak birth, birth with sickness, pale, women gets pale like green.

Nevertheless they related iron to several negative effects: Squeamishness, loathsomeness, "boleucia" (like being drunk), gets women more weak, stomach rejects it, has horrible taste, after birth kids get teeth pricking when their mother takes them.

In addition of these negative factors some beliefs or attitudes made easy to abandon the supplementation. Some women don't take the iron because they think that the child gets too big and the delivery is therefore harder, others claimed that they get tedious or gives her laziness to take it daily, others claimed that they often forget it, others said that they didn't continue taking the pill because they didn't know vitamin importance or never been told about its utility, and others said that oral vitamin is too strong and can cause kid deformities.

Some of the participants don't come to the health center, but they mention that they have access to the ferrous sulphate or to a parenteral iron. Some of them related that they have used iron injections instead of taking the pills.

Related to the way they take the tablets it seems like the usual is to take it daily, mostly in the morning. Nevertheless some of them said that they take three pills a day, one with every meal. Some said that they don't need any kind of stimulus to take the pills because they got a compromise with their own. Others affirm that they constantly forget to take the pills.

The participants at the focus group discussion presents two attitudes to the ferrous sulphate, one for and other against it. The ones who support it claimed about their positive effects. One of them said "Ferrous Sulphate looks so insignificant, but is so good and cheap". Nevertheless talking about other iron presentations they regret the prices they have to pay. The ones that don't support it argue that it has side effects and mention some of the beliefs written before.

Among the women that support the ferrous sulphate, not everyone will be disposed to pay for it. One of the women considered that she got the right to access them free.

ALIMENTARY

Several whims are mentioned during pregnancies. They include fruits like green mangoes and pineapples, and substances that aren't necessarily consider as foods like eating soil, cement, coffee "Chingaste" (the remains of cooked coffee), soap, shoe polish, smoke and drink. "I've got desire of dry soil eating that become wet in my mouth." The Ice was mentioned too. Raw and cooked foods that may be good iron sources like liver. It seems that acids or piquant foods are preferred. There is the belief that eating salt relieves whims.

They also mentioned some foods rejected during pregnancy. Those foods are common in their diet. Among them they mentioned rice, tortilla, beans, eggs and onions.

They mentioned that during pregnancy women must eat everything to make "frondose kids", she got to eat well to avoid anaemia. Fruits and vegetables references are made. If pregnant women doesn't eat well she got delivery problems, has anaemia, low defenses because the lowering red and white cells, and that's why people could die.

There are some food to avoid like "chile" (chili) or pineapple, melon or orange. All these are cold foods and can produce chest sickness to the kid at birth. If coconut water consumed, the kid can become asthmatic. The "platanos" (platanus) with milk is avoided because it fattens the kid and so it can't be deliver. The "bitter" tablets like aspirin and "Alka Seltzer" must be avoid because they are abortive.

After delivery some foods are recommended Cheese, toasted tortillas, roasted hen, boiled chocolate with milk Last one is used to lower breast milk like the pericón (plant) and manzanilla (chamomile) does

There are also food that can't be eaten after delivery Avocado, lard, onions, white cabbage, and green vegetables produces "muclé" (green stools and colic pain) on the kid Fish and rice are too much fresh, butter produces infection and a vaginal white fluid called white flower, corn "atol" (gruel) produces colic pain to the kid, "Mondongo" (beef intestines) is very hot, eggs stinks blood and gives an ovarian infection and infects the kid when the umbilical cord hasn't fallen, and finally the beans "empachan" (gastrointestinal malaises) kids

An older woman said that if the women often consumes these foods in their first pregnancy, the body gets used to them and so they doesn't harm her in the following pregnancies

They mentioned the coffee habit One woman said "I've got a headache if I don't drink coffee, it doesn't gives me stomach burn pain or anything

A2. Ajuterique and Flores (rural communities)

1 PREGNANCY

Women affirm that in pregnancy there is a lot of malaises sea-sickness, nausea, spitting, squeamishness, no eating, vomits, stomach burn and pain, loathsomeness, acidity, headache, lower pressure, suffocation, asphyxia, legs drowsiness, reluctance, laziness, decaying, guidness, exhaustion, ugly and thin feet become tumefied, legs and feet cramps, hands "engarrotadas" (to squeeze and press hard), walking not comfortable, varix molestation, low back pain, sweating, with fever, cold, waist pain, brain (neck) pain, bleeding (menstruating) The commonest are the gastrointestinal malaises at pregnancy onset Pain is commonest at the end One of them told "At the pregnancy end, nobody wants to do anything"

Among mentioned malaises some could be considered anaemia suggestive sea-sickness, "bolencia" (like drunk), tired, drowsiness, debility, without spirit, pale, headache, suffocation, reluctance, laziness, decay, exhausted, "I used to be lied down, no work at home made"

Some of them said that several women doesn't have any molestation, and that someone got more willing for work, and to be active in pregnancy

They mentioned that there are changes in women spirit during pregnancy Everything upset me, everything offends and revenge with their children, mad, resignation, anger, not comfortable, "I hate my husband, I prefer to be alone," "tironia" (delicate, sensible), sad, impertinent, afraid

When women talk about diet they don't refer always to the alimentary, but some pregnancy care

There are some beliefs like the one that argues that the girls pregnancy is different from the boys one Some practices reinforce that Midwives demands more when a boy is born than when a girl does, Women who delivers male newborns receive hen to eat after Other belief is that the pregnancies become harder with age

Women in those communities assist to prenatal care to several health services Private clinics in La Paz and Comayagua, health centers and hospitals She got access to them Older women talk about the difference between the before and now Before they used to visit midwives because there weren't health centers

ANAEMIA

The women participating in all the focus groups knew about anaemia They answer when descriptions of an anaemic pregnant women symptoms were made Some anaemia definitions were

- "When you loose red cells (erythrocytes)"
- "You become yellow"
- "Lack of vitamins, loose color, got cold"
- "Lack of blood"

They relate anaemia with blood changes (bad, insufficient, watery), with pale skin and bad alimentation and lack of vitamins

People with anaemia risk

Anaemia occurs in pregnant women, not only the thin but also the ones who look fat, sometimes younger women (children got pregnant) and sometimes after delivery because of the bleeding

Anaemia Diagnosis

To know if a persons is anaemic they look for the person aspect, specially the color, and blood tests Some of them uses terms like red cells and haemoglobin

Anaemia Classification

Some of the women participating can recognize different types of anaemia The commonest are "anemia alone" and "deep anaemia"

Anaemia alone or simple isn't severe and heals faster Deep anaemia is serious and can even kill Other women didn't talk about anaemia types, they may exist but they didn't know. .

Anaemia Causes

Main anaemia cause mentioned is bad nutritious, in addition the lack of iron and other vitamins in the blood. Other causes are Penicillin injections, women age (pregnant children suffers more anaemia), malnutrition, the women don't assist to prenatal care, and malaria.

Anaemia Symptoms

Anaemia symptoms are decaying, lack of forces, apathy, reluctance, laziness, drowsiness, doesn't want to walk, sadness, pale ("pallida"), white lips, yellow eyes, yellow, doesn't have appetite for eat, they become tumefied (because water in the blood), got cold, cold feet, coldness, cold sweat, "tullida" (no developed), chest pain, wrinkled. The symptoms are behavior and physical changes in women. They related anaemia with cold and tumefied. A women said one extreme situation:

"I've got anaemia and my hair was yellowed, I was yellow too, I was cold and drowsy in the middle of the day, I use to sleep with the sun heat"

Anaemia Consecuencies

They identified negative consecuencies related to anaemia for the kids and for the mothers. The kids could be affected by mothers could transmit anaemia to their son, they can loose it or have a miscarriage, kid could birth malnourished, Rachitic, thin, pale, low birth weight or premature, decay and lacking activity, with congenital malformations (tullido or no developed).

