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*About the effectiveness of the  
village health workers inside the NGO  
ACCORD/AMS*

A PHD out of the institut of tropical medicine Heidelberg/Germany  
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**List of abbreviations:**

**ACCORD: action for community organisation, rehabilitation and development**

**AMS: Adivasi Munnutram Sangham**

**GAH: Gudalur Adivasi hospital**

**HA: Health animator**

**MC: Mobile clinic**

**NGO: Non government organisation**

**SC: Subcenter**

**VHW: Village health worker**

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**This work is dedicated to the  
Adivasis of the Gudalur valley  
in their struggle  
for dignity and self reliance**

## ***1 Introduction***

The study examined the effectiveness of the VHW in the health program of AMS/ACCORD. The question behind the survey was, how to continue the village health program and to evaluate the past ten years of that program.

The aim of the study is to evaluate the effectiveness of the VHW inside AMS/ACCORD on the health status of the people.

The aim of the study for AMS/ACCORD was to get an evaluation of their village health program for starting a discussion how to continue the work. Now in every area a subcenter is started or will be started soon. So is it still necessary to have VHW, what was/is their impact on the health status of the people, what is their role inside the whole health program? These questions should be answered in the survey.

The survey is a descriptive retrospective study with a comparison group. (It was not possible to do a analytic retrospective cohortative study, because the documentation about the last years was not complete.)

In **the quantitative part** a group of villages where a VHW is working since a minimum time of 4 years was compared with a group of villages, where no VHW is working. All other medical and political factors of the examined villages are equal (distance to the hospital, subcenter, to the government health services, socio-economic status of the villages).

Each village where a VHW is working is matched with a village where no VHW is working (from the same area, the same tribe and about the same number of families)

The **qualitative part** of the study has its focus on the meanings, attitudes and practices of the people in relationship to the effectiveness of the VHW (**KAP Study: Knowledge, Attitude, Practices**).

The study contains two parts:

### **1.1 A quantitative comparison of four health indicators**

The four health indicators are examined from the view of information/knowledge and from the view of behaviour/practices.

- diarrhoea
- nutritional status of the children
- antenatal coverage
- immunisation status of the children

These four health indicators were chosen, because they represent the main working areas of the VHW:

- immunisation status: Prevention, health education
- nutritional status: Health education and the practical realisation, weight/underweight, knowledge about healthy nutrition and the practical realisation of it.
- antenatal coverage: Prevention and diagnostic

- diarrhoea: Health education, prevention and curative therapy (ORT), incidence of diarrhoea within the last two weeks before being asked

The **strength of this method** is the **good reliability** of the objective data. The **weakness of this method** is the **lack of validity**, and the fact that objective data do not explain the meaning of them for the people.

The **examination unit** is the individual household with a mother and children/a child under five years.

In the study the relationship between objective and subjective health needs, the health system and the positive result for the people is examined.<sup>1</sup>

Is a objective change corresponding to the subjective needs of the people?

In addition to that the co-operation of the VHW with other sector of ACCORD's work, the support from outside and the participation of the people has to be reflected.<sup>2</sup>

For being able to explain the subjective health needs of the people the survey contains beside the quantitative part a qualitative part, too. In that the estimations at the effectiveness of the VHW and the context of their work are asked from members of the health system, the other sectors of the organisation and the village people themselves. The two parts of the study have their focus on respective different fields: Because we have a survey of „hard facts“ in the quantitative part and on the other hand an open subjective way of asking in the qualitative part, which contains a hermeneutic access to values, attitudes and emotions, this combination of methods was chosen.<sup>3</sup>

## 1.2 Qualitative validation of the quantitative statistic

The individual interviews with people of different groups of the organisation are understood as an **triangulation**. The aim of this method is to understand the meaning of the work of the health workers for the villages, ACCORD's work and especially for the health sector of ACCORD. Triangulation means, that different groups (in this case the VHW, animators, health animators, hospital staff and village people) are interviewed to the same issue with the aim to understand the issue from is different sides.

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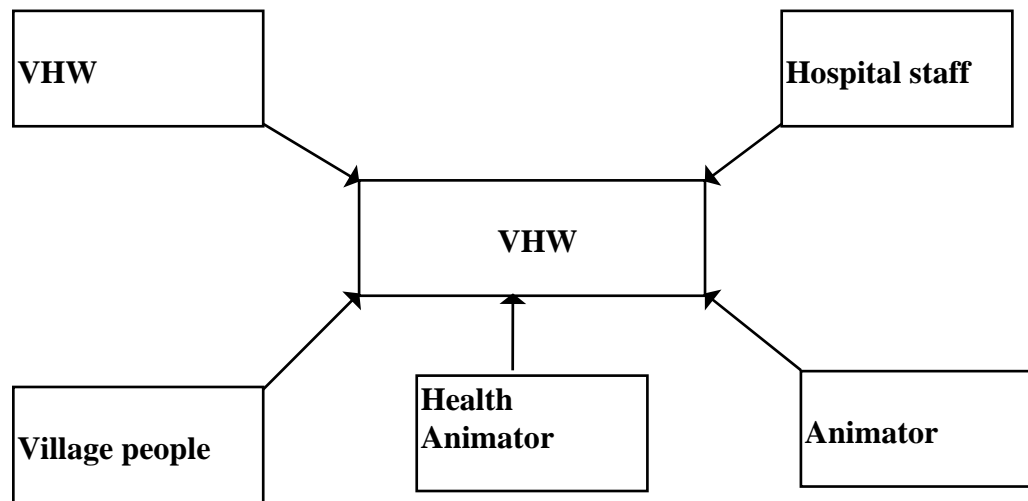
<sup>1</sup> Assessing, p.2

<sup>2</sup> Assessing, p. 3-4

<sup>3</sup> Assessment, p. 4

### 1. Picture:

The way of interviews in a triangulation:



The aim of this method is, that by asking different groups of people in the triangulation, who have each one a different live reality and different ways of thinking, to get a qualitative answer to the issue of the effectiveness of the VHW.

The **strength of this method** is the understanding of the system in the socio-cultural context of the people, which leads to a **good validity** of the study. The **weakness of this method** is that it is **not representative**.

Through the **combination of the quantitative and the qualitative part of the study**, it is tried, to get **valide and reliable results**. In the same moment the limitation if this procedure has to be clear, because both methods present different life realities. That means the weak points of one method are not completely compensated by the other method. In spite of that the combination of these two methods seems to be the best possibility for this study.

### 1.3 Ethics

What is the ethical base for a survey done by a human, a researcher from the north in a southern country? Is it curiosity, adventure, interest in scientific results, concerning about the people? When we are honest to ourselves it is a part of everything. But what can be the ethical base for an evaluation like that? For answering that, we have to raise the following question: What is science and to whom has science to serve? There are two possible answers: Science is existing out of and for itself, that would mean the scientist is not responsible for the results. This thinking has resulted in the atomic bomb. The other answer is: Science has to serve to humans. I do agree with this answer, but again there are two possibilities: Science can serve to humanity in general or it can serve to the humans, which are object of the science. In different contexts both possibilities can be justified. If science is serving to humanity or to a special group and is not harming the people, which are object of the research, this can be accepted in certain contexts. It can be accepted, when the people, which are object of the science are in no way forced to participate, neither in a financial, psychological, nor in any other way. But this cannot be accepted, if the group, which is object of

the research is a structural marginalised group of people. If science is done in an with such are group this can only be justified, if the science if for the benefit of this group. In the moment a marginalised group is object of a research it can be assumed, that the people are not completely free to decide to participate or not, because of the structures of oppression, they are in and socialised. When it is talked about participation, than this has to be true in the consequences, what means to leave the decision, whether a survey should be done or not in the hand of the people, what means not to do the research in case of doubt.

This means not to do many researches, but to see, the research, which are done under these conditions in an other light.

After my assessment, the ethical base for this survey is given: The question of the effectivity of the health workers was a question of the health team, for having a base to answer there question, how to continue the villages health program. Beside, the survey was decided by the all-team meeting and the hospital committee meeting. As well the survey was discussed with all area teams and decided by them for each area. Also all results were discussed with all area teams, with the question of the consequences.

Ethically I hope and think, that this survey is done for the people.

## **2 Material and Methodology**

### **2.1 Preperation**

The issue of the survey was chosen by the health team of ACCORD for getting an evaluation about the effectiveness of the work of the VHW from the last 9 years and for having the survey as a base to discuss the going on of the village health program for the future. The idea of the study was discussed with all meetings (all-team meeting, hospital-team meeting, area meetings) and they agreed to that study. 1995 the main concept of the survey was made. The next year was used by me to work out the more detailed methodology, the questionnaires and to learn Tamil. In the beginning of the field study the qualitative as well as the quantitative questionnaires were tried out in a pilot study and minor changes were done. Also my role as an outsider, especially as an western European and the impact that this could make on the people and on the results of the study was discussed. Finally it was decided, that I could make the survey, because there are also advantages to have somebody from outside for making an evaluation over the work, because there might be a more of objectivity. But still this point has always to be reflected and seen.

### **2.2 The choosing of the villages for the quantitative part**

First it was decided to ask the mothers of the children under five years. For that were the following arguments used:

- the mothers of the children under five years are more at home than the fathers
- about antenatal care only the women themselves are informed
- the women are seen as responsible for health, so they know more about immunisation, diarrhoea etc.. And they are responsible for changes.

In each village all mothers of the children under five years was asked and all children under five were weighed and measured. It was tried to go into the villages in a time, when the chance was good to meet many mothers and children there. How many mothers were hiding or did not want to speak to me is difficult to say.

It was tried to choose the villages per randomisation. On the other hand it was important to get villages from every area, and to the villages with and without a VHW with the same conditions:

1. **same tribe**
2. **same area**
3. **same size (number of families, number of children under five)**
4. **same socio-economic status (school education, land)**
5. **same distance to the SC/VHW**
6. **same distance to the government health services**

For getting a **structural similarity** in both groups the **matched pairs technics**<sup>4</sup> was used: Each village with a VHW was matched with a village without a VHW where the criteria were fulfilled as many as possible. The criteria 1 and 2 were fulfilled always, the others mostly. Villages with a VHW, where it was not possible to find a corresponding village from the same tribe in the same area, were matched to two villages without a VHW in the same area from the same tribe.

**The villages with a VHW were chosen in the following way: a village where a VHW lives in or which is visited by a VHW minimum weekly. These villages are direct influence of the VHW. Only villages were chosen, where the VHW works since minimum three years.**

**The villages without a VHW were chosen in the following way: they are not or not more than monthly visited by a VHW.**

**In both groups only sangham villages were chosen (organised in ACCORD/AMS).**

Altogether a minimum number of 80 mothers in every group should be the condition. So it was decided to get 17 matched pairs of villages, two from every area and one in addition from the whole taluk.

After the villages were chosen, the area teams asked the villages for their participation on the survey.

The question on the socio-economic status is answered the best with the question of land ownership, because land is one of the most important indicators of wealth. Land was in the traditional tribal economy in the ownership of the villages, not of individual families. But with the influence of the main stream society, land got more and more in the ownership of individual families or the villages were taken away the land at all.

For getting an result, whether the villages with and without a VHW have the same conditions the following questions were asked:

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<sup>4</sup> Statistik, p.159

**1. Name:**                    **village:**                    **tribe:**

**2. How old are you?**

years:                    do not know:

**3. Who all stays with you together in your house? (cooks with you together?)**

number:

**4. Did you go to school?**

yes:    no:

**4a. If yes: how long?**

years:

**5. Do you have land?**

yes.    no:

**5.a. If yes: how much?**

**6. How many children do you have?**

number:

**6a. How old are they? (children under five years)**

child 1:

child 2:

child 3:

**7. Is there any health personal coming to your village?**

yes:    no:    don't know

**7a. Who?**

VHW:

GN:

NGO nurse:

PHN:

others:

**7b. How often?**

< once a month:

twice a month:

once a week:

These were the results:

Chart 1:

**General data:**

P: Panyas BK: Beta Kurumbas K: Kartnayakans MK: Moolu Kurumbas Nu.: number Ch.: children Mo.: mothers		VHW: village health worker (ACCORD) GN: government nurse PHN: Private Health Nurse NGO: NGO-health worker aver.: average	
	VHW +	VHW -	together
Number of villages	17	21	38
Number of mothers	91	87	178
P Villages	12	15	27
BK Villages	2	3	5
K Villages	2	2	4
MK Villages	1	1	2
P Mothers	58	64	122
BK Mothers	16	11	27
K Mothers	9	9	18
MK Mothers	8	3	11
Number of family members (average)	4,98	5,03	5,01 s = 1.64
number of children/family (average)	2,69	2,94	2,82 s = 1,66
number of living children/family (average)	2,43	2,56	2,5 s = 1,38
Nu.ch. 0 m - 4 y 11 m	127	130	257
Nu.ch. 4 m - 4 y 11 m	110	115	225
Nu.ch. 6 m - 4 y 11 m	105	111	216
Nu.ch. 1 y - 4 y 11 m	100	104	216
Average age of mothers	25	26	25
Nu. of mo. with school education	21	17	38
Average of school years	6,43 (1,48)	4,88 (0,95)	5,74 (1,22) s = 2,66; (s = 5,34)
Mothers with land	51	42	93
Average land ownership (Acre)	0.67 (0.36)	0.9 (0.43)	0.78 (0.41) s = 0,524 (s = 0,612)
Health personal/village	8	6	14
NGO	0	1	1
GN	8	3	11
VHW	-	1	1
PHN	0	1	1
Monthly	8	3	11

Every second week	0	0	0
Weekly	0	3	3

The **number of the mothers and the number of the children in both groups is approximately equal**. The distribution of the different tribes is comparable to the distribution of the tribes in ACCORD. The Irulas are nearly not organised in ACCORD. The distribution of the different tribes was taken care only so far, that the matching villages are from the same tribe.

The **number of children/family** is also nearly equal: in the villages with VHW 2.69 and in the villages without a VHW 2.94 ( $s = 1,66$ ). The number of living children is 2.43 in the villages with a VHW and 2,56 in the villages without a VHW ( $s = 1,38$ ) When this is proved with the **student T test** (formula 2.4.) is  $t = 1.0$  for the number of children and  $t = 0.62$  for the number of the living children. For  $f = 176$  and  $\alpha = 0.001$  both is  $< 3.29$ , the critical value, so there is no reason to disagree with  $H_0$ , which says that there is no difference in the villages with and without a VHW according to the number of children.  $\alpha = 0.001$  has to be chosen according to the **Bonferroni estimation**<sup>5</sup>, to oppose the danger of the **multiple testing**. The other reason to choose  $\alpha=0.001$  is, that the data is „week“, so to get valide results,  $\alpha$  has to be very small.

The **number of family members, who built a common household** in the villages with a VHW is 4.98, without a VHW 5.03 ( $s = 1.64$ ). According to the **student T test** is  $t = 0.14 < 3.29$  for  $\alpha = 0.001$  and  $f = 176$ , so there is no reason to disagree with  $H_0$ , which says that there is no difference in the villages with and without a VHW according to the number of family members.

The **number of mothers with a school education** is in the villages with a VHW 21, in the villages without a VHW 17. According to the **X<sup>2</sup> test** (formula 2.4.)  $X^2 = 0.331$ , so it is  $\ll 10.8^6$  for  $\alpha = 0.001$ , so there is no reason to disagree with  $H_0$ , which says that there is no difference in the villages with and without a VHW according to the number of mothers with school education. The little difference could be explained by the fact, the in the group of the mothers wit a VHW are 8 MK women, in the group of the mothers without a VHW only 3. And most MK women have a certain amount of school education.

This can also explain the small difference in the **average school education** of the mothers. In villages with a VHW the school education of all mothers was 1.48, of the mothers with school education 6.43. In the villages without a VHW the school education of all mothers was 0.95, of the mothers with school education 4.88. ( $s = 2.66$  for all mothers,  $s = 5.34$  for the mothers with school education). According to the **student T test** is  $t = 1.33 < 3.29$  for  $\alpha = 0.001$  and  $f = 176$ , so there is no reason to disagree with  $H_0$ , which says that there is no difference in the villages with and without a VHW according to the school education of all mothers. According to the **student T test** is  $t = 0.89 < 3.55$  for  $\alpha = 0.001$  and  $f = 36$ , so there is no reason to disagree with  $H_0$ , which says that there is no difference in the villages with and without a VHW according to the school education of the mothers with school education. The school education of the mothers was asked, because there are responsible for the knowledge about

<sup>5</sup> Statistik, p. 197

<sup>6</sup> Statistik, p.279, chart IV

health and for a change of the health behaviour in the family. For that their school education is relevant.

For the **number of families who own land** we get according to the **X<sup>2</sup> test**  $X^2 = 1.08 < 10.8$  for  $\alpha = 0.001$ , so there is no reason to disagree with H<sub>0</sub>, which says that there is no difference in the villages with and without a VHW according to the number of families who own land.

According to the **average ownership of land/family** we get in the villages with a VHW 0.38 acre for all families and for the families with land an average from 0.67 acre. In the villages without a VHW there is an average from 0.43 acre and 0.9 acre for the families who own land. According to the **student T test** is  $t = 0.89 < 3.29$  for  $\alpha = 0.001$  and  $f = 176$ , so there is no reason to disagree with H<sub>0</sub>, which says that there is no difference in the villages with and without a VHW according to the average ownership of land of all families. According to the **student T test** is  $t = 1.8 < 3.37$  for  $\alpha = 0.001$  and  $f = 91$ , so there is no reason to disagree with H<sub>0</sub>, which says that there is no difference in the villages with and without a VHW according to the average ownership of land of the families who own land.

From the villages with a VHW eight were visited monthly in addition by a government health nurse. From the villages without a ACCORD VHW six were visited by a health worker: three from a government health nurse, one from a health worker from another NGO (NAWA), one from a private health nurse and one from an ACCORD VHW (monthly). Three villages were visited monthly, three weekly. When we take in consideration, that three from the six villages without a VHW were visited weekly, but all eight villages with a VHW were visited monthly it gets clear, that there is no structural difference between the villages with and without a VHW according to the visit of other health services.

Summarised we did not find a significant difference in the examined indicators (school education, land ownership as an indicator of the socio-economic status, number of children/family, family members, age of the mothers, visits by other health services). So we assume a structural similarity in both groups.

Because of the Bonferroni estimation (2.3.)  $\alpha = 0.001$  had to be chosen, with the result, that the  $\beta$ -mistake is increasing. But also with  $\alpha = 0.05$  there would not have been find a reason to disagree with H<sub>0</sub> (and so to find a structural dissimilarity of the two groups of villages).

The statistical results are equal to the subjective estimation of the team, who saw a structural similarity in the matched villages.

### **2.3 The methodology of the quantitative part of the survey**

All present mothers with children under five in the villages with and without a VHW were asked by me the following questionnaires. All interviews were done by myself with the help of an translator.

All children were weighed and measured by myself with the help of an animator, VHW or health animator. As a limitation of the survey is to say, that in the beginning not always the same weighing machine could be used. But in the matching villages always the same weighing machine was used.

The Child Health Record (from the VHOI) was found a bit more in the villages with a VHW, but was mostly in a more bad condition, so it could not been used. The documentation in the VHW and in the SC was very good, but only for the mothers and children who went there. The government health records were not existent or could not been reached.

To get a comparability of both groups the only solution was to ask the mothers in both groups with questionnaires and not to see the records, which existed.

The questionnaire was the following:

## Questionnaires to the mothers

**1. Name:**                      **Village:**                      **Tribe:**

**2. How old are you?**

years:                      do not know:

**3. Who stays together with you in your house? (cooks with you together?)**

number:

**4. Did you go to school?**

yes:                      no:

**4a. If yes: how long?**

years:

**5. Do you have land?**

yes.    no:

**5.a. If yes: how much?**

**6. How many children do you have?**

number:

**6a. How old are they? (children under five years)**

child 1:

child 2:

child 3:

**7. Is there any health personal coming to your village?**

yes:                      no:                      don't know:

**7a. Who?**

VHW:

GN:

NGO nurse:

PHN:

others:

**7b. How often?**

< once a month:

twice a month:

once a week:

## Diarrhoea

### 8. How many of your children had diarrhoea within the past 15 days?

number:

#### 8a. If yes: What did you do?

additional fluids, ORS:                      rice water:

no change:                                      less fluids:

go to subcenter:                              others:

#### 8b. If no: What do you usually do, when one of your children gets diarrhoea?

additional fluids, ORS:                      rice water:

no change:                                      less fluids:

go to SC/ MC hospital:                      others:

#### 8c. Do you treat all diarrhoeas in this manner?

yes:                      no:                      don't know

#### 8d. If no: Which diarrhoeas do you treat in an other way?

continuous diarrhoea over 2-3 days:    blood and mucous:    persistent vomiting:

other:

#### 8e. How?

go to SC:              MC:                      PHC:                      VHW:                      PH:                      other:

#### 8f. When should you take a child with diarrhoea to the subcenter/hospital?

continuous diarrhoea over 2-3 days:                      blood and mucous:

persistent vomiting:    others:

### 9. Who told you that?

VHW:                      VHW:                      GN:                      PHN:                      NGO:

Animator:              people of the village:                      nobody:

### 10. How do you prevent frequent diarrhoea?

boiled water:                      do not know:                      others:

## Nutritional status of children

### 11. Weight:                      Height:                      Age:

### 12. What did your children eat yesterday?

Ragi:    oil adding:    adult's food:

breast milk:                                      other:

### 13. How many meals ?

1:                      2:                      3:                      4:

### 14. When was your child weighed last?

<6 months ago:                      6 months - 1 year ago:                      >1 year ago

do not know:                                      never:

### 15. Where?

VHW:    SC:    MC:

VHW:    PHC:    PH:

### 16. What were the instructions given to you?

no change:                      Ragi:                      oil:                      additional food:

other:

### 17. Who gave these instructions to you?

VHW:    VHW:    GN:    NGO:    PHN:

others:

### 18. Did you follow these instructions ?

yes:                      no:                      do not know:



## Immunisation status

### 31. Did this child ever get immunized?

yes:                    no:                    do not know:

### 32. If no: Why?

no information:                    frequent infections:

no belief in immunisations: not yet:                    others:

### 33. If yes: When it was delivered, did it get an injection (BCG)?

yes:                    no:                    do not know:

### 34. When it was delivered, did it get an oral drops (0. OPV)?

yes:                    no:                    do not know:

### 35. How many immunization injections did it get?

number:                    do not know:

### 35a. At which age?

First dose DPT:

Second dose DPT:

Third dose DPT:

First Booster DPT:

Measles:

### 36. How many oral drops did this child get?

number:                    do not know:

### 36a. At which age?

Zero dose OPV:

First dose OPV:

Second dose OPV:

Third dose OPV:

First Booster OPV:

### 37. Do you know, against which diseases your child got immunised?

yes:                    no:                    do not know:

### 37a. If yes: Which diseases?

Tetanus:                    diphtheria:                    pertussis:                    TBC:

Polio:                    measles:                    other:

### 38. Where does the child got immunized?

SC:                    MC:                    VHW:                    PHC:                    PH:

other:

### 39. From where did you get the information to go there?

VHW:                    VHW:                    Animator:                    PHN:                    NGO:

others:

### 40. Do you have the child's card?

yes:                    no:                    do not know:

All interviews were made within two month from the same interviewer with the help of a translator.

The type of the study is a **retrospective descriptive study with a comparison group**. In the comparison group (VHW-) it was tried to get a maximum conformity with the examined group (VHW+). The **strength of this method** is that you get in a relative small amount of time survey on the work of the past years compared to now. The **disadvantage of this method** is the retrospectivity, what could be avoided in a prospective cohortative study. This was out of the reason of time and finances not possible.<sup>7</sup>

In this study the differences in the health status in the villages with a VHW compared to the villages without a VHW over the period of the last five years time are examined (children under five and antenatal care).<sup>8</sup>

In the analysis it will be examined, whether the differences between the two groups are significant or not. For significance  $\alpha = 0.001$  is taken. In a second step the reasons for significance are analysed.

$\alpha = 0.001$ , to avoid the danger of the multiple testing. Because in the survey there are more than 20 statistical tests. So the Bonferroni estimation<sup>9</sup> is used. Because I work for the analysis with tabells  $\alpha = 0.001$ . Thorough that the  $\beta$ -mistake is increasing. This is unavoidable.

**The zero hypothesis is:**

**H0: There is no difference in the results between the groups of mothers from the villages with and without a VHW.**

**The alternative hypothesis is:**

**H1: There is a difference in the results between the groups of mothers from the villages with and without a VHW.**

The two groups are non linked samples. In the matched pair technics the samples are only linked, if the pairs are really identical. In this case only the villages are matched, but not the mothers, so the samples are not linked.

In a part of the results we get **dichtome results** (e.g. immunized/not immunized). For them the **X<sup>2</sup> test** is used. Another part of the results are **quantitative results** (e.g. average number of children/family or the number of meals eaten the day before). If there is a **normal distribution**, the **student T test** is used, if the **distribution is unknown**, the **U test from Mann, Whitney and Wilcoxon** is used.<sup>10</sup>

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<sup>7</sup> Statistik, p. 161-162

<sup>8</sup> Textbook, p. 61-68

<sup>9</sup> Statistik, p. 197

<sup>10</sup> Statistik, p. 198-199

For the  $X^2$  test there is the following formula:

$$X^2 = \frac{(a*d - b*c)*n}{(a+c)(b+d)(a+b)(c+d)}$$

The four field chart is used:

	success	no success	line sum
VHW +	a	b	a+b
VHW -	c	d	c+d
column sum	a+c	b+d	a+b+c+d

The number of the degrees of freedom is given in the following formula:

$$f = (l-1)(c-1)$$

f: number of the degrees of freedom

l: number of the lines

z: number of the columns

For  $f = 1$  and  $\alpha = 0,001$  the critical value is  $10,8^{11}$

Is  $X^2 > 10,8$ , the alternative hypothesis  $H_1$  is accepted.

When there are more than two expressions of the character, the contingency Chart is used:

	VHW +	VHW -	line sum
expression A	a	b	a+b
expression B	c	d	c+d
expression C	e	f	e+f
expression D	g	h	g+h
column sum	a+c+e+g	b+d+f+h	N= a+b+c+d+e+f+g+h

From each measured value (G) an expected value (E) is calculated:

$$E = \frac{L*C}{N}$$

L: line sum

C: column sum

$$X^2 = \frac{\sum(G-E)^2}{E}$$

Is  $X^2 >$  the calculated value for the number of degrees of freedom, the alternative hypothesis  $H_1$  is accepted with  $\alpha = 0,001$ .

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<sup>11</sup> Statistik, p. 279

**The Student-T-test:** The student-T-test for two non linked samples is used. A normal distribution and a similarity of the variances is anticipated

$$\alpha = 0,001$$

The difference of the mean value (d) is calculated:

$$d = \bar{X}_a - \bar{X}_b$$

The variance (s<sup>2</sup>) of the two samples is calculated:

$$s^2 = \frac{\sum (X_{ai} - \bar{X}_a)^2 + \sum (X_{bi} - \bar{X}_b)^2}{n_1 + n_2 - 2}$$

The standard mistake (sd) is calculated in the following way:

$$sd = s \cdot \sqrt{\frac{n_1 + n_2}{n_1 \cdot n_2}}$$

T is calculated:

$$t = \frac{d}{sd}$$

Is  $t >$  the critical value for  $\alpha = 0,001$  and the number for the calculated degrees of freedom  $f = n_1 + n_2 - 2$  the alternative hypothesis H1 is accepted.

**U-Test from Mann, Whitney and Wilcoxon for two non linked samples:**<sup>12</sup> The test is used for unknown distributions. In an ascending sequence a common ranking is made. The rank sums of both groups (T1 and T2) are calculated

$$T_1 + T_2 = \frac{n \cdot (n+1)}{2}$$

$$n = n_1 + n_2$$

Then the test size U is calculated. U and U' are linked in the following way:

$$U = n_1 \cdot n_2 - U'$$

The test sizes U and U' are calculated:

$$U = n_1 \cdot n_2 + \frac{n_1(n_1+1)}{2} - T_1$$

<sup>12</sup> Statistik für Sozialwissenschaftler, p. 179-181

$$U = n_2 * n_1 + \frac{n_2(n_2+1)}{2} - T_2$$

When there is no difference between the populations, where the samples are taken from, we expect under H0 an U value from:

$$\mu_u = \frac{n_1 * n_2}{2}$$

The standard mistake of U ( $\sigma_u$ ) for linked ranks is:

$$\sigma_u = \sqrt{\frac{n_1 * n_2}{n(n-1)} * \left( \frac{n^3 - n}{12} - \sum_{i=1}^k \frac{t_i^3 - t_i}{12} \right)}$$

$t_i$  = number of persons, who share a rank

$k$  = number of linked ranks

In case of larger samples  $z$  is examined on its statistical relevance:

$$z = \frac{U - \mu_u}{\sigma_u}$$

Is  $z > 3,29$ , the critical value for larger  $n$ , the alternative hypothesis H1 is accepted for  $\alpha = 0,001$

## 2.4 The four health indicators

For the four health indicators the doctors were asked for the therapy, as well as some VHW for seeing, whether the given information has been understood by the VHW. The following presentation is corresponding to the health program of ACCORD, this is the base to measure the success. The health program of ACCORD is corresponding to the health programs, found in the literature ( e.g. David Werner: Where there is no doctor, State of India's health). It is adapted to the local and cultural conditions.

### 2.4.1 Diarrhoea

- Treatment: ORT (ricewater or sugar/salt solution)
- SC/hospital: Continuous diarrhoea over three days period, blood/mucous, all signs of dehydration.
- VHW: The same treatment
- Prevention: boiled drinking water (because of the water wholes this is the only safe way). In Tamil Nadu the people drink according to the traditional medicine warm water, the step to boiling is not to far.
- Toilets: The problem is that all the water is collecting at the water wholes (at the deepest point of the village). So the drinking water is contaminated. For avoiding that, the toilets would have to be cemented.
- The mothers are taught the basic individual hygiene by the VHW, HA, VHW ( cutting the nails, covering the nutrition etc.).
- In the villages with a VHW this is the work of the VHW, in the villages without a VHW, the SC, animators, VHW shall do this work, but out of time reasons this is often not possible.
- The perception about the genesis of diseases is different from western medicine, they think the reason for getting diarrhoea is heat in some food. But the different perceptions can be combined.
- The VHW gave the same program like the doctors. For the incidence of diarrhoea it has to be seen, that the summer period was one of the high incidental times for diarrhoea.

## 2.4.2 Nutrition

- The problem of malnutrition is seen as one of the most difficult of the health program, because malnutrition is influenced by many political and economical factors of the families and villages. It is clear, that a marginalised group like an Adivasi community is much more in danger of malnutrition than a socially non marginalised group.

- **Weight/age** of the children is recorded in the SC, the VHW and on the card of the Voluntary Health Organisation (there also immunisations and other diseases), which is orienting itself at the classification of the **Indian Academy of pediatrics** (which is oriented at the **50th percentile of the WHO standard**<sup>13</sup>:

- **100-80%: Normal weight**
- **70-79%: I. grade underweight**
- **60-69%: II. grade underweight**
- **< 60%: III. grade underweight**

Until 1994 the VHW should weigh the children monthly and record the weight. Now the children are weighed only irregularly, because the health team felt the time can be used more efficiently to educate the mothers. The children are weighed each time they come to the SC or to the VHW.

- **Weight/height** is usually not done. In case of this survey it is done, because it is more precise, in many cases the mothers don't know the exact age of the child. For that the **Waterlows classification**<sup>14</sup> is used (which is recommended by the Indian Academy of Pediatrics), which is oriented at the **50th percentile of the WHO standard**:

- **100-90%: Normal weight**
- **80-89%: I. grade underweight**
- **70-79%: II. grade underweight**
- **<70%: III. grade underweight**

Weight/height is expressing more the acute situation and weight age a mixture between the acute and chronic situation.<sup>15</sup>

- Nutrition: from the fourth month: Ragi (until the age of five years), from the age of one year adult's food malnourished children one teaspoon of oil to every meal, minimum three, if possible four meals a day, mothermilk as long as possible.

- Health education of the mothers at every weighing and by the VHW
- In case of anaemia, giving iron
- Prevention of malnutrition through health education

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<sup>13</sup> Textbook, p.156

<sup>14</sup> Textbook, p.156

<sup>15</sup> Children in the Tropics, p.21-30

- Malnutrition is most influenced by the political and socio-economical factors, so this problem is the most difficult to solve, because all the context has to be solved.

### 2.4.3 Antenatal coverage

- The antenatal coverage is one of the main duties of the VHW. in the villages without a VHW it is much more difficult.

- VHW: monthly examination, in the 8. month twice, in the 9. month weekly, three check ups by the MC, SC or hospital; they shall handle normal deliveries; giving iron and calcium prophylactics; treating minor forms of anaemia. (Because of malnutrition and sichelcellanemia there is seen an HB up to 2.0); health education of the mothers about the child.

- Examination if the VHW: anaemia signs, pedal oedema (hypertonus sign), abdominal examination

- In case of pedal oedema and high urine albumin they shall reefer the pregnant women to the SC/hospital

- Check up: Weighing, bloodpressure, TT and normal examination

- In case of dangers while the pregnancy the VHW shall reefer the pregnant women directly to the hospital:

- bleedings

- fits

- transversal lie of the child

- prolaps of the corda umbilicalis

In case of the following signs to the SC:

- serious anaemia

- pedal oedema and high urine albumin (in case of high BP the SC reefers to the hospital

- Reasons for a hospital delivery:

- two abortions

- antepartal bleedings

- caesarean before

relative indications for a hospital delivery:

- young (<18 years), short (<140cm) primi

- > 5 deliveries

- labour > 24 hours

- Fundus height = birth date

At the relative indications a hospital delivery is only done, when the woman wants it.

#### **2.4.4 Immunisation**

The immunisation program follows the Indian immunisation calendar:

- BCG: At birth (latest up to the first year)
- 0. OPV: Only at hospital deliveries
- OPV: 1.5, 2.5, 3.5 months; booster 1: 1.5 year; booster 2: 5 years
- DPT: : 1.5, 2.5, 3.5 months; booster 1: 1.5 year; booster 2: 5 years
- Measles: 9 months
- As basic immunisation is seen: 3 OPV, 3 DPT and measles. They must be reached with one year.

(There were on 9.12.95 and 20.1.96 two extra doses OPV in Asia, they are not looked at.)

- The mothers were asked for the DPT, OPV and measles, especially injections they remember easily. BCG was looked at in addition on the child's arm.

- The work of the VHW is to remind the mothers on the immunisations, to give health education about the immunisation and to co-operate with the government nurses, when they give the immunisations.

- The immunisations are recorded in the SC, the VHW and on the child's card. The government nurses don't record their immunisations on this card, they use their own card, but don't tolerate, that ACCORD health staff uses their cards for documentation. So the documentation is mostly incomplete.

#### **2.4.5 Ranking of the health programs**

The following ranking was done by the doctors:

1. **Diarrhoea**
2. **Antenatal coverage**
3. **Immunisations**

##### **Nutrition**

The answers, given by the VHW for describing the health program were less professional, but the content was the same. The knowledge of the different VHW, which were asked was from a different quality, what can be expected, but all the VHW knew the basic information.

#### **2.5 The methodology of the qualitative part**

The qualitative part of the work shows the subjective meanings about the work of the VHW inside the different parts of ACCORD's work (especially health work). The aim is to figure out the relation of the health needs, the health system and the resulting positive changes for the population.<sup>16</sup>

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<sup>16</sup> Assessing, p. 2-3

It is an qualitative validation of the quantitative part, but also the visa vers effect, the quantitative validation of the qualitative part has to be seen.<sup>17</sup>

As methodology interviews are used. The interview are done as **single interviews** . The **advantage** is, that an interview with one person is **more intensive** and the answers are **not influenced by the social pressure of the village**. The **disadvantage** is, that in **focus group interviews** the **meaning of the group gets through the interaction of the group more clear**. The advantage of focus group interviews is only there at a fluent understanding of the language. If the interviews have to be done in a foreign language, the single interview has the preference. The language, in which most of the interviews are made (except the interviews with the doctors, one health animator and one hospital staff), is Tamil, so although I have been studying Tamil for one and a half years, this is also a disadvantage for the interviews. The interviews were done with the help of a translator.

The interviews are done as **semistructured interviews with an unstructured part**. That means the **comparison categories** have to be defined before. So that altogether we get in the research a **structured part** (the quantitative part of the work), which helps to get a good reliability of the research, and clarifies the clearly defined questions of the health indicators and a **semistructured part**, which gives in an hermeneutic, qualitative sense a good comparability and an **unstructured part** of (clinical) examples, which gives the people the possibility to express their own views, meanings, feelings.

All the interviews will be done by me, that means by the same interviewer, so that the subjective role of different interviewers is avoided.

The **advantage** of interviews is, that it is possible to **get the relevant informations of the research in a quite short time**, the **disadvantage** is, that the informations are "**second hand**", **the people talk about the issues to me, so my role as an interviewer must be viewed critically**: Certain answers may be given, because the people thought, I want to hear them. This point of the subjective role of the interviewer is difficult to avoid, so it must be critically viewed, especially in the analysis of the interviews.

Another point which should be kept in mind is my role as a white western European woman, who does a research in the Adivasi and Indian context. Obviously I am a stranger there, and my working and acting will be the work of an outsider. This can only be accepted, if the outcome of the research is a benefit for the Adivasis.

The interviews with the different groups of people are made as a **triangulation**. The idea is to get an understanding of the significance of the village health workers (VHW) for the people and for the system of ACCORD/AMS. With the interviews the health sector, the political sector and the village people are asked) The different groups of people are asked about the same issues, so that the different views and opinions can be compared by the interviewer. As methodology a **discussion protocol** is used, which will be made directly after each interview. The interviews are made as semistructered interviews (to get a better possibility to compare them) with an unstructured part,

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<sup>17</sup> assessment, p. 3-4

to give the people an even better chance to express their own views, opinions, meanings, feelings.

There was no attempt to quantify the qualitative data, but to understand them in a hermeneutic, subjective way. The **strength** of this method is the **understanding of the system in the socio-cultural context of the people**, which leads to a **good validity**. The **weakness** of a qualitative methodology is, that it is **not representative**.

By the **combination of a quantitative and a qualitative methodology**, we get **valid and reliable results, although it is clear that both methods show different realities, so that the weak points of every method is not completely balanced by the other method**.

The reasons for the qualitative methodology are:

- the acceptance and the effect of the VHW in the sociocultural context of the Adivasi population can be questioned.
- the integration of the VHW inside the health program of ACCORD
- the integration of the VHW inside the whole work of ACCORD

The **weak point** of a qualitative methodology is the **lack of reliability**. This point will be fulfilled by the quantitative part of the research. So by the combination of both methods we should get a good validity and reliability. It must here be said critically, that the two methods do not substitute each other completely, because each of them is grasping also a different reality.