Mother could be affected by lacking of forces to delivery, they could receive other sickness at delivery moment or even die. These consecuencies are related to women reproductive job.

Anaemia treatment

They identified homemade remedies and pharmacological treatments. Some of them believes that homemade remedies can heal anaemia. They mentioned the following remedies: meat wines, nine radish with milk, radish leaf, boiled red-beet, red-beet water and leaf red beet water, "indio desnudo" (naked Indian, plant), "Chaparro" (evergreen oak-tree), Sambrano (tree), boiled pricked red "nance" (kind of berry), Carao (plant) syrup, Carao flower boiled with milk, "Quina" (Chinchona tree) sticks with cinnamon, tree honey, Coronada (commercial) essence with milk, "yuca" (plant) bud of tree, papaw peel with seeds and quina ("atol amargo" = bitter gruel), wine made of "aguardiente" (alcohol) + sugar + "Coronada" essence + cinnamon, "Cuculmeca" (tree) roots, "Jinicuite" (tree) and finally "Excursionera" (tree).

They also mentioned medicinal foods like half boiled liver, first boiled bean water soup without salt, black cows milk, black beans, "macho" (ripe) plantain, goat milk, soy beans, some fruits and vegetables.

Many of homemade remedies are red which is associated with blood

The pharmacological treatments are Vitamins, prenatal vitamins, C and D vitamins, Folic Acid, Iron, Ferrous Sulphate, "Sueros" (fluids for IV injection), vitamins injections, red cells package, Malta (grain) extract, Liver extract injections, Complex (B vitamins) injections, vegetable regulator with milk, iodized codish syrup, "Coronel" (commercial vitamin tonic), McCoy pills (commercial), "Bacalao" (fish) oil, Phosphorus and Campolón (carnitine)

They considered more important foods than vitamins, without food vitamins are useless. They had to work together food and vitamins. One woman said "You can't eat well every day, there are poor and poorer, if you don't drink vitamins you must eat well to have both working."

3. SUPPLEMENTATION

They knew more prenatal vitamins than iron, they talked more about vitamins than iron. Nevertheless in a less than 25 years women group none knew what iron means and they couldn't link it with nothing. Some identified iron as a vitamin "all vitamins has iron", "Is vitamin ferrous sulphate". They knew there are vitamins in the health center and that they're given to pregnant women, but generally they don't tell them what are they for or their utility. The ones who don't go to the centers don't get them. In the centers it seems that existences are limited, specially the last times.

They related iron with some positive effects. Like vitamins they're good for pregnant women and after delivery and for the kids. In women they increase blood, increase red cells, is great defense for blood, used for anaemia, is body vitamin, gives body and bones strength, controls pressure, improves spirit, "rejuvenece" (growth young again), makes her rose and with working and eating energy, Gives force for delivery and help body recovery after it, helps lactancy (collecting milk), prevents brain (head) pain and relieves darkness.

Iron is good for the creature, gives them hunger, gives strength, makes the kid born strong, don't born malnourished, that goes "alantado" (fine, good), that doesn't have diarrhea, that doesn't go sick, become "chapudo" (red face), vitamins the kid, increase weight, strengths, takes better color.

Few women had taken iron, for example none of the youngsters women in Flores have taken iron. Some of them have received it but they hadn't take them or leaved them. Some that had taken them does it with milk to avoid sea-sickness and gastric malaises, with orange juice, water or bottled refreshments.

That one person remember them to take the pill or put it in front of them helps women to do it. They also said that tablet must be in a visible place. In some cases husband counted the pills to check that they swallowed them. Older women recommended to supervise and count the pills.

The main reasons to stop taking the tablets are gastric malaises. "Is heavy for stomach, gives stomach pain, acidity, willing to vomit." There are other malaises like "gives me canillera" (feet trembling), decrease pressure, sea sickness or "Bolencia" (like drunk), irritates while urinating, face spots when going out or near the fire, overweighs mothers, hot belching, headaches, drowsiness. It spots kids teeth and women face, see little lights around. "It's lazy to take them, get tedious of it, women is ruined (careless)".

Sometimes responses to malaises are dosage reduction, or skipping days. There is no consensus about dosage and frequency. The hour of the day were tablets are swallowed also changes. Night, after breakfast, when I remember, some days yes others no.

They've also mentioned some aspects no desirable from the ferrous sulphate taste ugly, taste like "moho" (bot moss), ugly smell, they have a smelly, smells like iron rust, like oxide, like pure blood. A woman described like that:

"Their smell is so ordinary (bad), like a "mossy" recipient when you clean it."

A negative iron effect is that overweighs the kid and so delivery gets difficult. For example an Ajuterique woman said "I didn't take the tablets because in my first pregnancy, I was getting to overweight, the kid was too, and they "joined me" (episiotomy after delivery). Because of this in the pregnancies although they gave me the tablets, I didn't take them, to avoid too overweight kids and suffer at delivery. The center physician take me to the hospital "materno" (in Tegucigalpa) because the kid was too big. I wouldn't counselling to take iron tablets to a younger sister, because they can make her cesarean operation if she isn't wide enough, and there is no need that she gets that kind of thing if you can prevent it."

A woman with blood pressure problems claimed that iron produces on her nose and mouth bleeding.

Other factors that influence taking the tablets are the lack of knowledge of them, the minor status because they are free, belief related to avoid mixtures with some foods like lemon, chili and others. There are some people that don't need to take iron because they're strong or they're well nourished. It depend if food has vitamins and iron or not.

Hunger was mentioned even as positive or negative effect Vitamins increase appetite, but if they don't have what to eat then why should they want to get hungry

Iron source foods Everything green like vegetables, bean soup, beans, milk, half raw beef meat, fish, eggs, rice, fruits (pineapple and mango), banana, potatoes, fruit juice, "yuca" (plant roots) and radish

Some of them considered ferrous sulphate is cheap, maybe because they get it free at health services If these were medicines they should pay for them, but vitamins aren't medicines They don't think that is fair to pay for vitamins, if these were paid they won't buy them They argue that poverty doesn't allow them to buy these Some said that if vitamins aren't taken now that they're free, it is going to be worse if they pay them Nevertheless others agree to pay it because they consider them important A Flores midwife talked about Folic Acid

4 ALIMENTARY

They mentioned some pregnancy whims and they defined "When you want to eat something, and when you eat it you hate it, and you don't want to see it", The food desire is when you ate and don't vomit it" "You ate everything and after you got loathsomeness" "When you see the thing you got the whim, but you don't eat it" "The whim is caused by the kid that demands food"

Whims got to do with foods like Fruits (watermelons, oranges, mangoes) or acid things (lemon) Many of them, specially the oldest women mentioned some substances that aren't considered like food "White soil, wet soil, sulphur dust, starch dust, raw rice, wet soil from the wall, pure street mud, ice or frost from the freezer A woman said I used to get sleep with a lime clod in my hand"

They believe that if the whims are satisfied they can have a miscarriage and some women told experiences related to it To avoid a whim They've got beliefs too "To stop a whim you got to put a little salt in your tongue edge"

There are some good foods during pregnancy "eat all to be well nourished, fruits (watermelons, pineapple, guava, cucumber, "nance" (kind of berry)) and vegetables, green things and soil roots, soups (bean soups with rice or tortilla, "canecho" (crab) soup, beef and chicken soup) plantain with milk and meat These are nutritive foods, beans have iron, the others have vitamins

They also mentioned foods that must be avoided by pregnant women or that were hated, for example eggs and tomatoes. They must avoid plantain and milk and other food that can produce overweight because women and kids become too fat, chili can produce skin pimples after kid birth and It's hot Soup and others meals with fat are bad. Chili, lemon and condiments are prohibited by physicians when they're taking vitamins. Chili can also produce congenital abnormalities.

Women know the relation between food and nutritional state of mother and child. It's good that women are well feed because the vitamins goes to the kid and they got strength for delivery. If pregnant women eat well she'll have good milk (for breast feeding). If the pregnant women doesn't eat well the kid born malnourished or "pellejosito" (wrinkled). Nevertheless the excess is bad. Delivery is difficult when excess eating because the kid overweighs.

After delivery there are some prohibited foods because they ill the kid towards breast-milk. For example avocado and white cabbage make that children make green stools and gets "muclé". "Muclé" is a colic pain in children's stomach, with green stools.

Some foods impairs kids umbilical heal. White cabbage, cucumber, eggs and avocados. After delivery some foods can harm the mother: eggs, watermelons, avocado, milk, "guineo" (kind of banana), fruit salad, vegetables, "cuajada" (kind of cheese) with serum and lemon. Many of these food are considered cold or they can cut women blood.

When women goes to delivery at hospitals their beliefs and practices are questioned. Their reactions to this can be different like this sentences show:

"At the hospitals they gave you everything, but you eat only what you can eat, the rest you is put away."

"At the hospital they gave me tea and cooked vegetables, but since I've got a cesarean operation (I was able to eat)."

"When I went to deliver there (hospital) they give everything to eat and then I said you can eat everything. At the hospital they said you can eat everything."

After delivery women can eat purple skin avocados but not green ones, fruits, drinks (cacao, "ayote" (pumpkin) seeds, pinol) that helps bring down breast milk, "maicena" (from maize) gruel, manzanilla (chamomile) or pepper tea.

Consumption of foods that enhances or impairs iron absorption was explored. Information is very variable. They all take coffee. Some of them got acidity, but others don't feel any malaises. Some consider coffee as a vicious habit, a drug. One mentioned that the physician recommended her to avoid coffee and take antiacids. About antiacids some said that the physician always recommended it or they take it when there is burning at stomach.

A3. Hornitos and Peñita (rural remote communities)

PREGNANCY

Women also mentioned in these groups that they have many malaises related to pregnancy. There are gastrointestinal malaises: willing to vomit, squeamishness, loathsomeness, stomach acidity, stomach pain, vomit and abdominal pain, doesn't want food, molar pain. Others are general malaises: headache, sea-sickness, low back pain, drowsiness, cold, fever, pain at the veins, vein tumefied, "bolencia" (like drunk), belly pain, bone pain, legs pain, smells that unpleasant, legs varix, legs cramps, "Pallula" (pale), weight loss, shivering, dismayed, "dolamas" (pain), great "dolencia" (pain), body "bajada" (down), "Flusiones" (body pain), brain pain, my body gets sleep, feet pain, recharged feet.

Some of these malaises are anaemia suggestive: Sea-sickness, "Bolencia", doesn't want food, headache, drowsiness, cold, "pallula", dismayed, weight loss, brain pain, recharged feet, my body gets sleep.

They mentioned to spirit changes in pregnancy that can be also anaemia suggestive: susceptible, hate the husband, hate other people, laziness, haughtiness, no willing to do anything, mad about everything, only sitting, reluctancy, exhausted, weakness, "haragana" (lazy), no willing for exercise, with anger, feeling bad, fighting with kids, nightmare in the body, variable temper: sometimes good, sometimes bad, with wrath, behavior changes, sadness,

Some of the women said in the contrary that they don't have any malaises during pregnancies, and that they worked all the time.

In Hornitos an approach to the forty days diet was made. "It's a men free diet, nevertheless there are some house chiefs that doesn't understand diet and have sex in those days". Some women lost their uterus because of such practices.

2 ANAEMIA

Almost everyone knew the anaemia term when applied to the description of an anaemic pregnant woman. Anaemia makes blood changes like:

- "Blood becomes watery, people hasn't life and get tumefied"
- "Thin blood"
- "Even the heart work, inspiration is over and become ghost"
- "Blood is too liquid"
- "It's an illness blood is losing, our life is blood and gets away"

Anaemia causes is related mostly to the lack of vitamins and food. Some mentioned that can be due to several causes "mosquito, careless, work too much, don't drinking water, parasites, an infection, kids come too soon, don't go to prenatal care control, menstruating "desmande" (foulness), or the creature is weakening the mother

Anaemia could be deep and the people gets black and pimples skin, is severe and can't be healed, is the anaemia that could kill. The other anaemia can be healed with vitamins, they called it simple

Anaemia produces the following symptoms "drowsiness, thin people, "pallula", no color or yellow or whitening color, laziness, tumefied, at noon they don't sweat and don't get warm by the sun, "bolencia", dismayed, no valor, without forces, with affliction, with anger, sad, neadache and body pain, don't want to do anything, exhausted, thin, minutes, without spirit, with cold, feet pain, weak, decayed, yawning, lacking of breath and energy, brain pain, sad and sink eyes

Among consequences due to anaemia in pregnant women they mentioned that the following affects kids "The kid born with anaemia, weak, low birth weight, no growth, malnourished, impaired, without force, no healthy" Women can have "abortion, no weight gain, decayed, death risk for her and the child, no strength for delivery, an anaemic women can't get pregnant "

Among anaemia treatments they mentioned the following homemade remedies Calaguala (plant), plant medicines, "pericón" (plant), "manzanilla" (chamomile), "quina" (plant), liquidambar (tree), "escursionera" (plant), afternoon flower, "Claveína" (plant) roots, "alucema" (plant), vegetal medicine and tinctures, "Romero" (Rosemary plant), fat pepper, smell nail (plant resembling nails), "Cuculmea" (plant), cinnamon, regulator wine from roots, "Coronada" (commercial) essence, royal cedar skin, "cuchera" (plant) roots, organum, "Jinicuite" (tree) or naked Indian tree

They mentioned foods to handle the anaemia black bean soup, soy bean and milk, vegetables like pumpkin, plantain, potatoes, "yuca" (root) and "pataste" (vegetable), beef and chicken soup, goat milk, papaw, melon, red beet, radish, tomato and carrot juice, fish, "nixtamal" (Maize food) juice, baked goat or pigeon

They talked about pharmacological treatments liquid and tablets vitamins, vitamin injections, raw liver extract, "Sueros" (fluids for IV injection), B complex, red little tablets and rose, "Cerenervón" (commercial tonic), life pills (commercial)

3 SUPPLEMENTATION

In these two remote rural areas the women showed similar knowledge about iron and ferrous sulphate. Some of them can't relate iron with anything, they never heard of it. Others did know that the ferrous sulphate is a vitamin, but only in liquid form for kids. The ferrous sulfate tablet was shown to the Peñita women and none of them recognize it, they said they never saw it before.

Nevertheless other people identified the ferrous sulphate as the vitamins that were given to pregnant women at the health center with the prenatal caps and other vitamins. Some women, in addition to identifying it as a vitamin, related it to the blood and appetite. "Is a vitamin to strength blood and take eating appetite"

There are some benefits associated to the ferrous sulphate. To combat anaemia, to heal blood sickness, to see red blood and not thin but thick, to strength blood, for appetite, relieve laziness, relieve drowsiness, to make house jobs, help the body, protects mother and child, gives strength to child bones and teeth, to avoid malnutrition, to recover forces, to get force at delivery. "Kid is growing at his measure and there is more strength at delivery"

Some women said that they hadn't feel any malaise or side effects while taking ferrous sulphate pills. Some of them were pleasant with the appetite that produces.