### 2.5.1 Semistructured interview

The semistructured interview I will do as **guideline interviews**<sup>18</sup>:

- the main topics and categories of the questions are outlined before
- it is open for new aspects
- it is an open way of asking

The **advantages** are:

- it is quite quickly to analyse
- the categories are outlined before
- the comparability of the interviews is good

The **disadvantage** is:

- the questions can be irrelevant for the life reality of the people

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<sup>18</sup> Assessment, p. 18-21

A main part of the guideline interviews will be **key informant interviews**<sup>19</sup>: with the VHW, animators, health animator of the subcenters and hospital staff.

All of them are representing a special group inside the system of ACCORD/AMS.

The **advantages** of them are:

- the informations are quite valid and independent
- it's a quick way to get informations
- the informations represent a special group of people

The **disadvantage** is:

- They don't represent the weak people of the society

To give a voice also to the weak people of the society, it's necessary, to do a **cross checking**: Interviews have to be done also with the weak people of the community, with village people and if possible also with people, who are critical or even opposed to the system.

### 2.5.2 Unstructured part

A disadvantage of the guideline interview is, that the questions can be irrelevant for the life reality of the people, so this part tries to avoid this disadvantage. A part of the interviews should be unstructured, to give the possibility to the people, to express their own feelings, opinions, meanings. So complete open questions should be asked and furthermore the people should tell an example, a story: **Narrative interview**<sup>20</sup>. This type of interview consists of three phases

1. Phase the circumstances of the story are clarified.
2. Phase the story is told and in the
3. Phase the interviewer has the chance to clarify unclear points.

The **advantage** is:

- structures, which were relevant for the life of the people become clear
- the people give a retrospective interpretation of what happened
- relevant issues become clear

The **disadvantage** is:

- it's highly subjective

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<sup>19</sup> Assessment, p.21-24

<sup>20</sup> Assessment, p. 15-18

- the lack of comparability

The disadvantages of this method are not too relevant for the research, because the unstructured questions are a minor part of the interviews.

Through the combination of the different methods it is tried to avoid the disadvantages and to accumulate the advantages.

### **2.5.3 The questionnaires of the qualitative part**

The first questionnaire was developed in Germany in 1995, translated into Tamil and then sent to India. In 1996 in India it was done a little pilot to clarify the understanding of the questions. The interviews were done in May/June 1996 in Tamil (and English: 2 hospital staff, 1 health animator) with the help of a translator.

For the **triangulation** the following groups were interviewed:

- **6 village people out of villages with a VHW**
- **6 village people out of villages without a VHW**
- **6 VHW**
- **3 hospital staff (one doctor, one nurse, one from the administration)**
- **2 health animators**
- **6 animators**

This combination of groups should give a quite valid range of answers on the questions about the effectiveness of the VHW in the system of ACCORD in the subjective view of the people. It was tried to get also people who see the system critically, that was possible, but it was not possible to get interviews with people, who seriously oppose the system. It is difficult to say, whether all people were in the village while the survey, but because the team was interested in as objective results as possible, a as big as possible amount of objectivity can be assumed.

It was tried with the interviews (especially with the interviews with the village people) to represent the different areas, different tribes and the different distances to the SC/ VHW. The people from the Team worked since minimum three years in ACCORD.

The following **categories** were chosen for the analysis of the qualitative part:

- **Assessment and description of the work of the VHW**
- **Role of the VHW in the village**
- **Changes through the work of the VHW and through the health program**
- **What did not change through the work of the VHW and through the health program?**
- **Assessment of the health program (VHW, SC, MC)**
- **Health insurance**

- **The most common diseases**
- **reasons for being ill**
- **In case of getting ill, where do the people go first?**
- **Changes through the work of the sanghams and ACCORD**
- **What did not change through the work of the sanghams and ACCORD?**
- **Problems of the work and for the villages**
- **Co-operation inside ACCORD and AMS (health program and the whole organisation)**
- **Differences in the co-operation with the villages with and without a VHW**

The following **questionnaires** were used:

## 1. Hospital Staff

1. Since when have you been working here?
2. Since when does the health program exist?
3. Describe your work exactly, please.
4. Describe the health program, please.
5. How does the hospital co-operate with ACCORD?
6. How does the hospital co-operate with the village health program?
7. What are the most common diseases?
8. Why are the people ill? What are the reasons for getting ill?
9. What has changed for the Adivasis since the health program started?  
What hasn't changed? What has changed for the Adivasis since ACCORD started? What hasn't changed?
10. Who pays for health? (drugs, nurses, hospital etc.)?
11. You started an insurance system. How does it work and who benefits from it? How many people paid the insurance premium? They, who didn't pay, why didn't they pay?
12. What is the preventive health care (hygiene etc.) you started?
13. When people get ill, where do they mostly go first, to the VHW, to the subcenters, to traditional healers...?
14. Describe the work of the VHW, please. A part of the villages has a VHW, a part of them has not, what is the use of the VHW for the villages and for the patients? What does it mean to the people to have a VHW? Which diseases does she treat herself, which diseases does she refer to the SC/hospital.
15. For you as doctors is there a difference in co-operating with the villages with and without a VHW?
16. What is still a problem in your work?
17. Do you want to give an example of your work with the VHW?
18. Do you want to tell me anything else?

## 2. Health Animators

1. Since when have you been working here?
2. Since when does the subcenter exist?
3. Describe your work exactly, please.
4. How does the subcenter co-operate with ACCORD?
5. How does the subcenter co-operate with the village health program?
6. What do you think about the health program of ACCORD?
7. What are the most common diseases?
8. Why are the people ill? What are the reasons for getting ill?
9. When people are ill, where do they mostly go first, to the VHW, to the subcenters, to traditional healers...?
10. What has changed for the Adivasis since the health program started? What did not change? What has changed for the Adivasis since ACCORD started? What did not change?
11. Who pays for health (drugs, nurses, hospital etc.)?
12. ACCORD started an insurance system, how does it work and who benefits from it? How many people of the area paid the insurance premium? They who did not pay, why did they not pay?
13. What is the preventive health care (hygiene etc.) you started?
14. a. What is the work of the VHW? A part of the villages has a VHW, a part of them has not, what is the difference for the villages? What is the difference for the patients? b. What is the use of the VHW for the villages? What is the use of the VHW for the patients?
15. For you as Health Animators is there a difference in co-operating with the villages with and without a VHW? How do you co-operate with the villages?
16. Which are the diseases the VHW is treating herself? Which are the diseases the VHW are referring to you for treatment?
17. What is still a problem in your work?
18. Do you want to give an example of your work with the VHW?
19. Do you want to tell me anything else?

### 3. Animators

- a: Since when have you been working here? Why did you become an animator?
- b: Describe your work exactly, please.
- c: How do you co-operate with ACCORD?
- d: How do you co-operate with the village health program?
- e: What do you think about the health program of ACCORD?
- f: What are the most common diseases?
- g: Why are the people ill? What are the reasons for getting ill?
- h: What has changed for the Adivasis since the health program started? What did not change? What has changed for the Adivasis since ACCORD started? What did not change?
- i: Who pays for health (drugs, nurses, hospital etc.)?
- j: ACCORD started an insurance system. How does it work and who benefits from it? How many people in the area paid the insurance premium? They who did not pay, why did they not pay?
- k: What is the work of the VHW? A part of the villages has a VHW, a part of them has not, what is the difference for the villages? What is the difference for the patients? What is the use of the VHW for the village? What has changed through it?
- l: For you as animators is there a difference in co-operating with the villages with and without a VHW? How do you co-operate with the villages?
- m: How do you co-operate with the VHW?
- n: Which diseases is she treating herself, which is she referring to the subcenters, mobile clinic or to the hospital?
- o: When people are ill, where do they mostly go first, to the VHW, to the subcenters, to traditional healers...?
- p: What is still a problem in your work?
- q: What does a VHW mean for the people?
- r: Do you want to give an example of your work with the VHW?
- s: Do you want to tell me anything else?

#### 4. VHW

- I. Since when have you been working here? Why did you become a VHW?
- II. Describe your work exactly, please.
- III. How do you co-operate with ACCORD?
- IV. Describe your work inside the village health program, please.
- V. What do you think about the health program of ACCORD?
- VI. What are the most common diseases?
- VII. Why are the people ill? What are the reasons for getting ill?
- VIII. When people get ill, where do they mostly go first, to you, to the subcenters, to traditional healers...?
- IX. What has changed for the Adivasis since the health program started? What did not change? What has changed for the Adivasis since ACCORD started? What did not change?
- X. Who pays for health (drugs, nurses, hospital etc.)?
- XI. ACCORD started an insurance system, how does it work and who benefits from it? How many people in the village paid the insurance premium? They who did not pay, why did they not pay?
- XII. What is the preventive health care (hygiene etc.) you started?
- XIII. Which are the diseases, you are able to treat, which diseases are you referring? To whom?
- XIV. What is the meaning for your village to have you as a VHW? What is the meaning for the patients?
- XV. What is still a problem in your work?
- XVI. Do you want to tell me the story of somebody's illness in your village?
- XVII. Would you like to tell me an example of a patient you could treat and an example of a patient you referred?
- XVIII. Do you want to tell me anything else?

## 5. Village people

- A. Do you want to tell me something about your life in your village?
- B. Are you married? Do you have children? Who else lives with you together?
- C. **In your village, there is a VHW.** What does she do?
- D. Did she already treat you or someone of your family? If you like, tell me about it.
- E. What does the animator do? How do you co-operate with ACCORD and AMS?
- F. Is it important for you and your village to have a VHW? What has changed through it?
- G. What do you think of the health program of ACCORD?
- H. What are the most common diseases? Why are the people ill? What are the reasons for getting ill?
- J. When you or s.o. of your family gets ill, where do you mostly go first, to the VHW, to the subcenters, to traditional healers...?
- K. What has changed for you since the health program started? What did not change? What has changed for you since ACCORD started? What did not change?
- L. Who pays for health (drugs, nurses, hospital etc.) ?
- M. ACCORD started an insurance system, do you participate? Who benefits from it? How many people in the village pay the insurance premium? They who did not pay, why did they not pay? (Why did your family not pay the premium?)
- N. What is still a problem for your village?
- O. Do you want to give an example of your experiences with your VHW ?
- P. Do you want to tell me anything else?
- Q. **In your village there is no VHW.** Why not? Would you like to have one?
- R. What would change through a VHW for your village? What could she do that is not possible now?
- S. What does the Animator do? How do you co-operate with ACCORD and AMS?
- T. What are the most common diseases? Why are the people ill? What are the reasons for getting ill?
- U. What do you think about the health program of ACCORD?
- V. What has changed for you since the health program started? What has changed for you since ACCORD started?
- W. Who pays for health (drugs, nurses, hospital etc.)?
- X. ACCORD started an insurance system, do you participate? Who benefits from it? How many people in the village paid the insurance premium? They who did not pay, why did they not pay? (Why did your family not pay the premium?)
- Y. When you or someone of your family is ill, where do you mostly go first, to a VHW of another village, to the subcenters, to traditional healers...?
- Z. What is still a problem for your village?
- Z1. Do you want to tell me anything else?

### **3 Results**

#### **3.1 Results of the qualitative part**

##### **3.1.1 General data**

The general data were discussed in 2.2.. Here it is only remembered on the result, that we can assume a structural equality between the villages with and without a VHW. So all factors except the VHW are seen as constant.

##### **3.1.2 Diarrhoea**

Different aspects were asked: First the incidence of the diarrhoea within the past two weeks before the interview was asked, for getting the practical changes through the health program. Then the therapy of diarrhoea was asked: inside the ACCORD health program ORT with ricewater (2.8.1.) is propagated. Third the knowledge of the prevention of diarrhoea was asked: here as the only save possibility the boiling of the drinking water is seen.

Chart 2:

**Diarrhoea**

nu.: number	VHW: ACCORD health staff, VHW subcenter
ch.: children	VHW: village health worker(ACCORD)
mo.: mothers	NGO: NGO-health worker
ORT: oral rehydration therapy	GN: government nurse
SC: Subcenter	PHN: private health nurse
k.d.: continuous diarrhoea over a period from two to three days	
b.m.: diarrhoea with blood and mucous	c.v.: continuous vomiting

VHW+: 91 mothers, 127 children (0 - 5 years)

VHW-: 87 mothers, 130 children (0 - 5 years)

total: 178 mothers, 257 children (0 - 5 years)

	VHW+	VHW-	total
<u>nu. ch. with diarrhoea within the past 15 days</u>	30 (24 %)	39 (30 %)	69 (27 %)
<u>nu. mo. knowledge ORT/ ricewater</u>	85 (93 %)	47 (54 %)	132 (74 %)
no change	6 (7 %)	40 (46 %)	46 (26 %)
less fluid	0	0	0
other	4 (4 %)	11 (13 %)	15 (8 %)
hospital/SC	42 (53 %)	48 (55 %)	90 (51 %)
<u>in which case they go to the SC or hospital :</u>			
c.d.	47 (52 %)	54( 62 %)	101 (57 %)
c.d., b.m.	5 (5 %)	1 (1 %)	6 (3 %)
c.d., c.v.	9 (9 %)	1 (1 %)	10 (6 %)
c.d., b.m., c.v.	9 (9 %)	1 (1 %)	10 (6 %)
immediately	16 (18 %)	14 (16 %)	30 (17 %)
other	0	2 (2 %)	2 (1 %)
do not know	5 (5 %)	14 (16 %)	19 (11 %)
<u>prevention: boiled drinking water</u>	70 (77 %)	23 (26 %)	93 (52 %)
do not know	18 (20 %)	57 (66 %)	75 (42 %)
other	3 (3 %)	7 (8 %)	10 (6 %)
<u>information: VHW</u>	71 (78 %)	0	71 (40 %)
VHW	7 (8 %)	24 (28 %)	31 (17 %)
GN	2 (2 %)	6 (6 %)	8 (4 %)
neighbours	2 (2 %)	25 (29 %)	27 (15 %)
nobody	6 (7 %)	26 (30 %)	32 (18 %)
PHN	0	0	0
Animator	3 (3 %)	5 (6 %)	8 (4 %)
NGO	0	1 (1 %)	1 (1 %)

**The main aims of the statistical analysis in the field of diarrhoea are:**

- incidence of diarrhoea (of children under five)
- knowledge of the mothers of the therapy of diarrhoea (ORT/ricewater)
- knowledge of the mothers of the prevention of diarrhoea (boiled drinking water)
- knowledge of the mothers at which indication they shall go to the SC/hospital.

As the main sign to make the difference between diarrhoea and dysentery the occurrence of blood and mucous in the stool is seen.

**3.1.2.1 Incidence of diarrhoea within the past 15 days**

With diarrhoea the estimation, what is diarrhoea of the population is taken.

27% of the examined children had an episode of diarrhoea within the past 15 days before the interviews (24% out of the villages with and 30% of the children out of the villages without a VHW).

The result is analysed with the X<sup>2</sup> test:

	diarrhoea +	diarrhoea -	line sum
VHW +	30	97	127
VHW -	39	91	130
column sum	69	188	257

$X^2 = 1.33 < 10.8$ , so with  $\alpha = 0.001$  there is no reason to disagree with the zero hypothesis, that means the differences in the two groups are seen as accidental.

**3.1.2.2 Knowledge of the therapy of diarrhoea**

It was asked for the usual therapy of diarrhoea and in cases of diarrhoea while the past 15 days of the therapy in the last case of diarrhoea, what was in all cases the same.

The adequate therapy is ORT/ricewater according to the health program.

In the villages with a VHW 93% of the mothers said to give ORT/ricewater in case of diarrhoea to the children (7% said not to change the fluid and 53% to go to a SC/ hospital).

In the villages without a VHW only 54% of the mothers said to give ORT/ricewater in case of diarrhoea to the children (13% said not to change the fluid and 55% to go to a SC/ hospital).

In both groups no mother said to reduce the fluids.

The result is analysed with the X<sup>2</sup> test:

	ORT/ricewater +	ORT/ricewater -	line sum
VHW +	85	6	91
VHW -	47	40	87

column sum	132	46	178
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$X^2 = 36 > 10.8$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

According to the mothers, who went in case of diarrhoea to a SC/hospital, we get the following result:

The result is analysed with the  $X^2$  test:

	SC/hospital +	SC/hospital -	line sum
VHW +	42	49	91
VHW -	48	39	87
column sum	90	88	178

$X^2 = 1.45 < 10.8$ , so with  $\alpha = 0.001$  there is no reason to disagree with the zero hypothesis, that means the differences in the two groups are seen as accidental.

### 3.1.2.3 Knowledge of the mothers in which case they should go to a SC/hospital

The question was, whether the mothers know, in which case the diarrhoea gets dangerous, so that it is necessary, to go for professional help. So it was asked, whether they know the signs of dysentery and dehydration.

In the villages with a VHW 52% said to go to the SC/hospital when the diarrhoea continues for two or three days, 5% when there is blood and mucous and continuous diarrhoea, 9% when there is continuous vomiting and continuous diarrhoea, and 9% knew all three points (continuous diarrhoea, blood and mucous and continuous vomiting). 18% said, they go immediately, and 5% said, that they do not know.

In the villages without a VHW 54% said to go to the SC/hospital when the diarrhoea continues for two or three days, 1% when there is blood and mucous and continuous diarrhoea, 1% when there is continuous vomiting and continuous diarrhoea, and 1% knew all three points (continuous diarrhoea, blood and mucous and continuous vomiting). 14% said, they go immediately, and 16% said, that they do not know.

The result is analysed with the  $X^2$  test:

	VHW +	VHW -	line sum
c.d.	47	54	101
c.d. + b.m./c.v.	23	3	26
immediately	16	14	30
do not know/other	5	16	21
column sum	91	87	178

The answers „do not know“ and „others“ are taken as equal, because, the meaning was the same.

$X^2 = 21.57 > 16.3$  for  $f = 3$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

### 3.1.2.4 Prevention of diarrhoea

The boiling of the drinking water is seen as the only possibility for the prevention of diarrhoea. Beside this there are the common rules of individual hygiene (cutting the nails, etc.), which are not specific for the prevention of diarrhoea. So the boiling of the drinking water is taken as the specific prevention according to the health program.

In the villages with a VHW 77% said to boil the drinking water to prevent diarrhoea, 20% said, that they do not know and 3 % said other things (immunisation etc.)

In the villages without a VHW 26% said to boil the drinking water to prevent diarrhoea, 66% said, that they do not know and 8 % said other things (immunisation etc.)

The answers „do not know“ and „others“ are taken as equal, because, the meaning was the same.

The result is analysed with the  $X^2$  test:

	boiled water +	boiled water -	line sum
VHW +	70	21	91
VHW -	23	64	87
column sum	93	85	178

$X^2 = 45.44 > 10.8$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

Asked for the information source 71% of the mothers out of the villages with a VHW said, that they got the information from the VHW, 28 % of the mothers out of the villages without a VHW said, that they got the information fro ACCORD health staff and 59%% of the mothers out of the villages without a VHW said, that they got the information from neighbours or nobody. It was clear, that the animators, GN, PHN and other NGO health workers play only a marginal role.

Summarised we can say, that the mothers out of the villages with a VHW have clearly more knowledge according to prevention and therapy of diarrhoea. As main information source for this change of knowledge and behaviour the VHW is given. But the incidence of diarrhoea is not gone down, but is approximately equal in both groups. Why it is like that will be discussed later.

### 3.1.3 Nutritional status

The nutritional program is seen as the most difficult and less successful health program, because of the multifactorial genesis of malnutrition. Malnutrition is influenced by many social and political factors, so it is difficult to measure the program. For weight/age the classification of the Indian Academy of Pediatrics and for weight/height the Waterlows classification is used.