Nevertheless others complained about ferrous sulphate side effects: stomach pain and burning, headache, loathsomeness, squeamishness, sea-sickness, tablets belching, the smell of vitamins goes up, mouth bad taste.

They were asked about the reason for women stop taking the tablets. They answered that this was due to side effects sometimes, and sometimes there were some beliefs that make women abandon supplementation. They mentioned the following factors: "make face spots, kids gets bigger and they couldn't deliver them, women are rebels, kid doesn't like it, combination with other pills can harm, they forget it."

One older woman said "I think is bad to take it because kid couldn't resist it and dies, Of course it's bad taking many pills when you're "interesting" (pregnant) "

Commonly supplementation with ferrous sulphate is taken once daily, nevertheless some told that they took it three times a day with every meal. Some women said that they take the pills with orange juice because they have been told to do so at health center. Some women said that they take tablets at breakfast, to remember easier, and if they forgot they take it at night.

Women who had identified iron as a vitamin talked about its presence in several foods like bean soup, vegetables and fruits. They also mentioned several commercial presentations like Medox, Hemocitón, Iodized radish and Nervoforza, a red dust presentation called iron bicarbonate, and a wine called red calcium wine.

When asked about if they would pay for ferrous sulphate, some of them answer yes, talking prices ranged between 1 lempira which is the price they usually pay at health centers, what ever is necessary to pay for. Nevertheless others claimed that they wouldn't pay because they were too poor, or that they got the right and they got to be free.

4 ALIMENTARY

Whims are defined like "Is a wish for rest, and when you've got it in your hand you don't eat it. You wish something and until you get it you get satisfied. The baby is asking for it." "Whims is little, when you ate too much you vomit." There is the belief that if these whims aren't satisfied they can loose the baby (miscarriage) and this produces practices like offering every meal to the pregnant.

Some whims were mentioned "chicken soup, fried chicken, meat, cheese, butter, "quesillo" (kind of cheese), acid things, fat from Chicharrones (skin fat), sweets with salt, lemon, green things, hot chili, sour taste, "nacatamales" (maize meal), beef soup, fish, "torrejas" (traditional meal), alcitrones (sweet), tender mangoes, pineapple, bananas, watermelons, peaches and guavas.

Some women talked about the husbands whims "I've didn't have anything he ate everything" "if man is anaemic he had to search".

They talked about substances that aren't considered as foods like soil, vaporized soil like when rain begun, salt, grind coffee, flat stones, bicarbonate, "guaro" (alcohol) and wine. One woman said that this is due to the lack of vitamins "I wanted to eat soil and I felt loathsomeness about me, If I don't ate it I Couldn't sleep, that because the lack of one vitamin."

They mentioned the following foods like goods for the pregnancy fruits, vegetables, chicken soup, bone with meat soup, cheese, beans with tortilla, any liquids. One woman said "don't you see that the substance goes trough the placenta, what you eat."

Generally they recognized that eating is important for the mother, and the kid to avoid problems, although is important to prevent excess to avoid delivery problems.

There are bad foods or foods rejected by women potatoes, rice, butter, spaghetti, lemon, eggs, lard, orange skin, mature roasted bananas, pineapple, beans, cheese, coffee, prickling things, bull meat They rejected alcohol and tobacco

After delivery they mentioned eating cheese, chicken and potatoes during forty days, Toasted tortillas with cheese, sweet chocolate, vegetables soup, cinnamon tea, fruits, white maize chocolate called "tizate", pinol (seed) with milk, home made bread with coffee, hot cocoa in the morning, hen, bean soup until twenty days

Nevertheless some foods aren't consumed because they make illnesses For example they can produce uterine or kids infection the following sweet or acid things, eggs, onions, rice, goat milk and any milk They talked about burning at the belly when you ate wrinkled things and pigs lard Avocados, white cabbage, pumpkins, onions, "pataste" (vegetable) and green things produces kids "muclé" (green stools and colic pain) Hen, lemon, eggs and Chorizo (kind of sausage) impairs blood One woman while telling that you must eat toasted tortilla with cheese said "soft tortillas wouldn't be eaten because they join the stomach, that's why you can only eat toasted tortillas after delivery "

Commonly fresh considered foods like butter, avocados, beans, rice, pineapple, or bananas are avoided after delivery

They mentioned food iron sources like vegetables, orange juice, tender potatoes and "patastes", mature and green plantains, pumpkin and cucumber and fruits

When you deliver at hospital they tell them things that are against their beliefs To protect themselves of this intervention some of them said

"They told us at the hospital that with toasted tortillas and cheese the breast milk won't come down "

"I've got belly infection because I ate everything at the hospital"

"Before diets still, now even the forty days, before they care about us, but now they gave you everything at the hospital"

When exploring about foods or substances that facilitates or impairs iron absorption they talked about coffee, and antacids

B. Factors Influencing behaviors

1 ECONOMIC FACTOR

It's associated to bad nourishment, anaemia risk, low birth weight, and the impossibility to buy iron, vitamins and some foods. Economic situation is very hard these days and that influences nourishment of pregnant women and birth weight. Kids from rich families are heavier than poor ones. Anaemia is an illness for the "pobreria" (poor) because they can't be well nourished.

Some women told that they couldn't pay the vitamins if these were sold. Some said that they don't take vitamins because they get hungry and they can't satisfy their needs. For example:

"Vitamins gives you more hungry and what are we going to do? Hunger crying? We don't have money!"

One midwife from Ajuterique older woman group said:

"That's why the newborns doesn't weight what is expected because they don't eat what a pregnant woman should. Look if the man wins 20 lempiras and the maize "medida" (5 pounds) cost 35, and if he has eight kids, what is going to give them? What vitamins could eat this woman? One tortilla with salt, two glass of water and then she lies down to sleep. Then when delivery time the kid comes malnourished and the mother suffers because she don't have good nourishment."

Health center is seen like an alternative to get services and vitamins when they don't have money. In Peñita they claimed against buying vitamins because they don't have the economic solvency to do so.

2 FAMILY FACTORS

Many women are influenced in her nourishment by their mothers, mothers in law, midwives, grand mothers. Although older women expressed that youngsters doesn't bring them attention, they always influenced their behavior. Young woman consults to her mother or mother in law in the pregnancy matters, and several times she takes the remedies that are indicated by them.

3 KNOWLEDGE

Knowledge and prior experiences of women influence their future behavior. Sometimes it's mentioned that women doesn't take the tablets because they're ignorant. It's also been said that if woman knew the benefits from supplementation and iron they wouldn't abandoned the tablets given at health center. Teen pregnant which are not experienced, don't want to go the health center, don't worry about taking iron and vitamins.

4 GENDER RELATION

In focus group discussions it's been asked to women and men who is more valuable man or woman? Answers to that questions show women submission to men

A sentence was repeated constantly at the rural communities by several women "Where a man stands, can't stand a woman" This inequality relation is justified with several social constructions

For example many men and women talked about religion to justify genre differences "Woman is made from a man rib" "Man is the chief tells the holly bible" "God word say that woman is subdue to her husband "

Biological differences are also said to justify genre differences "There are works that only a man can do, we the women are weaker" Economic factor is also said to justify "Man is more valuable because he works in the field, because he makes more money" "man is the home head, without him there is nothing we die starved" Even at delivery midwives said "If it is man cost 20 lempiras, if it's a girl just 15 "

Some people said that both genders have the same value, but that each one has special tasks Woman should take care home, make home jobs, the nourishment of family and raising the kids Man should look out for family maintenance Although they agree saying that man is the one who governs the house One over 49 aged lady in Peñita said "Everyone in his field, woman can't be family head, regarding women rights man must be the first"

A forty years old Ajuterique woman said "I can stand where the man stands, because now he isn't here and I govern"

Some women claimed they were not agree with this situation One Rivera Hernandez older woman said "I used to work outside, but now I'm in the house, today I'm submerge to ask money for a refreshment " In Flores one young woman said "Man doesn't want that woman get developed in social, educative or political field, they are selfish only they want to be "

There were some women that said that they were more valuable than man One of the most emblematic expression of this was "There are men that are la "maceta" (useless), and woman had to work instead of him " A young woman in Rivera Hernández said " We are at the new wave, today we are more valuable because we are smartest, today we can let them rule us, we are at a beautiful moment, one woman gets work easier than man"

C. Distribution channels and Communication media

DISTRIBUTION

Women selected for focus group discussion identified the health center as the only place for iron and other vitamin supplement distribution. It was hard for them to give alternatives. They're used to associate supplements with the health center. Nevertheless some of them may approve that the midwives gives them the tablets.