The following results were seen:

Chart 3:

**Nutritional status**

Nu.: number	PHN: private health nurse
Ch.: children	NGO: NGO-health worker
mo.: mothers	SC: subcenter
VHW: village health worker (ACCORD)	MC: mobile clinic
VHW: ACCORD health staff (subcenter, VHW)	GN: government nurse
PH: private hospital	PHC: government health facility (primary health centre)
y: years m: months	

VHW+: 91 mothers, 127 children, 110 children > 3 m, 105 children > 5 m

VHW-: 87 mothers, 130 children, 115 children > 3 m, 111 children > 5 m

Total: 178 mothers, 257 children, 225 children > 3 m, 216 children > 5 m

	VHW +	VHW -	total
<u>age/weight</u>			
nu. ch. normal weight	75 (59 %)	59 (45 %)	134 (52 %)
I. gr. underweight	32 (25 %)	35 (27 %)	67 (26 %)
II. gr. underweight	8 (6 %)	17 (13 %)	25 (9 %)
III. gr. underweight	6 (5 %)	8 (6 %)	14 (5 %)
not weighed	6 (5 %)	11 (9 %)	17 (8 %)
<u>height/weight</u>			
normal weight	38 (30 %)	30 (23 %)	68 (26 %)
I. gr. underweight	50 (39 %)	43 (33 %)	93 (36 %)
II. gr. underweight	27 (21 %)	32 (25 %)	59 (23 %)
III. gr. underweight	6 (5 %)	14 (11 %)	20 (8 %)
<u>food (ch. &gt; 4 m)</u>			
Ragi	38 (35 %)	8 (7 %)	46 (20 %)
oil addition	0	0	0
adult's food	97 (88 %)	105 (95 %)	202 (90 %)
mothermilk	55 (50 %)	59 (51 %)	114 (51 %)
other	5 (5 %)	0	0
<u>nu. meals</u>			
0	3 (3 %)	11 (10 %)	14 (6 %)
1	2 (2 %)	4 (3 %)	6 (3 %)
2	11 (10 %)	26 (23 %)	37 (16 %)
3	67 (61 %)	58 (50 %)	125 (56 %)
4	26 (24 %)	14 (12 %)	40 (18 %)
do not know	1 (1 %)	2 (2 %)	3 (1 %)
<u>weighed</u>	87 (83 %)	64 (58 %)	151 (70 %)
<u>within the past 6 months</u>			
nu. ch. > 5 m	42 (40 %)	31 (28 %)	73 (34 %)
6 m - 1 y	32 (30 %)	17 (15 %)	49 (23 %)
> 1 y	3 (3 %)	11 (10 %)	14 (6 %)
do not know	10 (10 %)	5 (5 %)	15 (7 %)

never	18 (17 %)	47 (42 %)	65 (30 %)
<u>instructions (% of ch. &gt; 5 m)</u>	71 (68 %)	41 (37 %)	112 (52 %)
Ragi	55 (52 %)	30 (27 %)	85 (39 %)
additional food	24 (23 %)	20 (18 %)	44 (20 %)
oil adding	0	0	0
no change	1 (1 %)	0	1 (0 %)
other	2 (2 %)	1 (1 %)	3 (1 %)
no instructions	16 (15 %)	23 (21 %)	39 (18 %)
instructions followed	51 (49%)	17 (15%)	68 (31%)
weighed by whom?			
VHW	27 (26 %)	5 (5 %)	32 (15 %)
SC	22 (21 %)	15 (14 %)	37 (17 %)
MC	14 (13 %)	11 (10 %)	25 (12 %)
VHW	21 (20 %)	20 (18 %)	41 (19 %)
PH	1 (1 %)	1 (1 %)	2 (2 %)
PHC	2 (2 %)	12 (11 %)	14 (6 %)
<u>information source:</u>			
VHW	30 (29 %)	4 (4 %)	34 (16 %)
VHW	40 (38 %)	37 (33 %)	77 (35 %)
GN	1(1 %)	0	1 (0 %)
PHN	0	0	0
NGO	0	0	0
other	0	0	0

**The main aims of the statistical analysis in the field of diarrhoea are:**

- Weight/underweight (age/weight)
- Weight/underweight (height/weight)
- food of the day before the interview
- Number of meals of the day before the interview
- frequency of the weighing of the children
- received instructions
- followed instructions

**3.1.3.1 Weight/underweight**

**Weight/age:**

The classification of the Indian Academy of Pediatrics is used. According to the X<sup>2</sup>-test, we get the following result:

	VHW +	VHW -	line sum
normal weight	75	59	134

I. grade underweight	32	35	67
II. and III. grade underweight	14	25	39
column sum	121	119	240

$X^2 = 5.16 < 13.8$  for  $f = 2$ , so with  $\alpha = 0.001$  the zero hypothesis is accepted, which says that the difference according the children's weight in both groups (with and without a VHW) is accidental.

### Weight/height

The advantage here was, that all the children could be measured and weighed, what is more reliable than the age of the children, because often the mothers did not know the exact age of the children.

The Waterlows-classification is used. According to the  $X^2$ -test, we get the following result:

	VHW +	VHW -	line sum
normal weight	38	30	68
I. grade underweight	50	43	93
II. gr. underweight	27	32	59
III. gr. underweight	6	14	20
column sum	121	119	240

$X^2 = 5.55 < 16.3$ . for  $f = 3$ , so with  $\alpha = 0.001$  the zero hypothesis is accepted, which says that the difference according the children's weight in both groups (with and without a VHW) is accidental.

There cannot be seen a significant difference according to weight/underweight of the children coming from villages with and without a VHW. Whether there is a difference to non sangham villages cannot be said.

### 3.1.3.2 Food of the day before the interview

It was questioned, what the children were eating the day before the interviews and how many meals.

In the villages with a VHW 35% of the children over four months got Ragi, 88% adult's food, 50% mother's milk and 5% other items.

In the villages without a VHW 7% of the children over four months got Ragi, 95% adult's food, 51% mother's milk and 5% other items.

In both groups no child got an oil addition to the meal. Also after questioning that all mothers reassured not to add oil to the children's food. So that means most

likely that either the VHW do not instruct the mothers to do that or the mothers themselves think, that oil is too costly (1 litre oil costs about a days salary) or both.

Breastfeeding is in both groups common practice far more than the first year. While the field study three year old children were observed, who were breastfed. In the group with a VHW 10 children were between four months and one year, in the group without a VHW 11, but 55 and 59 children were breastfed. Not a single child was observed, who was fed with the bottle.

The feeding of ragi to children over four months in both groups differed.

The result is analysed with the X<sup>2</sup> test:

	ragi +	ragi -	line sum
VHW +	38	72	110
VHW -	8	107	115
column sum	46	179	225

$X^2 = 26.31 > 10.8$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

In the villages with a VHW the children got in average 3.02 meals, in the village without a VHW 2.53 meals.

This result is analysed with the u-test:

$z = 7.87 > 3.29$  for  $f = 176$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

### 3.1.3.3 Frequency of weighing the children

Next it was looked how often the children were weighed. Since 1994 the children are weighed when they come to the SC or to the VHW, not regularly by the VHW, but the children should be weighed around once in three months. All children up from six months were examined, because in this age they should have been weighed minimum once.

In the villages with a VHW 40% of the children were weighed within the past six months, 30% between six months and one year 3% more than one year, 17% never and 10% the mothers did not know.

In the villages without a VHW 28% of the children were weighed within the past six months, 15% between six months and one year 10% more than one year, 42% never and 5% the mothers did not know.

The result is analysed with the X<sup>2</sup> test:

	VHW +	VHW -	line sum
never weighed	18	47	65
< 6 months	42	31	73

> 6 months < one year	32	17	49
< one year	13	16	29
column sum	105	111	216

In the analysis the answer „do not know“ was taken as „more than one year“, because the children were weighed, but the mothers could not remember when. So most likely they were weighed longer time ago.

$X^2 = 19.8 > 16.3$  for  $f = 3$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

### 3.1.3.4 Instruction given to the mothers

In the following step the consequences out of the difference in the behaviour of the mothers, to get their children weighed more often are examined. The mothers shall get feeding instructions each time the children get weighed.

In the villages with a VHW at 68% of the weighed children, the mothers said, they got instruction (52% to feed ragi, 23% to give additional food: fish, eggs, vegetables, meat etc., 1% to make no change in the diet, and 2% others), 15% said, they did not get instructions. Of the mothers who got instructions for their children, 49% said, they followed the instructions.

In the villages without a VHW at 37% of the weighed children, the mothers said, they got instructions (27% to feed ragi, 18% to give additional food: fish, eggs, vegetables, meat etc., and 1% others), 21% said, they did not get instructions. Of the mothers who got instructions for their children, 15% said, they followed the instructions.

The main instructions were „ragi“ and „additional food“, the instruction to add oil was not said in a single case, what can be analysed, that it was not or only rarely given or/and not accepted.

The result is analysed with the  $X^2$  test:

	instructions +	instructions -	line sum
VHW +	71	16	87
VHW -	41	23	64
column sum	112	39	157

$X^2 = 6.16 < 10.8$ , so with  $\alpha = 0.001$ , that there is no reason to disagree with the zero hypothesis which says, that the difference between the groups of mothers out of the villages with and without a VHW is accidental.

The result is analysed with the  $X^2$  test:

	instructions followed +	instructions followed -	line sum
VHW +	51	36	87
VHW -	17	47	64

column sum	68	83	151
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$X^2 = 15.31 > 10.8$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

The children were mainly weighed inside the ACCORD health system (VHW, VHW, VHW, SC, MC), only 1% of the children in the villages with and without a VHW were weighed in a private hospital and 2% out of the villages with a VHW in a PHC, in the villages without a VHW 11%.

The mothers got the instructions practically only from the VHW and VHW. Only 1% of the mothers in the villages with a VHW said, she got the instructions from the government nurse. From the 11% children who were weighed in the PHC, all mothers said, they did not get any instructions.

The VHW seems to be the key person for getting the instructions into practice, more than the double of the mothers in the villages with a VHW, said, that they followed the instructions.

Summarised it can be said, that there is a significant difference in the feeding habits, in the number of given meals, in the frequency, the mothers get their children weighed and in the way the instructions come into practice. But no difference could be measured in the weight/underweight relation.

### 3.1.4 Antenatal coverage

For this point the mothers were asked for their last pregnancies. It was asked for the frequency of the examinations (done by the VHW) and check ups. And the mothers were asked, where they delivered and who delivered the baby.

We got the following results:

Chart 4:

#### Antenatal coverage

nu.: number	SC: subcenter
ch.: children	MC: mobile clinic
mo.: mothers	PH: private hospital
VHW: village health worker (ACCORD)	tbl.: tablet
AHS: ACCORD Health Staff (subcenter, hospital)	TT: tetanus immunisation (min. two)
GN: government nurse	
PHN: private health	
NGO: NGO-village health worker	
PHC: Government Health Facility (primary health centre)	

VHW+: 91 mothers  
 VHW-: 87 mothers  
 total: 178 mothers

	VHW +	VHW -	total
<u>nu of the deliveries</u>	91	87	178
nu. of ch. living	91 (100 %)	85 (98 %)	176 (99 %)
nu. of ch. died	0	2 (2 %)	2 (1 %)
<u>nu. of mo. examined</u>	85 (93 %)	62 (71 %)	147 (83 %)
> 1 x monthly	74 (81 %)	32 (37 %)	106 (60 %)
> 5 x while pregnancy	1 (1 %)	1 (1 %)	2 (1 %)
1 - 5 x while pregnancy	10 (11 %)	29 (33 %)	39 (22 %)
never while pregnancy	6 (7 %)	25 (29 %)	31 (17 %)
<u>By whom?</u>			
VHW	72 (79 %)	4 (5 %)	76 (43 %)
SC	13 (14 %)	15 (17 %)	28 (16 %)
MC	42 (46 %)	29 (33 %)	71 (40 %)
VHW	30 (33 %)	17 (20 %)	47 (26 %)
PHC	5 (5 %)	8 (9 %)	13 (17 %)
PH	4 (4 %)	2 (2 %)	6 (6 %)
<u>abd. examination by VHW</u>	71 (99 %)	4 (100 %)	75 (99 %)
pedal oedema	72 (100 %)	4 (100 %)	76 (100 %)
signs of anaemia	71 (99 %)	4 (100 %)	75 (99 %)
<u>Check up</u>	82 (90 %)	61 (70 %)	143 (80 %)
1 x while pregnancy	3 (3 %)	11 (13 %)	21 (12 %)
2 x while pregnancy	11 (12 %)	4 (5 %)	15 (8 %)
> 3 x while pregnancy	68 (75 %)	46 (53 %)	114 (64 %)

never while pregnancy	9 (10 %)	26 (30 %)	35 (20 %)
<u>Where?</u>			
SC	11 (12 %)	10 (11 %)	21 (12 %)
MC	40 (44 %)	28 (32 %)	68 (38 %)
VHW	25 (27 %)	13 (15 %)	38 (21 %)
PHC	3 (3 %)	8 (9 %)	11 (6 %)
PH	3 (2 %)	2 (2 %)	5 (3 %)
<u>TT</u> (2 or 3)	77 (85 %)	49 (56 %)	126 (71 %)
<u>iron</u>			
1 tbl. min. two months	20 (22 %)	15 (17 %)	35 (20 %)
2 tbl. (iron + calcium)	52 (57 %)	28 (32 %)	80 (45 %)
3 tbl.	9 (10 %)	8 (9 %)	17 (10 %)
no tbl.	10 (11 %)	36 (41 %)	46 (26 %)
<u>delivery</u>			
hospital	31 (34 %)	15 (17 %)	46 (26 %)
VHW	26 (29 %)	10 (11 %)	36 (20 %)
GH	3 (3 %)	2 (2 %)	5 (3 %)
PH	2 (2 %)	3 (3 %)	5 (3 %)
at home	59 (65 %)	72 (83 %)	131 (74 %)
other	1 (1 %)	0	1 (1 %)
<u>By whom?</u>			
VHW	13 (14 %)	0	13 (7 %)
doctor	30 (33 %)	13 (15 %)	43 (24 %)
nurse	2 (2 %)	2 (2 %)	4 (2 %)
midwife	10 (11 %)	7 (8 %)	17 (10 %)
AHS	0	2 (2 %)	2 (1 %)
relatives	36 (40 %)	61 (70 %)	97 (54 %)
nobody	0	2 (2 %)	2 (1 %)
<u>health card</u>	75 (82 %)	40 (46 %)	115 (65 %)

From the 178 in the survey questioned deliveries in the meantime two children were died: one while the home delivery, because there were preterm pains and no possibility to bring the mother to the hospital. The other child dies from pneumonia, because of too late medical help. Both cases happened in villages with out a VHW.

**The main aims of the statistical testing in the field of the antenatal coverage are:**

- frequency of examination of pregnant women
- frequency of check ups while pregnancy
- TT immunisation
- iron/calcium prophylactics

- Where was the baby delivered and by whom

### 3.1.4.1 Mothers examined while their pregnancy

For this point all examinations, done while the pregnancy are counted together, as check ups. The women shall be examined monthly, in the 8. monthly each other week, and in the 9. month weekly.

In the villages with a VHW 81% of the pregnant women were examined monthly or more often while their pregnancy, 1% more than five times (less than monthly), 11% 1-5 times and 7% never.

In the villages without a VHW 37% of the pregnant women were examined monthly or more often while their pregnancy, 1% more than five times (less than monthly), 33% 1-5 times and 29% never.

This result is analysed with the  $X^2$  test:

	VHW +	VHW -	line sum
> 1 x/m	74	32	106
> 5 x	1	1	2
1-5 x	10	29	39
never	6	25	31
column sum	91	87	178

$X^2 = 37.47 > 16.3$  for  $f = 3$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

When it is looked, who examined the women, it is obvious, that the VHW has in the villages with a VHW with 79% the major part of it. Also an important role has the MC with 46%, the VHW with 33% and the SC with 14%. The PHC's have 5% and the PH 4%.

In the villages without a VHW the major part was examined by the MC with 33%, followed by the VHW with 20% and the SC with 17%. 9% were examined by the PHC's and 2% in PH. 5% were examined by VHW of other villages or the women had migrated.

When a women was examined by a VHW, the VHW did in 99%7100% the requested examinations (abdominal examination, pedal oedema, signs of anaemia).

### 3.1.4.2 Check up

The check up is done in the hospitals, SC, MC or PHC. The women shall go for the check up three times while their pregnancy. While the check up in addition to the „normal“ examination the BP is measured, 2-3 TT immunisations are given and a more detailed examination shall be done.

In the villages with a VHW in 75% of the cases the women went three or more times for the check up, 12% two times, 3% one time and 10% never.

In the villages without a VHW in 53% of the cases the women went three or more times for the check up, 5% two times, 13% one time and 30% never.



This result is analysed with the U test.

With the U test the difference between the frequency of the check ups is measured. The T test cannot be done, because there is no normal distribution.

$z = 3.54 > 3.29$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

So it can be said, that the difference in the behaviour of the pregnant women to go to go for examinations and for check ups including the frequency of going is significant different in both groups.

When we look, where the check ups were done we get the following distribution:

In the villages with a VHW the main part of the check ups was done by the MC (44%), 27% by the VHW, 12% by the SC. The PHC's play with 3% and the PH with 2% only a marginal role.

In the villages without a VHW the main part of the check ups was also done by the MC (32%), 15% by the VHW, 11% by the SC, 9% by the PHC and 2% by the PH.

Total the main factor for the check up of pregnant women has the MC, followed by the VHW and the SC, the PHC's and PH play only a marginal role.

### 3.1.4.3 Tetanus immunisation and iron prophylactics

According to the ACCORD health program all pregnant women shall get two or three TT immunisations and minimum for two months an iron prophylactics (200mg iron, 5 mg folic acid) and if possible also a calcium prophylactics. The TT immunisations are give during the check up, the iron/calcium prophylactics by the VHW or during the check ups.

In the villages with a VHW 85% of the pregnant women received minimum TT immunisations while their pregnancy, 22% got one tablet (most likely iron), 57% two tablets (most likely iron and calcium) and 10% three tablets (most likely two tablets iron and one tablet calcium) while their pregnancy for minimum two months.

In the villages without a VHW 56% of the pregnant women received minimum TT immunisations while their pregnancy, 17% got one tablet (most likely iron), 32% two tablets (most likely iron and calcium) and 9% three tablets (most likely two tablets iron and one tablet calcium) while their pregnancy for minimum two months.

For the statistical testing it is only calculated, whether the women received minimum one tablet for minimum two months.

Both results are analysed with the  $X^2$  test:

	TT +	TT -	line sum
VHW +	77	14	91
VHW -	49	38	87
column sum	126	52	178

$X^2 = 17.22 > 10.8$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

	Fe +	Fe -	line sum
VHW +	81	10	91
VHW -	51	35	87
column sum	132	46	178

$X^2 = 21.43 > 10.8$ , so with  $\alpha = 0.001$  the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

Summarised it can be said, that all examined indications about pregnancy were significant better in the group of mothers from villages with a VHW.

### 3.1.4.4 Delivery

Here it is looked, where the women delivered and who delivered the baby.

In the villages with a VHW 34% of the deliveries were hospital deliveries (29% in the VHW, 3% in a government hospital, 2% in a PH), 65% were home deliveries and 1% were done in a convent. In 14% of the deliveries the VHW delivered the baby, in 33% a doctor, in 2% a nurse, in 11% a traditional midwife and in 40% relatives.

In the villages without a VHW 17% of the deliveries were hospital deliveries (11% in the VHW, 2% in a government hospital, 3% in a PH), 83% were home deliveries. In 15% of the deliveries a doctor delivered the baby, in 2% a nurse, in 8% a traditional midwife, in 2% AHS, in 70% relatives and in 2% nobody.