Midwives said that they give information to every pregnant woman, but sometimes this isn't enough them. A Flores midwife hopes that vitamins will be placed in place, she thing that the only way of having women attention is bringing them medicines. In all communities there is community personnel. The health guardian uses to distribute medicines among population, but now this only happens at the health center.

In the communities where transport facilities are better (Periurban or rural non remote), ferrous sulphate tablets can be bought in drug stores or clinics. In remote rural areas only a little community medicine shop was identified as a place where you can access to the ferrous sulphate. This shops are locally administrated and are patronize by Non Government Organism.

One woman in Flores suggested that the tablets could be placed near to every women if they were sold in each store like "aspirin" does."

COMMUNICATION

Women want to have more information. They need to be oriented, is important by any way. Personal communication about health happens mostly at the local health services trough midwives or some program promoters (Fosters parents Plan for example). In Ajuterique people said that they have good relations with health personnel, but they hadn't give them any conference on any health theme, neither anaemia. Others said that there are such conferences, but women don't assist. During the data collection time no personal has given any conference to the pregnant women.

Personal communication is the valuable media for people participating in the focus group discussions. In addition to this they mentioned electronic media like the radio. They mentioned some local radios and national radios like radio "America". Some listen to a medical radio program conducted by Dr Mario Rivera called The physician and your health. An Ajuterique woman said that she wouldn't eat banana with milk because in that program it's been said that it overweighs children too much.

Some women who has T V mentioned that they saw the "Mujer Ahora" (women now) program, where health topics are discussed , and other five minutes program in other T V channel But they mostly uses T V to watch novels

Referent to written communication women said that they will be concerned about reading posters and pamphlets (men will not) but now there are not such materials In Hornitos health center there was a poster about prenatal caps for anaemia prevention, produced by International eyes foundation This was the only communication material found

COMMUNICATION CHARACTERISTICS

Women at focus groups said that for anaemia and supplementation they had confidence in people like physicians, nurses, women, and the focus group coordinators The communicator should have some characteristics like amiability, good relation, nice way to invite, give woman help to get her comfortable, quiet and happy, That they speak simple, easy to understand, with the truth, talking "without underwear" (traditional expression) , humble to get confident Nevertheless some men and women suggested the use of force (beat her) or intimidation to make women learn and take the tablets

The preferred place to receive instructions about anaemia is the community center or even the health center, with other women Idea of having intervention at home was avoided because some argued that they may feel uncomfortable with the woman owner of the house and so may be absent from meetings The conference must be given by someone who knows, preference for a woman They may not believe in if some people like them gives it

To make women take the tablet is important to counsel them, invite them to assist to prenatal care controls, tell them to take their vitamins, tell them about the vitamins in the nourishment, give them conferences

Many women that starts ferrous sulphate or prenatal caps supplementation aren't aware of their utility because none has never spoke to them about it, they only tell them how to swallow them

Some sentences to motive were told "If she loves her son she take the vitamins" "If we go to the center is because we love each other and we want to live" "That she eats for her and for her son" "I love myself that's why I pay attention at control "

Themes

They would like to hear about women and childhood themes because they need it. Orientation about reproductive health, no too late or too soon pregnancies, about the newborn, breast feeding, anaemia, iron supplementation. "Orientation is the best when you have anaemia"

Integral Child Attention Program (AIN)

AIN program is established in Flores and Hornitos, and is beginning at Rivera Hernández. Focus group discussions were made with program monitors in the first two communities.

Flores monitors are a mixed group of teenaged single women and young mothers aged around 27.

Their work as AIN monitors in their own words is "Help people to get weight control of their kids, if they are malnourished give them vitamins like ferrous sulphate." "If we detect a low weight kid we give him vitamins, and we refer him to the health center, and the nurses and us give orientation to the mother for his nourishment, and vitamins are given to make child gain weight."

Some monitors said that they have helped at the health center to weight pregnant women with nurse. They receive orientation at the health center. Some of them complained that they aren't notified to assist monthly meetings made last working day each month at the health center.

They all work voluntary. They were collected by nurses after promotion of an injection training.

At the beginning they didn't have support from their neighbors, but now they have great confidence among people. They support health center activities like vaccination campaigns and vector elimination. They think that they can help pregnant women to assist prenatal care controls and take supplementation if they were training to do so.

Nevertheless they complain that actually they don't have any supplies, and that difficult their pregnant women work. Last program monitors meeting was made since two months at the study time.

In Hornitos the program monitors are too health guardians, collaborators or midwives. Program isn't well established at this community and the women doesn't recognize the monitors.

There is a communication problem between nurse and several local resident at Hornitos, and this has impaired program implementation. Some health center neighbors don't visit it and prefer to go to the municipal health center miles away. None of program monitor lives at the village core, they come from outside houses.

At the study moment they were not making any activities related to their integral child attention program monitors. Nevertheless they're very active when nurse need them. One of them is the nurse voluntary auxiliary at the center.

II HEALTH SERVICES

Health centers usually are open 5 days a week from Monday to Friday, but during the study onset only health centers with physicians, Ajuterique and Rivera Hernandez, were open to the public that period.

Prenatal care service is bringing every day after kids attention. In all the centers the usual number pregnant women seen every day was about 2 or 3. Only at Peñita the health center covers 100% of the pregnant women living in their influence area. Peñita is the smallest community. NO assistance pregnant women program is holdout in any community, but in the future maternal bond is expected at Flores and Hornitos.

Physicians, professional and auxiliary nurses practices prenatal care. In every control they make physical examination, maternal anthropometry, and if it's indicated, vaccination. None of the health centers has laboratory service, the anaemia diagnosis is made on clinical criteria from physical examination and interrogatory.

Pregnant women wait an estimated two and a half hours to get attention. They pay a small fee in each visit that ranges between 1 and 2 lempiras.

Only the Peñita health center doesn't have a pharmacy room. In all the health centers liquid ferrous sulphate and prenatal caps were founded. Ferrous sulfate tablets were found only in Hornitos, folic acid in Rivera Hernández and Hornitos, and Multivitamins in Rivera Hernandez, Ajuterique, and Flores.

In all the centers demands on pregnancy supplements exceeded the offer. Reading last years Kardex (inventory), none center had vitamins or mineral supplies all the year.

In all centers, the personnel claimed that they give to pregnant women education, nevertheless only one auxiliary nurse said that this is the product of an intervention curricula(programm) supported by public health ministry. All health centers got educative materials posters in their walls, but no one has for distribution among patients. Posters themes are about vaccination, AIDS, family planing, vector control, and nourishment with vitamin A and Iodine food sources. Only in one nurse center a poster on anaemia and prenatal caps supplementation was found.