The delivery in the convent is calculated as an hospital delivery.

The result is analysed with the  $X^2$  test:

	hospital +	hospital -	line sum
VHW +	32	59	91
VHW -	15	72	87
column sum	47	132	178

$X^2 = 7.3 < 10.8$ , so with  $\alpha = 0.001$  there is no reason to disagree with the zero hypothesis, which says, that there is no difference between the groups of mothers out of the villages with and without a VHW.

According to the distribution of hospital/home deliveries is the distribution of more professional help while the delivery. In the villages with a VHW the VHW take a part of the deliveries. Only two deliveries were recognised with no help at all, both in villages without a VHW.

On the question about problems while the pregnancy 15 mothers out of villages with a VHW told about problems (pedal oedema, high BP, transversal lie of the child, twins, pain more than 24 hours, too early labour). In all cases the women went to a hospital, PHC or a SC, in three cases a cecerian was done. In the villages without a VHW 17 mothers told about problems during their pregnancy

(the same problems as in the villages with a VHW, added by a prolonged afterbirth. In three cases it did not come to medical action (one case of preterm labour in the 7. months, one case of labour over three days period and the case of the prolonged afterbirth). In the case of the preterm labour in the 7. month the baby died short time after the birth.

The pregnant women get while their pregnancy a mother health card, where all examinations, check ups, problems, immunisations, iron/ calcium prophylactics etc. shall get recorded. Most of the cards did not exist any more at the date of the interview, because the pregnancy was months or years back. So this point cannot get analysed.

Summarised it can be said that there are significant differences according to the indicators while the pregnancy, but no difference can be measured according to hospital/home deliveries. It is to remark, that hospital deliveries are not specifically propagated by the health program. It is important, that in cases of problems while the delivery it came in the villages with a VHW in all cases to immediate medical action.

### 3.1.5 Immunisation

As a basic immunisation a one year old child shall have:

- three DPT
- three OPV
- measles

Normally the immunisations shall be given with 1.5 , 2.5 and 3.5 months (DPT and OPV) and measles with 9 months. For the statistical analysis all children over one year are taken, because they have to be immunised.

The following immunisations are regarded as desirable:

- BCG (short time after birth)
- two booster DPT and OPV (with 1.5 and 5 years)
- at hospital deliveries a 0. dose OPV

The following results were taken:

Chart 5:

#### Immunisation

VHW: villages health worker (ACCORD)	SC: subcenter
AHS: ACCORD health staff	MC: mobile clinic
GN: government nurse	GAH: Gudalur Adivasis hospital
PHN: private health nurse	PH: privates hospital
NGO: NGO-health worker	DPT: diphtheria, tetanus, pertussis immunisation
OPV: oral poliomyelitis immunisation	BCG: TBC immunisation
PHC: government health facility (primary health centre)	

VHW+: 91 mothers, 100 children > 11 months

VHW-: 87 mothers, 104 children > 11 months

total: 178 mothers, 204 children > 11 months

	VHW+	VHW-	total
immunised at all	95 (95 %)	87 (84 %)	182 (89 %)
basic immunisation (1.-3. DPT, 1.-3.OPV, measles)	74 (74 %)	22 (21 %)	96 (47 %)
basic + 1. booster	40 (40 %)	12 (12 %)	52 (25 %)
basic + BCG	34 (34 %)	8 (8 %)	42 (21 %)
basic +1. booster. + BCG	34 (34 %)	8 (8 %)	42 (21 %)
basic + 0. OPV	5 (5 %)	3 (3 %)	8 (4 %)
incomplete immunised	21 (21 %)	65 (63 %)	86 (42 %)
not immunised	5 (5 %)	17 (16 %)	22 (11 %)
0. OPV	15 (15 %)	5 (5 %)	20 (10 %)
BCG	74 (74 %)	30 (29 %)	104 (51 %)
1.-3.DPT + 1.-3.OPV	89 (89 %)	53 (51 %)	142 (70 %)
measles	75 (75 %)	25 (24 %)	100 (49 %)
knowledge of min. one disease	23 (25 %)	8 (9 %)	31 (17 %)
min. 2 diseases	18 (20 %)	4 (5 %)	22 (12 %)

wrong diseases	4 (4 %)	3 (3 %)	7 (4 %)
where immunised?			
SC	6 (6 %)	12 (12 %)	18 (9 %)
MC	47 (47 %)	39 (38 %)	86 (42 %)
PHC	37 (37 %)	24 (23 %)	61 (30 %)
AH	5 (5 %)	4 (4 %)	9 (4 %)
PH	0	8 (8 %)	8 (4 %)
other	0	0	0
informations from whom?			
VHW	55 (55 %)	0	55 (27 %)
AHS	33 (33 %)	60 (58 %)	93 (46 %)
Animator	1 (1 %)	0	1 (0 %)
GN	5 (5 %)	18 (17 %)	23 (11 %)
PHN	0	8 (8 %)	8 (4 %)
NGO	0	0	0
neighbours	1 (1 %)	1 (1 %)	2 (1 %)
not immunised			
no belief	0	0	0
no information	1 (1 %)	8 (8 %)	9 (4 %)
frequent infections	0	0	0
not yet	1 (1 %)	1 (1 %)	2 (1 %)
other	3 (3 %)	8 (8 %)	11 (5 %)
children health card	48 (48 %)	37 (36 %)	85 (42 %)

**The main aims in the statistical analysis are:**

- any immunisation started
- basic immunisation (3 DPT, 3 OPV, measles)
- knowledge of the mothers against which disease their children got immunised
- existence of the children's health cards

Only the children over one year are examined, because according to the health program, the basic immunisation has to be completed.

**3.1.5.1 Basic immunisation**

Here it is looked, how many children got any immunisation, how many reached the basic immunisation and on the specific immunisations.

In the villages with a VHW 95% got any immunisation and 74% reached the basic immunisation, 21 % were incomplete immunised, 5% not at all.

In the villages without a VHW 84% got any immunisation and 21% reached the basic immunisation, 65 % were incomplete immunised, 16% not at all.

This result is analysed with the  $X^2$  test:

	any immunisation +	any immunisation -	line sum
VHW +	95	5	100
VHW -	87	17	104
column sum	182	22	204

$X^2 = 6.82 < 10.8$ , so with  $\alpha = 0.001$  there is no reason to disagree with the zero hypothesis, which says, that there is no difference between the groups of mothers out of the villages with and without a VHW.

	basic immunisation +	basic immunisation -	line sum
VHW +	74	26	100
VHW -	22	82	104
column sum	96	108	204

$X^2 = 57.15 > 10.8$ , so with  $\alpha = 0.001$ , the alternative hypothesis is accepted, which says, that there is a significant difference between the groups of mothers out of the villages with and without a VHW.

In the villages with a VHW 40% of the children received in addition to the basic immunisation the first booster (DPT and OPV), 34% BCG and first booster and 5% 0. dose OPV.

In the villages without a VHW 12% of the children received in addition to the basic immunisation the first booster (DPT and OPV), 8% BCG and first booster and 3% 0. dose OPV.

When we look at the single immunisations we see the following:

- 89% of the children with a VHW received 3 DPT and OPV, 42% the first booster, in the villages without a VHW 51% and 17%.
- In the villages with a VHW 75% of the children were immunised against measles, in the villages without a VHW 24%. This immunisation is obviously the limiting factor for the basic immunisation.
- BCG immunised were 74% of the children with a VHW and 29% of the children without a VHW.
- The 0. dose OPV got 15% of the children out of the villages with a VHW and 5% out of the villages without a VHW.

Summarised it can be said, that there is a significant difference in the behaviour of the mothers in the villages with a VHW compared to the mothers in the villages without a VHW, to get their children immunised. That means, significant more children out of the villages with a VHW reach the basic immunisation. Also all single immunisations are higher in the villages with a VHW.

### 3.1.5.2 Knowledge of the mothers

It was questioned, whether the mothers know, against which diseases their children got immunised.

In the villages with a VHW 25% of the mothers knew minimum one disease correct, 20% minimum two, 4% said wrong diseases (like diarrhoea or others).

In the villages with a VHW 9% of the mothers knew minimum one disease correct, 5% minimum two, 3% said wrong diseases.

This result is analysed with the  $X^2$  test:

	min. one disease +	min. one disease -	line sum
VHW +	23	68	91
VHW -	8	79	87
column sum	31	147	178

$X^2 = 8.0 < 10.8$ , so with  $\alpha = 0.001$  there is no reason to disagree with the zero hypothesis, which says, that there is no difference between the groups of mothers out of the villages with and without a VHW.

It cannot be said, that the mothers in the villages with a VHW know more about the diseases their children get immunised.

### 3.1.5.3 Location of the immunisation

The major part of the children in the villages with a VHW got immunised in the MC (47%), followed by the PHC (37%), 5% got immunised in the SC and 6% in the GAH.

In the villages without a VHW we get the same distribution: 38% got immunised by the MC, 23% by the PHC, 12% by the SC, 4% by the GAH and 8% by PH.

On the information side in 55% of the cases the mothers got the information to go for immunisations from the VHW, in 33% from AHS, in 1% of the animator, in 5% from the PHC and in 1% of neighbours.

In the villages without a VHW 58% of the cases the mothers got the information to go for immunisations from AHS, 17% from the PHC and in 1% of neighbours.

In case of immunisations the infrastructure of the locality is used (PHC, MC etc.). In many cases the VHW told, that they go together with the government nurse from the PHC to immunise the children. On the information side it is to see, that also in the villages without a VHW the mothers get a lot of information about immunisations, but obviously it gets much less into practice. On both sides there is no difference in the analysis according the started immunisations, but a significant difference in the reaching of the basic immunisation. In 8% of the cases the mothers out of the villages without a VHW said, they did not get informations at all about immunisation, only in 1% of the cases the mothers out of the villages wit a VHW said so. These children were not immunised. As other reasons, for not immunising their children, the mothers said, they have not been at home while the immunisation or they would immunise the child during the next time.

### 3.1.5.4 Children's health card

The children's weight as well as the immunisations and diseases of the child shall get recorded on the **child's health card of the Voluntary Health Association of India**. A special problem here is, that e.g. the government nurses from the PHCs or private health services do not use that card and do also normally not tolerate, that their cards are used by AHS. So many of the card are incomplete. so on many cards, when they do exist, the information is incomplete. On the other side there is no card, which can be used by everyone. Although there is a well done documentation in the SC, MC and GAH, there is no complete documentation existing about the children. In the villages with a VHW in 48% of the children, the mothers had cards, where the main informations could be seen, in the villages without a VHW 36%.

This result is analysed with the  $X^2$  test:

	health card +	health card -	line sum
VHW +	48	52	100
VHW -	37	67	104
column sum	85	119	204

$X^2 = 3.24 < 10.8$ , so with  $\alpha = 0.001$  there is no reason to disagree with the zero hypothesis, which says, that there is no difference between the groups of mothers out of the villages with and without a VHW.

Because of the Bonferroni estimation in three cases it did not come to an Acceptance of the alternative hypothesis. Here the increasing of the  $\beta$  mistake has to be kept in mind.

### 3.2 The results of the qualitative part

The following categories were chosen for the analysis of the qualitative part:

- **Assessment and description of the work of the VHW**
- **Role of the VHW in the village**
- **Changes through the work of the VHW and through the health program**
- **What did not change through the work of the VHW and through the health program?**
- **Assessment of the health program (VHW, SC, MC)**
- **Health insurance**
- **The most common diseases**
- **Reasons for being ill**
- **In case of getting ill, where do the people go first?**
- **Changes through the work of the sanghams and ACCORD**
- **What did not change through the work of the sanghams and ACCORD?**
- **Problems of the work and for the villages**
- **Co-operation inside ACCORD and AMS (health program and the whole organisation)**
- **Differences in the co-operation with the villages with and without a VHW**

The results are presented along these categories. The bold printed paragraphs represent the main opinion of the group, the normal printed paragraphs, the minority opinion or minor important statements. Because in each group some persons were interviewed, there are some contradictory statements. **6 villagers out of villages with a VHW, 6 villagers out of villages without a VHW, 6 VHW, 6 animators, 2 HA, and three staff people from the GAH (1 nurse, 1 doctor, 1 administration).**

#### 3.2.1 Assessment and description of the work of the VHW

**VHW:**

**asked by the doctors or animators, than the sangham decided to sent her for training.**

- **visits 5-6 more villages about once in two weeks**
- works only in her village
- visits 10-15 more villages about once in two weeks or once a month
- to conduct the sangham meetings
- **in the sangham meetings she talks about health**
- tells about the insurance

- **antenatal coverage (anaemia, abdominal examination, pedal oedema):1/months, sent them for check up to the hospital, SC or MC and gives iron (and calcium)**
- **diarrhoea of children (ORS, rice water )**
- **prevention, basic hygiene (boiled water, to cut nails, to wash clothes etc.)**
- **health education: to eat minimum three meals a day, to give children ragi, to feed .vegetables, eggs, fruits, milk etc.**
- **gives medicine against fever (paracetamol) and scabies**
- **- immunisation of children (remembering the mothers, co-operation with the GN or MC)**
- **to pick up sick patients and to refer them to the hospital or to the subcenter, either she tells them to go there or she goes with them**
- **uses also the traditional medicine (e.g. for diarrhoea and piles)**
- **do not use any more herbal medicine, the herbs are not any more found in the forest**
- **weighing of the children**
- **diarrhoea she treats with rice water or ORS, fever with paracetamol, bronchopneumonia and dysentery with cotrimoxazol, scabies with neem, minor cuts, anaemia she treats with iron tablets, all other diseases she refers to the SC or hospital (TB, bronchopneumonia, diarrhoea over three days period or with blood and mucous, vomiting, severe malnutrition, problems with pregnancies (fits, bleedings, transverse lie, severe anaemia, pedal oedema, urine albumin)**
- **The focus of the work is the health education.**

#### **Village people (VHW+):**

- **chosen by the sangham**
- **-the VHW gives medicine for fever, cough and diarrhoea**
- **tells us to go to the hospital or brings them to the hospital, when we are serious ill**
- **gives health education, tells us what to do when the children get diarrhoea or to boil water, tells when we have to go for immunisation, what to do against scabies**
- **examines pregnant women, so we feel more save**
- **weighs children**
- **gives instructions about what to eat (eggs, vegetables, ragi)**
- **goes once a week from house to house and checks the people**
- **the VHW doesn't work properly, she throws the medicaments away and takes only the money**

- **The focus of the work is to give tablets and to bring the serious sick patients to the hospital.**

**Village people (VHW-):**

- **the care for the village would be better**
- **she should give medicine, when we are ill**
- **she should educate us about health and how to prevent diseases now we know nothing**
- **she should examine pregnant women**
- **she should bring us to the hospital, when we are ill**
- no VHW, because nobody in the village is interested
- no VHW, because the women in the village are not educated
- one lady is interested, we want to sent her for training
- do not know, why there is no VHW
- **the village wants to have a VHW**
- a midwife is here, but she knows only something about pregnancies, we would need a VHW
  - we had a VHW for a very short time, but she didn't work, we don't need a VHW like that
  - the sangham didn't chose one
- **The focus of the work should be to give Tablets and to bring serious sick patients to the hospital.**

**Animator:**

- **some work only in their village, some visit 5 or 6, up to ten other villages**
- **examines pregnant women**
- **they conduct uncomplicated deliveries**
- **gives health education (to boil drinking water, to prevent diarrhoea and scabies)**
- **gives education about nutrition (ragi, vegetables, eggs, milk, fish, meat) and how to prevent malnutrition**
- talks on sangham meetings about health, creates a certain health awareness among the women
- some weigh children (those, who can read and write)
- **remember the mothers to go for immunisation or go together with the government nurse**
- **they help the women to create awareness about health and go with them to the hospital, so they feel more save**

- **the VHW treats diarrhoea , headache, fever, smaller injuries and scabies herself, all saviour diseases she refers to the hospital or SC (TB, problems with pregnancies like pedal oedema, diarrhoea over three days or vomiting)**
- **the people get immediate medical help**
- in the last two years some VHW left the team
- difficult to find new VHW, most are illiterate, many women find it difficult to walk long distance alone or to walk alone in the forest
- **The focus of their work is the health education.**

#### **Health animator:**

- **health education of mothers about nutrition (ragi eggs, vegetables, meat) and diarrhoea (to boil the drinking water for prevention and to use ORS or rice water in case of diarrhoea)**
- some weigh children
- they decide, whether they can treat a patient or whether they bring him/her to the hospital or SC
- **they treat minor diseases (diarrhoea, fever, headache, cuts, anaemia) and pick up severe patients and sent them to the SC or to the hospital. Or they go with them.(TB, sever diarrhoea, sever anaemia, fever over three days, problems while the pregnancy)**
- **to examine pregnant women once a month and sent them to the SC for check up**
- **to tell the mother to go for immunization (co-operate with the GN and MC)**
- conduct uncomplicated deliveries**
- **They help the women to develop health consciouness and go with the women to the hospital, so the women feel saver.**
- **The focus of their work is the health education.**

#### **Hospital staff:**

- the health program started with the training of VHW
- **1987-1992 every 6 months a group of VHW was trained in the hospital**
- **each year there is a training program for the VHW**
- in the SC there is also a training for the VHW, but at the moment it is regularly only in one SC, because the other HA are not confident to teach
- now VHW get only trained, when the areas demand it, in the future the VHW should get trained by the HA
- in the training also the political problems of the tribals are discussed

- the VHW are encouraged also to use the herbal medicine, they know, in the training program, there is a one day sharing session of the knowledge of herbal medicine
- **they provide an immediate medical care in case of illness**
- **they refer sick patients directly to the hospital or SC or bring them there, so the patients feel safer**
- **health education: the people learn the germ theory, to boil water for the prevention of diarrhoea and to give ORS or rice water; they teach about nutrition (ragi, eggs, vegetables) and malnutrition**
- **ANC once a month (pedal oedema, urine albumin, abdominal examination, anaemia, iron + calcium Tablets) and they sent the mothers for check up to the SC, the MC or the hospital**
- **they remember the mothers to go to immunise the children (in co-operation with the GN and MC)**
- conducting of deliveries
- some are weighing children (who can read and write)
- **they treat minor diseases like fever and headache with paracetamol, some have cotrimoxazol to treat bronchopneumonia, some of them picked up, that we use cotrimoxazol also for watery dysentery, scabies they treat with the traditional medicine: neem, tamarique and salt**
- **all serious diseases, they refer to the SC, the MC or the hospital: diarrhoea over three days period, with blood and mucous or persistent vomiting, severe malnourished children, severe anaemia, problems while pregnancies (fits, bleedings, severe anaemia, transverse lie, pedal oedema, urine albumin, previous LSCS, prolonged labour >24h, premature rupture of membranes, prolapsed cord/larm), TBC, fever over three days period**
- **the VHW goes for visit regularly other villages around**
- **some VHW do not work, some get stuck in their village**
- screening of TBC: cough over two weeks, lost of weight and appetite, (sputum with blood), (chest pain), evening rise of temperature

### 3.2.2 Role of the VHW of for the villages:

#### VHW:

- **the people are less afraid to come, than to go to the hospital**
- **the people come to know western medicine and are also less afraid of the hospital**
- not sure, whether she is accepted by the people, sometimes. they listen more from someone. from outside

- **many changes took place through my work here (health of the people improved)**
- **create awareness about health and give more knowledge**
- to serve my community, help my people  
conduct sangham meetings

**Village people (VHW+):**

- **trust in her medicine**
- **no fear to go to her**
- **she is a part of our community**
- conducts the sangham meetings, more a feeling of unity
- gives health education
- **we feel more save, when we get ill, we know, where to go**
- **we learnt what to do to prevent diseases**
- **the health standard of the people is better**
- we want her to work here
- no use, she does not work properly

**Village people (VHW-):**

- **for health education it would be useful**
- **someone. would always be there, where we could go, when we are ill to get medicine**
- **the health of us and our children would be better**
- **someone. would take care of the village, who is trained and knows more**
- there was a VHW, who didn't work, gave us no health education, like that it is no use

**Animator:**

- **create awareness about health**
- **health improved**
- **to give health education**
- **some have problems to be accepted, because they are illiterate, have to walk far distances or because of a personal or religious fight, that is why some have left the team**
- **the people feel more save, get immediate medical care from someone. of their community**
- **reduce the fear of the people**
- the people go less to private hospitals, more to the SC and our own hospital

- also the animators can fulfil this role
- all villages should get visited by a VHW, to create more awareness
- also the non sangham villages should get visited by a VHW
- more VHW are needed, but it is difficult to find good people

#### **Health Animator:**

- **create awareness and to give knowledge about health**
- **improve the health status**
- **less fear to go to a member of their community**
- **the people feel more save**
- also the animators can fulfil that role
- know the people are aware about their health, so the role of the VHW is not any more needed
- the VHW are not any more needed, their role is fulfilled, no new VHW should be trained, the visit of the HA is enough
- every village should get visited by a VHW
- the VHW are needed for creating awareness, we need more VHW

#### **Hospital Staff:**

- **create awareness and give knowledge about health**
- **immediate medical care and immediate action**
- **the people feel more save**
- **better health status and more knowledge about health**
- **some do not work, because of personal or political problems in their villages**
- **less fear for the people to go to them than to outsiders**
- **many VHW feel, that the SC took over their role**
- **every village should be visited by the existing VHW, new VHW should only get trained, if the area team asks for it**

### **3.2.3 Changes through the work of the VHW and through the health program**

#### **VHW:**

- **much less women die in childbirth or while the pregnancy**
- **much less children die after birth or because of diarrhoea**
- **awareness of health (hygiene, immunisation of children, ANC, prevention of diarrhoea and scabies, nutrition)**

- less fear of hospital and doctors
- through the MC the first outsiders came to the village, the people got an exposure to the world, less fear of people from outside, who come to the village
- much better medical care
- more knowledge about health
- health education
- the people know. where to go in case of diseases
- our own hospital: now the people go to the hospital or to the SC, before they locked the door, called the spirits and waited, now they know where to go
- we can speak in our own languages
- nutrition level has increased

**Village people (VHW+):**

- lost fear of hospital and doctors
- now we go to the hospital, when we are ill, before we only called the spirits and waited, many people died, because we did not bring them to the hospital
- our people are healthier, there is less diarrhoea and less fever
- the children are immunized
- the women stopped dying in childbirth and get examined while their pregnancies
- now we know , where we can go, before we did not know, where to go, in the PHC we were not treated, there our people just died, we could only try our herbal medicine, if this didn't work, they died
- much more knowledge about health, before many children died of diarrhoea, because we didn't know, what to do
- more knowledge about the prevention of diseases
- health education from the VHW and the TV, should come back
- after the VHW came, they formed a sangham
- stopped calling the spirits
- stopped taking herbal medicine

**Village people (VHW-):**

- lost fear of hospital and doctors
- no women now die in the pregnancy or of childbirth
- the children do not die any more of diarrhoea

- number of diarrhoea, fever and scabies has reduced
- health education: much more knowledge about boiling water we learnt to prevent diseases
- awareness about health improved
- **our hospital saved many lives: before we only called the spirits and did puja, now we have a place where we can go. Before we were not treated in the PHC.**
- health education (TV)
- much better medical care

**Animator:**

- **we have our own hospital: now the people go to the hospital or to the SC, before the locked the door, called the spirits and waited, now they know where to go, in the PHC we were not treated properly.**
- **much more knowledge and awareness about health (immunisation, prevention and treatment of diarrhoea, nutrition, antenatal care, hygiene)**
- also the non sangham villages are effected by that change
- **much better medical care**
- **deaths because of diarrhoea, measles, neonatals, problems with pregnancies and in childbirth stopped**
- **health education**
- **in the sangham meetings health is discussed**
- **fear of doctor and hospital stopped**
- health is a major issue of our work

**Health Animator:**

- **ANC, the women stopped dying while the pregnancy or in childbirth**
- **immunisation of children**
- **much better medical care**
- **our hospital saved many lives: before we only called the spirits and did puja, now we have a place where we can go. Before in the PHC we were not rested at all or not properly.**
- **many diseases got much less, because of the prevention and awareness: diarrhoea, anaemia, TBC**
- **nutritional status got much better**
- **less fear of doctors and hospital, now the people come on their own to the SC or to the hospital**
- **awareness and knowledge about health increased a lot**

- **maternal and neonatal deaths stopped, deaths because of diarrhoea stopped**
- **places, where to go, when they are ill, before in the GH they were not treated**

#### **Hospital Staff:**

- **the people go to the hospital**
- **we have our own hospital: now the people go to the hospital or to the SC, before he locked the door, called the spirits and waited, now they know where to go, many died unnecessarily, before in the PHC they were not treated**
- **much less fear of doctors, injections and the hospital**
- **much less deaths in childbirth, of pregnant women (anaemia and eclampsia) and because of diarrhoea**
- **fear of outside people has gone**
- **knowledge and health awareness are much better (immunization, ANC, prevention of diseases, nutrition etc.)**
- **understanding of the importance of health has increased**
- **experience, that the people are able to solve their problems themselves has increased through the health program**
- **a step is reached, where everything has to be handled over to the people, so our speed will slow down**
- **nutritional status improved and they started the weaning with ragi up from the 4. month. For feeding rice they first have to bring the children to the temple, but not for ragi. so they can feed the child much earlier. All the nutritional status of children has increased.**
- **now they do puja, call the spirits and come to the hospital**
- **a dying out of the traditional medicine (bad development)**
- **introduction from our health program in the puja**

At this point the given answers of all groups were quite similar, so here are the most important points summarised:

- **the fear of doctors, hospitals and outsiders has reduced**
- **the deaths while pregnancy, in childbirth, from diarrhoea and other infections have reduced.**
- **the GAH is a hospital, where the Adivasis go in case of illness without fear, they understand it strongly as their own hospital.**
- **better medical care**
- **more knowledge and health awareness especially about the prevention from diseases, immunisation, nutrition and ANC**

### 3.2.4 What did not change through the work of the VHW and through the health program:

#### VHW:

- **some people do not listen, do not boil drinking water, do not come to me, when they are ill**
- **the men (and some women) drink lots of alcohol: the women and children are most effected by it or the men get violent against women and children or start fights in the village, the women must solve that problem**
- they listen more to outsiders than to me as a member of their community
- until now, there is nobody to run the SC in the area, we need one, it is too far and expensive to go all way to Gudalur for minor things
- there are too less VHW in the area, but it is difficult to find responsible women, who do not leave after a short time
- **the village has no good drinking water, the water whole is very muddy; far away, there is no place for toilet**

#### Village people (VHW+):

- the VHW does not work, she just takes the money and throws the medicine away, she does not care
- the children still have lots of scabies
- **all the men drink lots of alcohol, spent the money for alcohol instead of food, clothes and education for the children; they beat the women, they sometimes have to hide in the forest; the men start fights**
- some women drink alcohol, too
- elephants come after 6 p.m., destroy houses and injure people
- the goat project did not work, 6 from 7 goats were sold, before they got children
- it is very costly to go to the GAH, even when we are insured, we have to pay for travel expenses and food

#### Village people (VHW-):

- **all the men drink lots of alcohol, spent the money for alcohol instead of food, clothes and education for the children; they beat the women**
- **the women must unite too fight the problem, but there is still a lack of unity**
- **it is very costly to go to the GAH, even when we are insured, we have to pay for travel expenses and food**
- ACCORD does not use our money properly, they get foreign money, but we still have to pay

- **there is no good water, the water well is very far, some people still do not boil the drinking water**
- **not many things changed, we get still ill**

**Animator:**

- **some people are still not aware**
- it is not possible to find enough qualified VHW in the area, the women are not educated, there is a need for more VHW
- alcoholism, but it got less
- **vast alcohol problem of nearly all the men, it has to be fought with the help of the police, if not it becomes very violent, the alcohol spoils the health and the sangham work, the problem is mainly among the daily-wagers**
- **there is a lot of knowledge about health, but too less change of practice (boiling water, nutrition), that will take more time**
- **the health program must improve the sangham work**

**Health animator:**

- **all the men drink lots of alcohol, spent the money for alcohol instead of food, clothes and education for the children; they beat the women, sometimes the women drink only black tea, because there is no money to buy food,**
- alcoholism, but it got less the alcohol problem is mainly among the P an KN, not so much MK
- **some people are still not aware**
- **some villages have big water problems, water wholes with dirty, muddy water or the wells are too far, often they do not have proper places for toilet**

**Hospital Staff:**

- some people still do not understand the message, do not co-operate
- **alcoholism among the men (also some women drink), most affected are women and children by the violence and by not getting food;** it is not possible to fight it from outside, because it is a problem of the whole community. Either it has to be discussed from a health point of view or a group of women has to be trained. Alcohol changes the whole personality, the men do not speak any more, it is the alcohol, that speaks.
- tobacco: increasement of oesophagus-ca
- **alcohol and tobacco have to be the next focus of the health program**
- many people of BK still only do puja and call the spirits and don't bring the patients to the SC or the hospital

- **some villages have big water problems, water wholes with dirty, muddy water or the wells are too far, often they do not have proper places for toilet**

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### 3.2.5 Assessment of the health program (VHW, SC, MC)

**VHW:**

**SC:**

- often nobody is there in the SC
- **it is too far away from our village**, the people go directly to the AH
- **always someone is there, where we can go there to get immediate medical help**
- they we get trainings
- in Gudalur area we don't need a SC, there we have the AH

**MC:**

- should come back
- **was very good for check up of pregnant women and for immunisations**
- **it removed the fear of the people**
- **should stop, now we have the SC**

**AH:**

- **it is very good, it is our own hospital**
- **there they speak the tribal languages**
- **there they care much, treatment is very good**
- **nobody is afraid of the doctors and the medicine there**
- **all the people who work there are tribals**
- **the best hospital in the taluk**

**Village people (VHW+):**

**SC:**

- **is too far, we go directly to the AH**
- at the moment nobody works there
- **serious sick people cannot walk there**
- **it is useful for getting medicine, Gudalur is too far**

- we need a SC, where we can go for minor diseases, Gudalur is too far, until now we don't have a SC

**MC:**

- should come back, before the doctors came a lot, no we pay insurance and the doctors stopped coming
- saved my live in my pregnancy, brought me to hospital, where I stayed for 5 months now me and the child are alive
- **because the MC came we stopped having fear**
- **immunisation, check up of pregnant women**
- **good medical care**

**AH:**

- **it is very good, it is our own hospital**
- **they take care of us there**
- **there the nurses speak the tribal languages**
- **nobody is afraid of the doctors and the medicine there**
- **they look well after us**
- **in the PHC they don't take care of us, they don't treat us properly**
- **they saved many lives**
- **it is the only place we can go, when we are seriously ill**
- the PHC is not bad, but they cannot treat serious ill patients, for that we need the AH
- **it is very far, so we have to spent a lot of money to reach it**

**Village people (VHW-):**

**SC:**

- **is useful for minor diseases, Gudalur is too far, there we get medicine**
- **for sick patients it is difficult to walk there**
- **there they get immediately medicine if someone gets ill, it is the only place for getting medicine**

**MC:**

- the TV- health education was very good
- **the MC should come back, the doctors came to the village, there the care was better**
- **immunisation of children, check up of pregnant women**

**AH:**

- **it is very good, it is our own hospital**
- **they take care of us there**
- **there the nurses speak the tribal languages**
- one child of the village was very ill (megacolon), it got operated there, and it is alive
- **the hospital saved many lives**
- **there we don't have fear**
- they take our money, although they get foreign money, it is not good
- it is too far, for minor diseases we go to the missionary hospital
- **in the GH we were not treated properly**
- the GH is not bad, but they cannot treat serious ill patients, for that we need the AH

**Animator:**

**SC:**

- at the moment nobody works in the SC, the immunisation got worse
- **all the time someone is there, it is very useful for minor diseases, check ups, health education and immunisation, the people use it regularly**
- **all the time someone is there**
- **some people don't come, because it is too far or they do not know, that the SC exists**
- many people don't go to the SC, but go directly to Gudalur
- In Gudalur area we don't need a SC, but one or two HA

**MC:**

- the MC should come back, the immunisation was better and the VHW were more encouraged to work and to stay
- **must stop, now we have the SC, the people must learn to come to the SC, to take responsibility for their health**
- **was very important to remove the fear of the people and for immunisation and ANC**
- the video health education was important for the villages

**AH:**

- **it is very good, it is our own hospital**
- **the people are very proud of it, it is the best hospital in Gudalur**

- there they speak the tribal languages
- there they care much, treatment is very well
- nobody is afraid of the doctors and the medicine there
- there we can communicate freely
- there we make the rules, in all other hospitals we must follow the rules, they make
- people who are not insured often go to the PHC, where they are treated worse or to missionary hospitals, where they try to convert them, after we struggled so much to get our own hospital we should encourage the people to go there
- In the PHC they can only treat minor things, for sick patients we need the AH

**Health Animator:**

**SC:**

- someone is in the SC, so the people can come always
- training for the VHW
- the people can get immediate medical help, Gudalur is too far to go there always
- the people use it regularly

**MC:**

- was very important to remove the fear of the people and for ANC and Immunisations of children
- should stop now, the SC must take over the role, the people must now learn to take enough responsibility for their own health, to come to the SC
- was very important for the health education of the villages (Video)

**AH:**

- it is very good, it is our own hospital
- the nurses speak the tribal languages
- they care much, the treatment is very well
- in the PHC we are not treated, the GAH is the only hospital with a good treatment for us
- nobody is afraid of the doctors and the medicine there
- it is the best hospital in the like

### **Hospital Staff:**

#### **SC:**

- **the SC can pick up all sick patients and refer them to the hospital**
- **all the time someone is there for the people to go, to get treatment**
- **health training for VHW**
- **the people must take now enough responsibility for their own health to go to the SC**
- **in two areas there is no SC and in one are no HA, that has to be changed, even in Gudalur we need a SC for the preventive care, this role the GAH cannot fulfil**

#### **MC:**

- **was very important to remove the fear of the people and for ANC and the immunisation of the children**
- **should stop now, the SC must take over the role, the people must now learn to take enough responsibility for their own health, to come to the SC, the MC comes only each other week, the SC is open every day**
- **was very important for the health education of the villages (Video)**

#### **AH:**

- **all the staff except the doctors are Adivasis**
- **it is the hospital for the people**
- **the Adivasis are in charge of the running of the hospital themselves**
- **the treatment in the GH is still very poor, even in the better one they cannot treat the more severe diseases**
- **the people decide about the rule of the hospital**

### **3.2.6 Health insurance**

#### **VHW:**

- **most of the people of the village paid the insurance premium, everybody benefits from it, because of the insurance the GAH hospital is free, with the premium the medicine is free.**
- **All who paid the premium have free medical care in the GAH, SC and MC, they who did not pay benefit also, they pay only the medicine**
- **everybody benefits from the insurance, the GAH is our hospital**
- **Without the insurance we have to go to the PHC, where they don't treat us well, often they don't even look at us**

### **Village people (VHW+):**

- **-the family is insured, most families in the village paid the premium, than the medicine in the AH is free and this is our hospital**
- **we want to go to the AH, there they take care of us**
- **even the people who don't pay the premium get some benefits from it, they do not have to pay their stay in the AH**
- **without the insurance we have to go to the PHC, where they do not take care of us or pay the medicine, everybody should pay the premium, in the PHC they often take money too, although they are not allowed**
- **most of the people who are not insured spent the money for alcohol instead of paying the premium**
- **$\frac{3}{4}$  (1/2) of the village is insured**
- **reasons for being not insured: don't have money, will not fall seriously ill, don't need the insurance, they are scared, that the animators cheat for the money**

### **Village people (VHW-):**

- **With the insurance the medicine in the AH is free, without the insurance we have to pay for the medicine, that can be a lot of money**
- **everybody benefits from it, even the people, who didn't pay the premium, because of the insurance we can go to our own hospital, there they really take care of us**
- **most families in the village paid the premium**
- **only very few people in the village paid the premium**
- **reasons for not paying: don't know, money is not used correctly, they get foreign funds and want our money, will not get ill, premium is too high**
- **- last year one of the animators cheated with the money, so this year we have problems, the confidence of the people is disturbed**
- **- her husband uses all the money for alcohol, so the family could not pay the insurance**

### **Animator:**

- **those who understand the concept pay for the insurance**
- **for those, who paid the insurance the medicine in the hospital is free, the others have to pay for the medicine. Everybody benefits from it, for all the SC, MC and the stay in the AH is free, even non sangham members.**
- **through the insurance we have our own hospital**
- **there are not enough animators to collect the premium**

- about  $\frac{1}{2}$  ( $\frac{3}{4}$ ) of the people in the area paid the premium
- less than half of the people have paid the premium
- they who did not pay the premium very often go to the PHC, where they do not take care of them, to the PH, where they have to spent lots of money or to missionary hospitals, where they try to convert them
- **reasons for not paying the premium: they spent the money for alcohol, do not understand the concept, or feel the money is not used correctly or they are influenced by non tribals, who say, we take the money, when we get foreign funds, have financial problems**
- **we must make the concept more understandable, the premium is a way to take responsibility for their own health and contribution to the community.**

#### **Health Animator:**

- **for they who paid the insurance the medicine in the hospital is free, the others have to pay for the medicine. Everybody benefits from it, for all the SC, MC and the stay in the AH is free, even non sangham members**
- **those who understood the concept, pay the premium**
- **through the insurance we have our own hospital**
- about  $\frac{3}{4}$ ( $\frac{1}{2}$ ) of the people in the area have paid the insurance
- **the insurance is a community thing, we all fall in debts without it**
- **because of the insurance we have our own hospital, where they take care of us and where are our own people, if not we have to go to the PHC, where the care is worse and where they cannot handle serious diseases or to a PH, which is expensive**
- **reasons for not paying the insurance: the people feel, they won't fall ill, do not understand the concept, that everybody benefits from it, all the community**
- **because of the insurance the people take responsibility for their own health**

#### **Hospital Staff:**

- **The insurance started 1992, ACCORD paid 200.000 Rp to insure all sangham members for 16 Rp per person a year for 5 years. New sangham members joined the insurance immediately. The insurance covers the hospital expenses in the GAH (medicine, stay, examination etc.) for the insured Adivasis, and some emergency cases. 1992 we insured ca. 5000 sangham members, now about 9.300 sangham members are insured We recollect a part of the insurance premium from the people (1993: 4 Rp, 1994: 6 Rp, 1995: 8Rp, 1996: 10 Rp per person). For the people, who pay the insurance premium, medicine in the GAH, the SC and MC is free, they only have to pay an**

administration fee of 2 Rp, they who don't pay the insurance premium have to pay the medicine, for all of them the examinations; doctors are free, also for the non sangham members. The non-tribals have to pay medicine, examinations, doctors and their stay (e.g. for a delivery 300 Rp.). all of the have to pay their food: 10 Rp per day

So there are three categories:

1. sangham members, who paid the insurance premium: hospital, SC, MC free, pay only 2 Rp administration fee and their food in the AH, stay, examinations and doctors are free
2. sangham members, who didn't pay the insurance premium and non-sangham members: pay for medicine in hospital, SC and MC and for their food in the AH, stay, examinations, and doctors are free
3. non tribals: pay everything (medicine, examinations, doctors, stay, food)
  - The insurance covers only the hospital expenses, not the SC and the MC. For these expenses the money is taken, that the non-tribals pay, who come to the AH. With that the running costs of the health system are covered, not extra costs, they need foreign funding.
  - the repaying of the premium is important, to grow the responsibility of the people for their own health.
  - when the animators go and collect the insurance premium, there is a sangham meeting, so it causes discussion.
  - everybody is able to pay 10 Rp. per year
  - it is a community thing, because everybody pays, the neighbour can go for free to the AH, everybody benefits from it, even the people, who don't pay the insurance premium and the non sangham members, also they only have to pay the medicine.
  - Over 50 % of the sangham members have pay the premium, the others feel, they do not have enough money, their money is not used correctly or they are influenced by non-tribals who say, why we collect money, if we get foreign funds. we have to think if how to make our concept more understandable.