Over the week in which data collection was made no health center personnel had educative interventions on patient while waiting been attended. Patients were talking with others patients or relatives, and little attention was made to the wall posters.

The two physicians working at Ajuterique and Rivera Hernandez were interviewed. They both have less than one year of service at their post, and hadn't received any instruction about obstetrics emergency, anaemia, pregnant nourishment or breast feeding since their work onset.

They indicated that the following were the cut off values to diagnose anaemia.

Table 1 Cut off values for anaemia diagnosis mentioned by physicians

Anaemia cut off values to diagnose anaemia	Physician 1	Physician 2
Men	12	16
Pregnant women	11	11
Women non pregnant	11.5	13

*They agree only in pregnancy cut off value

They both considered that anaemia is commonly seen during pregnancy. They both agree that pregnant women must be supplemented since the pregnancy second period.

One considered that anaemia prevalence in his community is higher than 75% and the other has no idea about it. They both considered that people in their communities considers anaemia an illnesses of little importance.

Two professional nurses working at the same centers were interviewed. One of them has less than one year of service and hasn't received any training relative to emergency obstetrics, anaemia, pregnancy nourishment or breast feeding. The other has nearly three years at her post and received instruction two times about obstetric emergency, once about nourishment during pregnancy and once about breast feeding and women nourishment.

They indicated that the following were the cut off values to diagnose anaemia:

Table 1. Cut off values for anaemia diagnosis mentioned by professional nurses.

Anaemia cut off values to diagnose anaemia	Nurse 1	Nurse 2
Men	12	12
Pregnant women	10	11
Women non pregnant	9	11

*They agree only in men cut off value.

They both agree that anaemia is commonest during pregnancy and that the pregnant woman must be supplemented since the pregnancy second period.

One of them thinks that anaemia prevalence in her community is lower than 25% and the other thinks that it is between 25 and 50%. They both considered that people in her communities see anaemia as an illness of little importance.

One of them considered Iodine and vitamin A supplements during pregnancy to prevent anaemia.

Eight auxiliary nurses were interviewed at the five health centers. Only one of them has less than one year of service, and hasn't received any training in obstetrics, anaemia, nutrition or breast feeding.

Other has about ten years working as auxiliaries. Nevertheless only two of them did receive training on these topics.

They indicated that the following are the cut off values to diagnose anaemia:

Table 3 Cut off values to diagnose anaemia mentioned by the eight auxiliary nurses

Cut off value to diagnose anaemia	Auxiliary nurses							
	1	2	3	4	5	6	7	8
Men	12	11	13	13	11	12	12	12
Pregnant women	11	12	12	11	11	11	12	10
Women non pregnant	11	11	11	11	10	11	12	11

*Only nurses 1 and 6 agree in their values, nevertheless they don't work at the same center or even the same health region

They all considered that anaemia is commonly seen in children. Three of them considered that it also affects women in her reproductive ages. They all agree that it is commonest during pregnancy.

Relative to supplementation, four agree that it is not necessary if diet has iron food rich sources, and the other four agree that it is necessary since the first pregnancy period.

Seven nurses considered that anaemia is seen as a little importance illness at their communities and the other considered that it has no importance at all.

Three considered that it is necessary for anaemia treatment to give vitamin A supplements to pregnant women.

The remaining personnel working at health centers were interviewed too. They recognized anaemia signs and symptoms. Almost every one considered that in their communities anaemia is seen as a little importance illness. Nevertheless, all the concierges and one promotor considered anaemia like an important illness. Concierges are the only health personnel that were born or lives in the communities where health centers are.

III IRON TRAIL

In Flores 25 women agree to initiate supplementation and were visited by research team in their homes. Every woman got 30 tablets with instructions to take them one daily since the visit day. Same procedure was followed with the 6 Peñita pregnant identified.

Nevertheless, only 18 from the 25 originally admitted women answered the follow up interviews one week later. They weren't at their homes, some of them and two refused to continue on the trial. At Peñita all 6 women continued participating.

A total of 24 women were interviewed at the two communities. Only one Flores woman said that she hasn't take the tablets because she was afraid of becoming overweight.

Although they were aware to take just one tablet daily, two women said that they have take them three times a day, arguing that this would give them stronger, quicker. Twenty one women claimed that they have taken the tablets just as they been told to.

Nevertheless they were asked to show the purses with the tablets and the remains were counted. The amounts of tablets found were the following:

Table 4. Tablets account one week after supplementation onset.

Tablets founded	Frequency	Proportion
3	1	4.3
10	2	8.7
12	1	4.3
15	1	4.3
18	2	8.7
20	1	4.3
21	3	13
22	6	26.1
24	2	8.7
25	1	4.3
26	2	8.7
27	1	4.3
TOTAL	23	100%

Only 26.1% of women (6) have the expected number of tablets in their purses. Neither with women who claimed swallowed three tablets a day the number founded was the expected. They all denied give supplementation to others in their homes or losing or throwing away the tablets.

Ferrous sulphate tablets were consumed mostly in the mornings 58.3% (14). They all referred to take tablets with water, or in two cases with orange juice or milk.

Related to physical characteristics of tablets there weren't any objections about their color or size. But there were objections about their taste. A 26.1% (6) claimed that her smell was unpleasant, they characterized it as "moho u oxidado" (oxide or moss). While a 33% (8) claimed their aversion to the tablets taste telling that it was like "moho" or that they were belching tablet all day long.

About supplementation side effects 29.2% (7) of women claimed that they had at least one of them. Sea sickness was mentioned four times, headache in three, "bolencia" (like drunk) in three, spitting in two, tablet belching in two, diarrhea in one and constipation.

When asked about if they would continue to take the tablet all 23 women that had taken supplementation claimed that they will.

Benefits listed by women from supplementing were to heal anaemia and strength blood 45.8% (11), and to strength mother and the child 29.2% (7).

Major problem mentioned to get the tablets was the lack of it supplies at the health center 41.7% (10) and their price at stores or drug stores 20.8% (5).

Just 13.1% (3) mentioned to have problems to take the tablets. They said they always forgot to do it.

A 79.2% (19) answered that they will be agree to pay for supplements. Prices mentioned for 30 tablets vary from 1 and 30 lempiras. Mean value was 8.19 and median was 6.0. The mode was 2 lempiras 14.3% (3).

Finally they mentioned that they will be confident in health personnel 83.4% (20) to give them the tablets. One of them talked about midwife, other about the general store.

Qualitative Data

Some women participating on the supplementation trial in Flores and Peñita were invited to a focus group discussion relative to the process. These focus groups were made three weeks later the supplementation onset in Flores, and two weeks after in Peñita.

A special guide was designed to discuss topics like the ingestion of tablets, side effects, supplementation utility and access to it.