### 3.2.7 The most common diseases:

VHW:

- scabies, diarrhoea, vomiting, fever, TB, bronchopneumonia, cough, headache, stomach pain, vomiting

Village people (VHW+):

- TB, diarrhoea, cough, fever, scabies, vomiting, bronchopneumonia

Village people (VHW-):

- diarrhoea, cough, fever, problems with pregnancies, scabies, headache, vomiting

**Animator:**

- **headache, fever, diarrhoea, scabies, stomach pain, anaemia, dysentery, cold, cough**

**Health animator:**

- **worms, hypertension, anaemia, dysentery, fever, bronchitis, viral fever, scabies**

**Hospital staff:**

- **diarrhoea, gastritis, bronchitis, anaemia, worms, malnutrition, scabies, bronchopneumonia, malnutrition, headache, tonsillitis, bronchitis**

**3.2.8 Reasons for being ill:**

This point was asked to get an understanding of the different perceptions of health/illness.

**VHW:**

- **dirt**
- **do not boiled drinking water**
- **most diseases are water related**
- **muddy water, which is determined, because of the monsoon or by the people excrement's in the water, they use it for drinking and for toilet**
- a lack of individual hygiene (washing, cutting nails etc.)
- **malnutrition**
- **alcohol**
- **people are ashamed to admit, that they are poor**
- diseases do not have a reason, that's a part of life
- dirty cuts, when the people do not come to get them disinfected, so they relate to infections
- there are diseases, which come, because they have to come and there are unnecessary diseases, which come from dirty water

**Village people (VHW+):**

- diseases do not have a reason, that's a part of life
- **do not know the reasons for getting ill**
- **dirty water, unboiled drinking water**

- **muddy water: when the rain starts, the muddy water spoils the well**
- **same water for drinking and for toilet**
- **when we go out of the village for work, they drink unboiled water**
- **often the boiled water, which we boil in the morning does not last the whole day**

**Village people (VHW-):**

- **dirty water: many children go to other houses and drink unboiled water**
- **fear**
- **there is no reason to get ill**
- **we do not know the reasons for getting ill**
- **the godmen tells us the reasons for getting ill (a curse of somebody, spirits from the ancestors, who are angry visit you, spirits bring the diseases from outside, so you have just to wait, we can't do anything)**
- **dirty food, which is sold on the market.**
- **our way of life**
- **the food we eat**

**Animator:**

- **alcohol**
- **malnutrition (very often they do not buy enough food because the men spent the money in alcohol); before there was a forest for food gathering, now there is no more forest, sometimes they drink only black tea**
- **unboiled drinking water**
- **they boil the drinking water at home, but when the people work outside, they still drink unboiled water, also in the villages, it's sometimes difficult to boil the water always**
- **dirty water, the people determine the water in using it for drinking and for toilet**
- **working in the rains**

**Health Animator:**

- **for viral fever: no reason**
- **diarrhoea, worms: dirty water**
- **anaemia: malnutrition**
- **dirty water, unboiled drinking water, same water for drinking and for toilet**

- **not enough awareness about boiling water and individual hygiene (washing clothes and themselves, cut nails, wash babies)**

- insects spoil the food

- **malnutrition**

**Hospital staff:**

- **malnutrition (food- resources of the forest are lost)**

- **low social- economic standard**

- **lack of knowledge about preventive health care**

- **unboiled drinking water: the water cannot get chlorinated, because the water resource is not a well, but a waterhole, all the firewood has to be collected by the women and it is a waste of firewood, but the only save way. often this is not possible. When they go for work, they drink unboiled water**

- **anaemia: sickle- cell anaemia in combination with malnutrition (Hb up to 2.0), 30% of the population has sickle-cell- anaemia**

**3.2.9 In case of getting ill, where do the people go first?**

- **VHW:**

- **first to me and to traditional healers and godmen, if that doesn't help to the GAH or SC)**

- **-GAH, they who do not pay insurance to PHC, not to me, they trust more people from outside than me**

- **first they go to the traditional healer (herbal medicine) and to the godmen for puja, if that doesn't help, they come to me, than they go to the GAH or to a PH.**

**Village people (VHW+):**

- **first to the VHW, than to the GAH or MC, after that we go to godmen, and to traditional healers**

- **not to traditional healers or godmen, that doesn't work, the herbal medicine, which was found in the forest, doe not exist any more, because the forest is destroyed**

- **not to the SC, very often nobody id there**

- **first to the traditional healer and godmen, if this doesn't help, to the VHW, than to the GAH or if we have money to the PH.(the GAH is too far)**

- **first to the traditional healer and godmen, if this doesn't help, to the VHW, than to the SC and if it is very serious to the AH**

- **go to the AH and to traditional healer and godmen, not to the VHW (she doesn't work properly)**

### **Village people (VHW-):**

- to a private hospital, which is good, the Adivasi hospital is quite far. If they have no money, they go to the GAH
- not to the SC, very often there is nobody
- **to the SC or MC**, not any more to traditional healers, the knowledge about herbal medicine is lost, and the forest is lost, where the herbs were found, not to godmen, that doesn't work, when we went there, the people died
- **to the SC or MC and to traditional healers and godmen, if it is very serious to the GAH**
- they who are not insured to PH or to PHC

### **Animator:**

- **first they go to the VHW or to the SC, than most go to traditional healers and godmen**
- to the VHW or to the GAH, very few to the SC (some don't know, for some it is too far), only they, for whom it is nearby, they who do not pay insurance to the PHC or PH
- **in the villages without a VHW most go first to the godmen and to traditional healers**
- not to the SC, often nobody is there
- to the VHW or directly the AH, but some do not go to their VHW and some do not know the SC, only in very serious cases they go also to the godmen, some go to an NGO hospital from missionaries, who try to convert them

### **Health animator:**

- **what is closest, VHW or SC, than for minor diseases to the PHC, in serious cases to the GAH**
- first to the godmen, not any more to traditional healers, the knowledge about the herbs is mostly lost, than they go to the VHW and to the SC, than to the GAH

### **Hospital staff:**

- To the VHW or to the hospital, some still go to godmen, where is a SC, they go there, some who have a VHW do not go there and go directly to the SC or to the GAH
- **first to traditional healer for herbal medicine, then it depend on the diseases, or minor problems to the VHW (cough, fever, diarrhoea), for more serious diseases to the SC or a private doctor and for major things they come directly to the hospital (GAH or PHC or PH). Only BK go to the godmen and call the spirits**

- First to godmen, then to traditional healer for herbal medicine, if there is one, then whatever is nearby: VHW, SC or a private doctor, in serious cases they come to the GAH.

### **3.2.10 Changes through the work of the sanghams and ACCORD:**

#### **VHW:**

- **Fear of outsiders and estate people is gone**
- **more unity and strengths**
- **income of the people increased**
- **we got our land back**
- **tea planting program**
- **we have a sangham**
- **awareness about our rights increased**
- **Adivasis are now a part of Indian society**

#### **Village people (VHW+):**

- **much less fear from outsiders, medicine and estate people, -before we just run away, when someone from outside came to our village**
- better houses by the housing program
- more unity and strengths
- **income of the people increased**
- **we got our land back**
- **not any more bonded labourers, now we ask for salaries**
- **now we cultivate our land (tea, coffee, pepper, vegetables, coconut)**
- **much more knowledge and awareness about our rights**
- **we learnt to express ourselves to outsiders**
- we have sangham meetings, where the animator discusses with us, how to go forward, to improve our standard, to fight alcohol, we have our own organisation
- **tea planting program**
- cows, goats and chicken
- **school: many more children go to school**
- **-health (GAH, VHW etc.)**
- more villages join the sangham
- no we become like you, where pens and T-shirt, not any more our traditional clothes

### **Village people (VHW-):**

- **much less fear from outside people, before we just run away, when someone. from outside came to our village**
- **more confidence in interacting with the outside world**
- some people got work ACCORD
- now we are organised to fight for our land
- the children go to school
- our life got better

### **Animator:**

- **knowledge to analyse the situation, why we are poor**
- **fear from the outside world is gone**
- **more confidence in interacting with non tribals**
- the people learnt to live (e.g. not any more to destroy their houses after someone died)
- **many villages got their land back (successful landfights)**
- **not any more bonded labourers, now the people work only for salaries**
- alcohol problem got less
- **more strengths and unity, because the people are organised**
- **cultivation of the land (tea, coffee, pepper, ginger, vegetables), economical development**
- **tea planting program, own tribal tea nursery**
- **many cases at the court against the Chettys are won**
- **the people now go to the police, to officials, know their rights**
- **most children go to school**
- **income increased**
- **more unity between the different tribes**
- **health improved**
- **much more awareness about their rights**
- **the people learnt to analyse, why they are poor**

### **Health Animator:**

- **fear from the outside world is gone**
- **pride out of the feeling to have an organisation**
- **tea planting program**
- **many villages got their land back**

- many children go to school
- income level increased

**Hospital Staff:**

- more awareness of their rights
- many villages got their land back
- the fear of the outside world is gone
- many cases at the court were filed and won
- more unity and strength
- self image and self confidence has improved, the ability to interact with the outside world
- some are able to sit and analyse their problems
- need of education for coping with the outside world came up, many children go to school
- not any more bonded labourers
- income increased
- tea planting program

**3.2.11 What did not change through the work of the sanghams and ACCORD**

**VHW:**

- alcohol problem
- some people oppose the sangham, they want more benefits
- not much change

**Village people (VHW+):**

- alcohol problem, alcohol spoils the sangham, destroys the political work
- the sangham does not meet regularly, often the people do not come the meetings
- lack of interest of the sangham work of most people
- not much change
- the people are still poor
- lack of unity
- some people do not join the sangham, because they fear to lose government benefits
- it is difficult to get busses or jeeps to reach Gudalur

### **Village people (VHW-):**

- **alcohol problem**
- **fear of drunken men**
- **the people are still poor**
- the animator should come more often to the village
- we have no land
- **we have very bad houses**
- **the sangham meets only rarely, only when the animator or the nurse call for it**
- **no unity in the sangham**
- lack of unity also among the women
- some people are still frightened of outsiders
- it is difficult to get busses or jeeps to reach Gudalur
- we did not get our money back, which we gave to the animators as an deposit
- **not many things changed**

### **Animator:**

- **alcohol problem: alcohol spoils the sangham work, sometimes they get violent even while the sangham meetings or they do not meet at all**
- **there is still an income problem of the villages, who do not have land**
- **in the area very few people have land**
- **the villages lost the land of their temples**
- too less animators, some animators cheated the people , took money, that destroys the trust in our work
- still the organisation is depending on foreign funding
- **too less children go to school**
- **in many villages the sangham is too week, does not meet regularly, especially KN villages**

### **Health Animator:**

- **alcohol problem**
- **in some villages the sangham does not meet**
- **some villages still do not have land**
- **too many people are not educated**
- **too less income of many people**

### **Hospital Staff:**

- **alcohol problem: the alcohol spoils the sangham, because of the alcohol some sanghams do not meet; in the team there is a rule, that alcohol is strictly forbidden, because of that we lost some animators**
- **too less income of the people**
- **many villages still do not have land**
- **many villages still have these bad government houses**
- one areas have a problem of leadership, there an animator cheated for money then another animator shifted to another area
- education level of the people must improve more, than all other things will improve too (income, health etc.)
- the organisation is still dependent on foreign funding

### **3.2.12 Problems of the work and for the villages**

#### **GA:**

- **alcohol problem of the men: the alcohol destroys everything, the families, the samgham the community**
- **a lack of community inside the village**
- no land
- bad houses

#### **Village people (VHW +):**

- **alcohol: most men drink daily, beat the women or each other, spent all their money for alcohol**
- **the samgham is too weak**
- a lack of unity inside the village
- too less children go to school

#### **Village people (VHW -):**

- **alcohol: most men drink daily, beat the women or each other, spent all their money for alcohol**
- **the samgham is too weak**
- elephants destroy the houses and are dangerous for the children
- too less children go to school

### **Animator**

- **alcohol: most men (and some women) drink daily, some get violent, spent all their money for alcohol, do not buy enough food or clothes, do not pay the school fee**
- **too less villages have land, when they do not have land, they do not have an income**
- **too less children go to school**

### **Health animator:**

- **alcohol: most men (and some women) drink daily, some get violent, spent all their money for alcohol, do not buy enough food or clothes, do not pay the school fee**
- **some villages have bad houses**

### **Hospital staff**

- **alcohol: most men (and some women) drink daily, some get violent, spent all their money for alcohol, beat the women, the alcohol spoils everything: the political work, the whole personality. When the men get drunk, they do not speak any more, it is the alcohol, who speaks.**
- **nicotine: the incidence of lung cancer increased within the last years tremendously**
- **some villages have no land and/or bad houses**

### **3.2.13 Co-operation inside ACCORD and AMS (health program and the whole organisation)**

#### **VHW:**

- **sangham meetings (health issues are discussed, political issues)**
- **area meetings 1/week (animators, teachers, VHW, some sangham leaders)**
- **all-team meeting 1/months**
- **hospital committee meeting**
- **VHW training in the GAH and 1/month in the SC by the HA**
- **MC comes each other week, for sick patients they call a vehicle to the village**
- **sometimes the HA comes with her**
- **animator come with her to far away villages and ask her for health problems**
- **co-operation with the GN for immunisation of children**

#### **Village people (VHW+):**

- sangham meetings (village problems, VHW explains about health)
- VHW goes every week to the area meetings
- animator goes to ACCORD and AMS meetings
- animator/ VHW calls the sangham for meetings, if anything has to be discussed

#### **Village people (VHW-):**

- sangham meetings
- animator goes to ACCORD and AMS meetings
- animator calls the sangham for meetings, if anything has to be discussed

#### **Animator:**

- sangham meetings (political and health problems)
- area meetings 1/week (animators, teachers, VHW, some sangham leaders)
- all-team meeting 1/months
- representative meetings 1/month
- hospital committee meeting 1/ month
- ACCORD office
- he goes with the VHW to far away villages and to all villages with new VHW and asks the VHW sometimes. for health problems
- in the villages without a VHW the people go to the animators for health problems

#### **Health Animator:**

- sangham meetings
- area meetings 1/week (animators, teachers, VHW, some sangham leaders)
- all-team meeting 1/months
- representative meeting 1/ month
- area leader meeting 1/month
- HA meeting
- HA training
- hospital staff meeting
- hospital committee meeting
- area visit by the HA 1-2/ month with training of the VHW

- MC by the HA (1 area)
- training for VHW in the SC by the HA 1/month
- SC visit 2/ month by the doctors
- MC in three areas

#### **Hospital Staff:**

- sangham meetings (political and health problems)
- area meetings 1/week (animators, teachers, VHW, some sangham leaders)
- all-team meeting 1/months
- representative meetings 1/month
- area leader meeting 1/month
- hospital committee meeting 1/ month (some animators, some VHW, area leaders, health animators, hospital staff, each are sends one person)
- hospital staff meeting 1/ month (hospital staff and HA)
- HA meeting
- HA training
- VHW training once a year in the GAH, in one area by the HA
- MC in two areas
- area visit by the HA (from 2/month- 1/ 2 months), MC by an HA (one area)
- ACCORD office, up from next year the ACCORD office will be inside the hospital
- a lot of the co-operation is on an informal way, it works without we know, how it works

#### **3.2.14 Differences in the co-operation with the villages with and without a VHW**

##### **Animator:**

- difference in awareness and knowledge of the people, in the villages without a VHW the people go more to PH or GH, they are less aware of our hospital and the SC
- not much difference for his work as an animator, where is no VHW, the animators take care of the health

##### **Health Animator:**

- no difference for my work

- **difference in awareness and knowledge of the people, in the villages without a VHW they often even do not know basic things, she herself has not enough time for the teaching**

**Hospital Staff:**

- **nowadays there is not much of a difference**
- the people of villages with a VHW come much quicker to the hospital
- **difference in the following up from advises after discharge from the hospital**
- **difference in the warmth of the people**
- difference in knowledge and awareness, so it is more difficult to work in villages without a VHW
- perhaps in 20 years the VHW are not needed any more, because the people will be educated

## **4 Discussion**

### **4.1 The quantitative part**

#### **4.1.1 Diarrhoea**

For remembering: Although there was a significant lead in knowledge of the mothers out of the villages with a VHW according, prevention and therapy of diarrhoea, there was no difference in the incidence of diarrhoea while the examined period. As main information source the mothers from the villages with a VHW referred the VHW, the mothers from the villages without a VHW neighbours or nobody.

The main question which was also discussed with the area teams after the survey was done, was: Why is there no difference in the incidence, while there is a significant difference in the knowledge of prevention? Two answers seem to be plausible: The children drink over the day in other houses and in neighbour villages unboiled water and in the villages there are no toilets, so the same water is used for drinking and for toilet, that means that the water gets easily determined. Only in one village there is a bore well and in very few villages other wells, most villages have as there water source a water whole, which are most easily determined. According to the literature only 30% of the Indian population have access to clean drinking water and only 0.5% of the rural population have access to toilets. In Tamil Nadu the average is with 20.6% much better, but the Adivasi population as a most marginalised population should be more in the national average from 0.5%.<sup>21</sup> The literature recommends to built simple toilets in the villages against the determination of the water, which can be cemented or uncemented, shall be far enough from the hoses, for the individual families or for the whole village. With that there are the following problems: If the toilets are not cemented, the water determinations continues, because the water wholes are on the deepest point of the villages, so all the water -especially while monsoon time- is collected there. If the toilets are cemented, there is the problem, that water is necessary, to keep them clean and non smelling. To carry the water from far away for that is difficult, but if the toilets are dirty, they do not get used. This shall show the complexity, which is behind such a problem, and which factors have to be thought of to solve the problem.

Another important point is, how to make the water drinkable: on the long term the boiling of the water is surely a bad alternative, and the building of wells, where the chloration of the water is possible is to prefer. But at the moment, where are water wholes for the most villages the only water source, the boiling of the drinking water is the only save alternative for drinking water. In Tamil Nadu the drinking of cold water is according to the traditional medicine seen as unhealthy. So the step from heating the water to boiling the water is not too far.

The next point is , that there is a clear lead in knowledge of the mothers out of the villages with a VHW to give the children ORT or ricewater in case of getting diarrhoea (93% in the villages with compared to 54% out of the villages without a

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<sup>21</sup> Health monitor 94, 183-184

VHW). It can be anticipated that this knowledge is also put into practice. No mother said to reduce the fluid in case of diarrhoea, but 46% out of the villages without a VHW said not to change the amount of fluid, the only seen case of mild dehydration while the survey was in a villages without a VHW. Summarised, the therapy with ORT/ricewater seems to get accepted in the villages with a VHW.