Regarding to tablet ingestion they all had begun supplementation as prescribed, nevertheless two women in Flores argued that they left it in the second week because tablets were like burst and this made them not confident with their quality "I have been taking it for two weeks but I quit because I was no longer confident when they split and burst "

Other women claimed that the tablets given to them were split too, but they have continued taking the tablets They thing that tablets were split because of heat

Some said that they take the pills with water Nevertheless one participant claimed that with only water produces stomach burn on her and because of that she made it with milk Tablets are taken any hour at day, but mostly after a meal

Regarding to supplementation side effects some women said that they haven't felt anything while taking it Others claimed that it has given them more strength "Now I feel stronger, before I was exhausted, now I've got more eating appetite " They mentioned squeamishness and drowsiness as supplementation side effects

Utility of tablets is to give more appetite to women and this for some is good because they've got forces for delivery time and helps the child Nevertheless claimed that it wasn't so good because it overweighs them "To women helps for anaemia and to the kid for strength him and to avoid him illnesses

When asked if they would continue supplementation, many said that yes Nevertheless a Peñita woman said "After we would not be able to deliver it because it would be too grown "

When asking what would happen if they left supplementation they mentioned the following "can born malnourished, we are going back, you can feel the change, you don't feel the same the appetite and force" "If you are "coldly" you stop being, if you stop taking it the kid born with cold "

All women claimed that they will not have any difficulties to continue taking the tablets Physical aspects of tablets seems good to them because "its little and easy to swallow it" Nevertheless when talking about their characteristics they said that their taste is "horrible" and describes it like "moho" (moss), with a bad taste in the mouth that remains, and that they were belching the tablets all day long

They were asked about things that help them remember to take the tablet and no responses were made They just only remember it

If they were responsible to promote the tablets, this would be what they would tell to other women

"That they take the tablets because it's a good for her and the kid"

"Make her conscious because medicines are expensive and if they give it to you must take it "

"Tell her that it strengths her, that helps you in the blood, and the body, that we already had taken it "

"Invite them and motive them to take it"

"That thy take the vitamins because they will get hunger"

When asked about if they will pay for the supplements , all of them claimed that they will Only a women said "Only if we were without any money, we couldn't pay them " All considered that it was fair to pay for them and that their husbands will be agree to pay for them Prices mentioned ranged between the 2 and the 15 lempiras In addition they said that they will buy the tablets on the drug store if supplies were over

They would prefer that the tablets were given at the health center because is quicker and it's a place where everybody goes One women said that she couldn't buy it to anyone because you don't know what it's been sell or if they are legitime tablets

After discussion some women talked about their beliefs about supplementation and the tablet

" Eat lemon and take the tablet is bad because it cuts the vitamin "

" Any tablet that you take must have something (food) in the stomach"

" Ferrous sulphate make spots on the face"

" Ferrous sulphate overweighs too much and delivery gets difficult "

Ferrous sulphate tablets are the same given by public health ministry They were distributed in plastics purses like health centers does Tablets in contact with environmental humidity looses their enteric cover and looses red color in their sides, that's why many women talked that they were burst

DISCUSSION

Iron deficiency is with no doubt the commonest nutritional problem in the world It's prevention must be made with several interventions like iron supplementation, food fortification and improving dietary patrons in the population

To have an effective supplementation it is necessary two things That the supplements has physical, social, economical or cultural access to the people, and that those persons wanted to use it

Does women want to use the supplement?

We are going to talk first about the fact that people want or don't want to be supplemented. People will agree on supplemented if profits from this practice are bigger than costs. Nevertheless to do this profits and cost supplementation balance lets start to review the knowledge about the problem.

The term anaemia is widely known in all communities where study has taken place. People often recognizes anaemia as an illness that impairs blood, lowering its quality or its quantity or both. "Thin blood or lack of blood"

Population got some basics concepts regarding the illness and a relation with prior health services intervention is perceived because they uses words like haemoglobin, red cells or transfusion.

Many people could characterize an anaemic person, they related the illness with being pale, fatigued or weak. Anaemia may be easy to recognize because the self experience or the people living around experience.

Anaemia symptoms are easily recognized by population and even diagnosis can be made by people not related to health work, looking pale, weak and fatigued persons. Some have learned to see eyes conjunctive looking its color. This evidence that there is familiarity with the problem.

It seems that anaemia classification in two types is well established.

-light anaemia Is commonly seen, could affect everyone and can be corrected with vitamins.

-deep anaemia Is sever, it damages persons health status, they got a dramatic picture and its associated to women or kid death.

The last one doesn't heal with vitamins only, is necessary to bring the ill to the hospital. People is afraid of it. They related several fatal experiences with it. People who knows this stories could be more sensible to help and to accomplish the supplementation process.

For the anaemia treatment they mentioned a lot of homemade remedies and foods. Many of them are related to color red, bloods color. This seems logical because you want to heal a blood illness. It shows that there is motivation to deal with the problem, although this motivation is bigger when referred to deep anaemia.

They agree that this illness can be heal by pharmacological treatments Vitamins Those vitamins are accessible at the health center Nevertheless they also have access to other iron and other vitamins presentations They mentioned commercial iron brands, parenteral iron , and even hospital treatments like packed red cells There are experiences on anaemia treatment with several pharmacological products with generally good results This could also be one factor that helps supplementation

Nevertheless not every one could related iron to vitamins or the ferrous sulphate Some of them don't know what is iron or what is It's utility, others characterize it as a vitamin for blood Ferrous sulphate is always associated as a vitamin, but it is more often see as kid vitamin because It's availability in liquid presentations for children To the pregnant women vitamin supplement most recognizable was the prenatal caps This could be due to the fact that lately no regular supplementation process with ferrous sulphate has been done at public health services It is common that women complain that they receive supplementation in an automatic manner, without getting information about its benefits

Some ones that related the iron as a vitamin considered that this could be obtained from food, and that there are food sources These foods are from diverse origins Commonly beans are mentioned , also vegetables and fruits People may thing that these foods are vitamins reservoirs Nevertheless they uncommonly mentioned green leaves or red meat as a source This could be related to their low consumption among diet population Milk has an image of strength and is widely recommended for anaemia treatment

This phenomenon pointed the need to have better alimentary guides easily recognizable to improve food source consumption and to exonerate from dairy products, properties that they don't have

In addition consumption of food that enhances iron absorption can be achieved like citric with their source of vitamin C during meals And at the same time to avoid practices that impairs iron absorption like coffee consumption during meals

During supplements ingestion these conducts may not have the same impact on iron absorption, but they can represent difference between requirements satisfaction or not during pregnancies

There are several opinion for and against supplementation

For	Against
<ul style="list-style-type: none"> -Strengths mother, specially at delivery time -Good for blood that gets thick and red -Strengths kids made them healthier and robust -Benefits kids bones and teeth -Rises haemoglobin -Gives hunger so you eat more and gain weight -heal anaemia -controls pressure -Improves pregnant spirit -Gives work energy -helps to collect breast milk -Gives hunger to the kid -Is cheap and easy to access 	<ul style="list-style-type: none"> Side effects loathsomeness, vomits, stomach burn, pain, etc -Kid gets to fat and delivery gets difficult -Since the kid is bigger they made episiotomy during delivery -If it is too big they can get a cesarean operation -Woman gets fat -Kids got pricks in their teeth -Woman get spots on her face -Gives hunger and there is nothing to eat -Can cause deformities on the child -Since It's cheap got no status, no stimulant to take it

This table announces study findings without any particular order or related to their frequency Side effects and the belief of making bigger kids seemed to be the main factors for abandon iron supplementation

If one woman got cesarean operation, and had been told that it was because her child was too big, and she considered that It's ferrous sulphate fault, then it will be very hard to make accept her supplementation On the contrary her negative experience may influence other women to stop supplementation

People want to heal anaemia and for it they use from foods to medicines Nevertheless supplements are given to pregnant women in a period when it seems that she isn't ill Since the major benefit from supplementation is to heal an illness, when this is not present the benefits of supplementation can't be seen To reverse this conduct a strong communication intervention must be done People could identified risk of no supplementation during pregnancy and motivate their selves to accomplish it

¿Do they have access to supplements?

The other major factor necessary to have a successful supplementation is that supplement are accessible These accessibility is influenced by several factors Physical, socioeconomic, culture

PHYSICAL ACCESS

Physical access to supplementation in the past was synonym of supplements supplies at the health center. Pregnant women on prenatal care control could access to the supplements.

Nevertheless there are two major limitations now for physical access. Some times there are not any supplements at health centers and not every pregnant women assist.

As documented in this study vitamins supplements aren't always available at health centers. Ferrous sulphate or any vitamin supplement had instant visual effects on peoples health. When an antibiotic is prescribed, a specific and felted problem is treated, if treatment is effective in a few days problem is solved. When you supplement you are dealing with a problem you can't see or touch.

When supplies requisitions are made, vitamins can be sacrificed for others medicines that are presumed more needed. This conduct prevails at every public health level.

There are some other practices like give supplements as placebo, or to avoid patients pressure for treatment or to be pleasant with them. In this study the last ones couldn't be documented but in the researchers experience health work it has been usual. This lowers the supplies pools.

Not every pregnant woman assist to health centers. Some of them may in prenatal control at other health facilities, but many others simply don't assist to it. Pregnancies list in health centers don't include the real number of pregnancies in the community.

It's common than pregnancy detection is made until the last pregnancy period limiting supplementation to a few days only.

Women in the study recognized health center as the place where to access supplements almost exclusively. They've mentioned others places like drug stores, or medicines community shops as alternatives to access supplements. Nevertheless these alternatives aren't recognized by every one.

Is necessary to make an intervention at the health system to get it's personnel more involved with the problem and promote motivation to solve it. The fact that health personnel could not agree even at the haemoglobin cut off values to diagnose anaemia shows the little importance and the information lack among them.

There is necessary to use access alternatives to the 100% pregnant women. One of them could be use midwives to promote supplementation.

In the last years midwife functions and practices have been evolved. The growing of health services and communication facilities influenced these changes. Midwife could be an excellent way to access every pregnant woman in the community. With appropriate training midwives could reach pregnant since the beginning of gestation and control the correct use and administration of supplements, but most important can communicate with woman in a form that we would never be able to.

SOCIAL, ECONOMICAL AND CULTURAL ACCESS

Economic and social-cultural factors affects supplementation

ECONOMICS

Is a limiting factor important to supplementation continuity, and it's determinant for the anaemia and iron deficiency onset. Honduras has very limited social-economical conditions. Had the second lower income revenue in the continent. That's why several women claimed to be against supplementation because this will raise their hunger and they don't have necessary food to satisfy it.

Not every one is disposed to sacrifice part of his income to buy them. Supplemented women until now have received a lot of supplements paying only a small symbolic fee. Although they recognized to be fair to pay for the supplements not every one is intended to do it.

The mean price reported to pay for 30 tablets was between 6 and 8 lempiras. If today we decide to collect such amount nearly half of the women would not buy it.

In addition no one can assure that they will get supplements constantly if they pay for them.

It seems not recommendable under actual circumstances to establish a fee away from the one that they been used to. Their benefits had to be promoted and little trials must be done in different areas to search a fair price that doesn't affects supplementation process main objective reach constantly every pregnant woman.

SOCIAL AND CULTURAL

Some beliefs affect supplementation. Believe in bigger kids that could impair delivery, in face spots do to ferrous sulphate, in women becoming fat, have been constructed around supplementation since the process has started in Honduras.

Nevertheless other deepest circumstances affects every community based intervention. One of the commonest is gender differences that make women to be submitted to man leadership.

This was evident in communities where the study took place. Women seem to be confined to home and reproductive labors. Her decision power is seriously compromised to the man's will. In many cases, the man decides, for example, how much they are going to spend on family needs. He decides when women should have sterilization to avoid kids. Sometimes he could decide if a woman should or should not be supplemented.

If a man doesn't consider it necessary to control his wife's pregnancy at the health center or even take supplements, the woman has nothing to say. Because supplementation is an action to improve women's health when she carries the reproductive products, there aren't conflicts against it by men. But if this process menaces its dominion, he can block the supplementation process. To prevent it, the men must be sensitized with an educative intervention at his wife's side.

On the other hand, we have to remember that traditional medicine is being transformed and changed every day. Traditional beliefs and practices are replaced by modern medicine. In this process, many of these are forgotten, and let many people without defense and culture. The supplementation process must be aware of it and must help people to reach health keeping their culture.

RECOMMENDATIONS (To intervention)

1. It is recommendable that health personnel at every level should receive a refreshment regarding their anaemia and iron supplementation knowledge.
2. The contents of Women attention normative must be learned to assure that every health center gives the same quality attention.
3. To make an information, education, and communication intervention, some facts were established:
 - a. Anaemia concept no need to be introduced because women and communities all ready knew it.
 - b. Iron concept isn't clear for everybody, it must be related to the following terms: Ferrous sulphate, vitamin, and anaemia.
 - c. The reason and the benefits for using supplements must be told to the community.
 - d. Beliefs that impairs iron supplementation like spots on the face, overweighs, makes big babies difficult to deliver, can cause deformities, must be avoided during campaign.

- e Anaemia symptoms must be clarified from pregnancies malaises in order to aware persons to diagnose it
 - f Make an alimentary guide with locally available foods to improve consumption of the ones that helps iron absorption and limit the ones who on the contrary impair this
 - g Every supplemented woman must be aware of the possible side effects of supplementation, and alternatives to lower their malaises
 - n Intervention must be pointed to women and their husbands to get their support
 - r Is desirable that communication materials could be taken home by the pregnant and spread away from health centers
- 4 Supplements distribution must continue through health centers at least by the moment Nevertheless an alternative supplementation distribution system may be tested with midwives in several communities If this distribution trial works, it can be spread to the others communities
- 5 The packing and presentation of ferrous sulphate tablets must be changed in order to improve It's aspect, a similar format of prenatal caps could be used

Principal References

Frances Sizer and Eleonor Whitney "Nutrition, Concepts and Controverses" Sixth Edition Hamilton & Whitney West Publishing Company, Mineapolis/St Paul, New York Los Angeles, San Francisco 1994

R Schwarcz, et al "Atencion Prenatal y del Parto de Bajo Riesgo" Centro Latinoamericano de Perinatologia y Desarrollo Humano, OPS/OMS Poblacion Cientifica CLAP No 1205

WHO, Division & Family Healt "Prevention and Managnament and Severe Anaemia in Pregnancy" Report of a Technical Working Group, Geneva, 1993

Benjamin Torun, et al "Recomendaciones Dieteticas Diarias del INCAP" Edicion 45 Aniversario, Instituto de Nutricion de Centro America y Panama (INCAP), Guatemala, Septiembre, 1994

Academy for Educational Development "A Tool Box for Building Healt Comunication Capacity" HealtCom/April, 1995 Washington

Mc Laren, Donald S , "La Nutrcion y sus Trastornos" Segunda Edicion Editorial El Manual Moderno, Titulo Original Nutrition and it's Disorders, Mexico 1993

Bengoa, Jose Maria, et al (editores) "Metas Nutrcionales y de Alimentacion para America Latina Bases para su Desarrollo Taller celebrado en Caracas Venezuela, Publicaciones Fundacion CAVENDES (Apdo de cascos) 62191, Chacao 1060, Caracas Venezuela) 1988

Krasovec Katherine, Anderson Mary Ann (editoras) "Nutricion Materna y Productos del Embarazo, Evaluacion Antropometrica Publicacion Cientifica No 529, OPS ISBN-92-75 11529, Washington, 1991

SECPLAN/UNICEF "Analisis de Situacion de la Infancia, Mujer y Juventud" Honduras, 1995

United Nations, Administrative Communitte on Cordination-Subcommitte on Nutrition "Second Report in The World Nutrition Situation" Volume I Global and Regional Results (A report compiled from information available to the United Nations Agencies of the ACC/SCN) October 1992 Volume II Country Trends, Methods and Statistics

Ministerio de Salud de Honduras "Manual de Normas y Procedimientos de Atencion Integral a la Mujer" Departamento de Atencion a la Mujer Division Materno Infantil Tegucigalpa, M D C Abril, 1995