*clin. example:*

*In a village without a VHW a mother tells that her baby died from diarrhoea a few days before. In the GAH they had told her to give ricewater and more fluid, but she stopped doing it, when they were discharged from the hospital.*

*In the neighbour house a nine months old baby has diarrhoea since one week and symptoms of mild dehydration. The mother said that she did not change the amount of fluid, she gave to the baby. The baby and the mother are taken to the GAH, where they stay for to weeks, because the baby is also in the III. grade malnourished. (9 month, 4.5 kg). After getting discharged from the GAH, the HA controls regularly the weight of the child.*

The lead in knowledge of the mothers out of the village with a VHW is also there according the knowledge, in which cases, they shall go to the SC/hospital. Especially, the symptoms of dysentery (blood and mucous, continuous vomiting) are known much more often by the mothers out of the villages with a VHW. Also here, it can be anticipated, that this knowledge is put into practice. Compared to the answers out of the qualitative part of the survey, we get the same answers: The increasing of knowledge about therapy and prevention of diarrhoea is seen as a change by the health program. In the qualitative interviews the incidence of diarrhoea is seen as decreasing because of the increasing knowledge. Quantitative this could only get proved by a comparison with non sangham villages.

The program against diarrhoea is estimated as the most successful program according to the knowledge about therapy and prevention and the number of deaths because of diarrhoea, which decreased tremendously while the last years. This is a most important point, because of 4.000.000 deaths of diarrhoea per year world-wide, there are 1.500.000 alone in India and according to the WHO 1.000.00 is avoided because of ORT.<sup>22</sup>

#### **4.1.2 Nutrition**

The weight (weight/height and weight/ age) was in both groups without a difference. The average of number of meals was higher in the group of children out of the villages with a VHW, these children got weighed more often, got more often ragi and their mothers followed more often the given instructions (ragi, milk, eggs, vegetables, etc.). When the children got weighed, the mothers got on both side instructions, mostly from AHS( some also from GN) or the VHW, no difference was measurable. But there was a significant difference in the follow up from the given instructions. When this result is seen together with the results from the qualitative part, it is obvious, that the health education is seen as one of the working focuses of the VHW, from which the nutrition of children is an important part. To give one or sometimes instructions about nutrition is obviously not enough, but the all-time presence of a VHW, who is able to give continuous health education makes changes of the behaviour.

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<sup>22</sup> Textbook, p. 315-317

Comparable to the results of diarrhoea, there is no difference in the weight/underweight of the children although there is this difference in knowledge. In the weight/age there are 6% of the children in the III. gr. underweight, 52% in normal weight. In their height/weight there are 8% in III. gr. underweight and 26% in normal weight. On the first view it seems, that there is a vast difference, but it has to be thought of, that the results are not comparable, because two different classifications had to be used. But the subjective assessment of the health team is very interesting. The team sees a change for the worse in the nutritious situation of the Adivasis and especially the children since 1991, the opening of the Indian market through WTO. When it is seen that the weight/age shows more the chronic nutritious situation and weight/height more the acute situation, it has to be realised, that the health team sees exactly this change for the worse while the last years in the nutrition, that children who were in normal weight, again slipped into underweight. Since the opening of the Indian market, lots of subsidies were reduced, which had guaranteed before a certain amount of food. This shows the complexity of this point, where solutions have to include political solutions and struggles, not only on a regional or national, but also on an international level.

When there is looked exemplary on a few weights of children the following can be seen:

*clin. example:*

- *the first child, Badiji, is three years old and was until her second year in normal weight. After getting a sister, she was not any more breastfed. Her weight had a stand still. After an episode of diarrhoea in the last weeks, she lost even more weight. The mother gave ricewater and is now feeding her with ragi and some eggs, what the VHW told her to do.*
- *The second child, Bomen, is 6 months old and is breastfed. He gets ragi about three times a day, he has a normal weight.*
- *The third child, Kumar, is three years old, and the VHW describes him a problematic. Since he was born he has frequent infections. His father is drinking and all three children of the family are malnourished. Until his 6. month he was III. gr. underweight, since then he is II. gr. underweight. He only gets ragi, when the VHW brings it. Within the last 6 months he gained a bit of weight.*

The children in the villages with a VHW got in average half a meal more and only 3% of the children over four months were only breastfed (10% of the children in the villages without a VHW). 35% of the children got ragi the day before the interview compared to 7% of the children in the villages without a VHW. So a significant difference can be seen, but it is to ask, why in total only so few children got ragi. One possible answer is, that ragi is more expensive than rice, and rice can be bought subsidised on the ration cards, but not ragi. To buy ragi the family has to do an extra effort and spent extra costs. But ragi has the advantage, that it is an excellent weaning food and the people can feed it to the babies without doing a puja at the temple, what can lead to a very late feeding of rice (for what this puja is necessary).

Breastfeeding is still the common practice. While the survey not a single child was observed, who was fed with the bottle. Normally the babies are breastfed until the next baby is coming. Many children were observed, who were breastfed

up to three years. By the health team the mothers are encouraged to continue the breastfeeding.

To add a teaspoon of oil to the meals of especially the malnourished children was not mentioned a single time. So obviously this is not told to the mothers by the health team. An possible explanation is, that a litre of oil costs 40 Rs, a day salary.

There is a significant difference, when the children were weighed the last time, 42% of the children over six months out of the villages without a VHW were never weighed in their life. Also two mothers out of these villages did not allow to weigh their children, because they were frightened, that they could lose weight because of the weighing. The weighing is important, because the mothers get instructions about the feeding of the child, each time the child gets weighed. The children got weighed mainly by AHS. In the villages without a VHW also 11% of the children were weighed in the PHC. But the instructions were given nearly only by AHS. The VHW seems to have an important role, that the instructions come into practice: there was a significant difference in the follow up from the instructions.

#### **4.1.3 Antenatal coverage**

From the in the interviews questioned 176 deliveries, two children were died in the meantime: one child short time after birth in the 7. month of pregnancy because of preterm pains and one child with two years because of measles. Both children were out of villages without a VHW. In both cases there was no medical help.

The mothers out of the villages with a VHW were significant more often examined while their delivery and went also more often for a check up. In his survey from A. Imhof<sup>23</sup> proves at the example from India the relationship of the educational level of women, the decline of the infant mortality and the more frequent use of health services. This result, that with more education, what means here health education through the VHW and AHS the women use more frequently the health services, get more often examined and go for a check up, can be confirmed by this study. The health education of the VHW was said in the qualitative part by all questioned groups to be an important part for a change of behaviour. Fears and prejudices were dismantled and the knowledge of the women increased. Because of this the women go more often for a check up, get their children more often immunised and take themselves more care of the symptoms of diseases because of the more of knowledge. Imhof describes education and knowledge as the most important catalytic converter of a change of behaviour. So it gets clear, that through the health education of the VHW, the women get a more of education and knowledge. And because of that changes of behaviour are triggered, which can spread out on other fields. In this way the described changes of behaviour of the pregnant women have to be understood.

The women in the villages were examined mainly by the VHW, in the villages without a VHW mainly by the MC, but much more rare than monthly. Also the women out of the villages with a VHW went much more often for a check up, which was done by the MC, SC, PHC or the hospitals. The same significant

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<sup>23</sup> Lebenszeit, p. 240-247

difference we get according to the TT immunisation and the iron and calcium prophylactics. For both the PHCs and the PH play only a marginal role.

These results are compared to the national and state level<sup>24</sup>:

*Chart 6:*

**Comparison of the antenatal coverage:**

	ACCORD VHW+	ACCORD VHW-	ACCORD total	India rural areas	Tamil Nadu rural areas
TT	85 %	56 %	71 %	55.3 %	92 %
iron/calcium	89 %	59 %	74 %	45.1 %	81.6 %
ANC	93 %	71 %	83 %	24.3 %	49.5 %
Check Up	90 %	61 %	80 %	41.1 %	70.8 %

TT immunisation and iron/calcium prophylactics are far over the national, but under the state average, in the villages with a VHW in the state average. The ANC and check up is in total over the national and state level, the ANC even in villages without a VHW. It has to be thought of that these official figures can be to positive for the state and national level.

According to the home/hospital deliveries no significant difference was measurable, the women are only encourages to a hospital delivery in case of problems. But the VHW should conduct uncomplicated deliveries in the villages, what she did only in 22% of the home deliveries in the villages with a VHW.

When these results are compared with the state and national average from 1992-1993 we get the following result<sup>25</sup>:

*Table 7:*

**Comparison of deliveries:**

	ACCORD VHW+	ACCORD VHW-	ACCORD total	India rural areas	Tamil Nadu rural areas
home deliveries	66 %	83 %	73 %	83,9 %	51.0 %
hospital deliveries	34 %	17 %	27 %	16.1 %	49 %
doctor	33 %	15 %	24 %	13.8 %	29.8 %
medical staff	16 %	4 %	10 %	11.7 %	30.9 %
traditional midwife	11 %	8 %	10 %	39 %	29.8 %
family/ nobody	37 %	72 %	54 %	35,5 %	9,5 %

The number of hospital deliveries is over the national level (in the villages without a VHW on the national level) and under the state level. The traditional midwife plays compared to the national and the state level only a marginal role, so the amount of deliveries conducted only by family members or nobody is over the

<sup>24</sup> Health Monitor, p. 138-140

<sup>25</sup> Health Monitor, p. 135-137

national and far over the state level (in the villages with a VHW on the state level). A possible explanation for the marginal role of the traditional midwives is the dying out of the traditional medicine which was mentioned in the qualitative part.

On the question about problems while the pregnancy, the mothers in the villages with a VHW tell, that the VHW told them to go to the hospital/SC.

*clin. example:*

*Shanta delivered two years ago in the GAH. She tells, she had for a couple of days swollen feet and headache. She went to the VHW, who examined her urine and who went with her to the GAH. There they took her BP and told her to stay. She stayed for four weeks and delivered there.*

In the villages without a VHW, three mothers tell about problems, where it did not come to medical action, but they just waited, in all other cases, they mothers went to the SC, hospital or MC.

*clin. example:*

*Vellachi delivered two years ago at home, her mother delivered the child. She went regularly to the MC for check ups while her pregnancy. She was in labour for three days, they called the priest, who told them to wait, after calling the spirits. After three days the child came.*

Together with the results of the qualitative part the role of the VHW is seen as very important for the regular examinations and the check ups and to recognise problems while the pregnancy, which she refers to the SC/GAH. The assessment is, that through the health program and because of the work of the VHW much less women die while the pregnancy and in childbirth. The people see this development as extremely positive.

#### **4.1.4 Immunisation**

According to the basic immunisation (1.-3. OPV and DPT, and measles) and to all individual immunisations there are significant more children immunised in the villages with a VHW.

It is remarkable, that 84% of the children in the villages without a VHW received some immunisations, but only 21% reached the basic immunisation. In the villages with a VHW 74% of the children had reached the basic immunisation. Though there was no difference measurable in receiving any immunisation, there is a vast difference in the reaching of the basic immunisation.

These results are compared with the state and national level<sup>26</sup> and with the level for West- and East-Germany<sup>27</sup>.

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<sup>26</sup> Health Monitor, p. 141-143

<sup>27</sup> Impfverhalten Robert Koch, p. 13

*Chart 8:*

**Comparison of immunisations:**

VHW ACCORD village health worker tot.: sangham villages, which were examined in the study							
	ACCORD VHW+	ACCOR D VHW-	ACCORD total	India rural areas	Tamil Nadu rural areas	West- Ger- many	East- Ger- many
3 DPT + OPV	89 %	53 %	70 %	46,6 %	81,6 %	71 % (DT)	64 % (DT)
measles	75 %	24 %	49 %	37,7 %	69,5 %	75,6 %	68,7 %
BCG	74 %	29 %	51 %	57,6 %	90,1 %	- <sup>28</sup>	

The immunisation level of the children is far over the national level and in the villages with a VHW slightly over the state level, in total a bit under the state level. Compared to Germany the immunisation status of the children out of the villages with a VHW is according to DPT/DT higher than in West- and East-Germany (in total about the level of West Germany, higher than East Germany) and according to measles about the level of West-Germany, higher than East-Germany (in total lower than West- and East Germany). This shows, that especially in the villages with a VHW the immunisation level is comparable with international standards.

Here it is to realise, that the Adivasis population is one of the most marginalised groups. When the average in the state is, that 80% of the under five year old children are immunised with DPT and OPV, then normally the Adivasis belong to the 20% who are not immunised. The results and the success of the health program has to be seen in this context.

The measles immunisation seems to be the limitation for the reaching of the basic immunisation. An explanation for this is, that this immunisation is the last immunisation of the basic immunisations and is done with nine months. Also about 10 children have to get immunised together, if not, the vaccine gets wasted. This is one more reason, the measles immunisation gets delayed or is not done. But because measles is under malnutrition and conditions of poverty an extremely dangerous disease, with the complications of bronchopneumonia, diarrhoea and a further decreasing of the weight, the immunisation is important.

*clin. example:*

*In one villages while the survey a child with measles is seen. The VHW of the village says, that all the children in the village are not immunised against measles. In the next days, the HA goes to the village and immunises all children, so no measles endemie came.*

The children are mainly immunised by the MC and the PHCs. As main information source it is the VHW, AHS and the PHC. In the villages without a VHW there is actually a lot of information on the side of the mothers, that there children should get immunised, but this knowledge does not come into practice,

<sup>28</sup> Die BCG Impfung wird nicht in Deutschland im Impfkalender aufgeführt, s. Neue Impfeempfehlungen, Robert Koch, S. iv.

that means into a complete basic immunisation. Also the VHW say, that they have always to remember the mothers to go for the immunisation or go together with the government nurses to the houses. In the discussion of the results with the area teams, it was questioned, how the government nurses could work more efficient, so that the basic immunisation would be assured. But as a critical point it was mentioned, that the government nurse use non sterile needles, when they go without the VHW or HA to the villages.

According to the qualitative results the VHW is the key person for the fact, that the children really get immunised, so that it can be assumed, that she is responsible for this change.

In the knowledge of the mothers against which diseases their children got immunised no significant difference can be seen. 25% know minimum one disease, 20% minimum two. This relative poor knowledge explains partly, why the information on both sides about immunisation does not come into practice in the villages without a VHW. The VHW themselves report, that they have to remember the mothers of each single immunisation, so that this work of the VHW is obviously resulting in a better reaching of the basic immunisation. In the discussion with the area teams it was questioned, how the mothers can be educated, to bring their children to the immunisations without an individual memory. A clear discrepancy can be observed between the big interest of there pregnant women for a check up and examinations and the little interest, to get their children immunised. A possible explanation for this is , that the relationship: immunisation - prevention of a disease is less near than the relationship: check up - problems while the pregnancy. But also in the west it is extremely difficult to get a satisfying rate of basic immunised children. After the break down of the GDR, where all families were informed individually to come for their next immunisation, the immunisation rate decreased from 1989 till 1990 from 87.7% to 56.9%<sup>29</sup>. to solve this problem the Adivasis as well as all people have to develop a lot more health consciousness.

According to the child health cards no difference could be seen between the two groups. In the villages with and without a VHW, many cards were in bad condition, incomplete or did not exist at all. The aim of these cards is, to give the mothers a possibility of self control, but obviously the cards are not used for this. So the question is, how to improve the cards or whether the cards are not meaningful in this context.

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<sup>29</sup> Impfverhalten, Robert Koch, p. 14

## 4.2 Discussion of the qualitative results

### 4.2.1 Assessment and description of the work of the VHW

Summarised it can be said, that there are no fundamental disagreements between the groups. All groups mention the main working fields of the VHW according to the health program. But a difference in the focus of the work can be seen. The team sees the focus of the work of the VHW on the field of prevention and health education, the village people see the focus on the curative part of the work, to give medicine and to examine sick patients. This can be understood as a typical discrepancy between the health needs of a health program and the health needs of the people. Prevention and health education are working long term and do not show an immediate effect, but the effect of the curative field, of giving medicine is immediately visible. This argument is the main argument, why the VHW should also be trained in simple curative medicine<sup>30</sup> The VHW fulfil both fields, what explains the different view of the focus of their work.

Together with the results of the quantitative part, the four health indicators and the examined working fields of the VHW are mentioned by all groups and are described as relevant. It can be assumed, that they also fulfil the subjective health needs of the population, because they mentioned them as positive changes of the health program.

The villages without a VHW said that they would like to have a VHW. As reasons why they do not have one they said, that the sangham did not choose one or that the women cannot read or write. Illiteracy is not seen as an argument of the team against being a VHW. The wish of the village of having or getting a VHW can also be understood in this way, that the work of the VHW fulfils the subjective health needs of the population.

*Roopa, one doctor, tells about the problems and successes of training the VHW:*

*„Cali was one of our most shyest VHW. She was so shy, that she did not come out of her house, when we entered the villages. She was chosen by the sangham as a VHW. She gained a lot of self confidence through her work. Some time ago, she was leading a group of women, who struggled for their landrights. The women got the land and Cali had played a key role in the fight. Her personality flowered and now she speaks in the all team meeting before 100-150 people.“*

### 4.2.2 Role of the VHW in the village

As the main role of the VHW is seen beside the described working fields the reduction of fears from the outside world, from outsiders and from the western medicine.

*Sunitra tells: „ Some time ago we simply ran away, when outsiders came to the villages, hiding ourselves in the forest. We had lots of fears from hospitals, medicine, injections and doctors. Since the VHW is working here, we can go to her without fears, now we go to the hospital, when we fall sick.“*

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<sup>30</sup> Helping Health Workers, p. 3.31.-3.32.

The reduction of fears through the work of the health team, the VHW and the other sectors of the work of ACCORD, is repeated again and again and is seen as one of the central changes through the work of the VHW as well as one of the main working fields.

The village people and the health team mentioned, that the people can go to the VHW without having fear, what gives them a feeling of security, which is not given without the VHW. The health education and the preventive work of the VHW has led to a change of behaviour and to a better health standard of the people. All questioned groups agree to this. Especially the village people mention as the main focus of her work to give medicine and to provide an immediate medical care. A critical voice was heard in one village, which had a VHW for a short time, who did not work. In another village, there was a massive conflict with the VHW, so that she was described from some village people as useless. After analysing the situation there was a massive alcohol problem in the village, so that the VHW did not dare to go alone to the houses.

One VHW saw her own role critically. She said, that a part of the village people trusts her less than s.o. from outside. Here the discrepancy was seen which is described also in the literature, when the VHW are part of the community. While the professionals often argue, that VHW from their own community are faster in getting the confidence of the people, the village people argue, that they get slower the confidence, but more stable.<sup>31</sup>

*Kunjamar tells: „ Some people come to me, when they fall sick, others go directly to the hospital, they trust more to people who come from outside than to me. To a few mothers I tell again and again to boil the drinking water, to cut their nails, to bath themselves, to cover the food, that they will not get scabies or diarrhoea. Some people just do not listen to me and say, that they have their own brain. When somebody from outside tells the same, they listen“*

The difficulty of the VHW of being accepted in their role is also described by the health team. As reasons for it are seen, that most VHW are illiterate and that they have to walk far distances through the forest for visiting other villages. The difficulties of some VHW led in the last years in some cases in leaving the team. For solving these problems sanghams meetings are held together with the animator or in some areas the animators go together with the VHW to far away villages.

Summarised, the work and the role is assessed from all groups positive. Her work is described according to the health program. The changes in behaviour and knowledge are subjectively seen as a result from the work of the VHW.

*Leilla from a village with a VHW tells: „ The VHW does everything for us. When we fall sick, we go to her. She examines the pregnant women. She explains to us, what to do, that we do not fall sick and when to immunise our children. We are not scared to go to her. Since she is working for us we feel much more secure.“*

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<sup>31</sup> Helping Health Workers, p. 2.1.-2.2.

### **4.2.3 Changes through the work of the VHW and through the health program**

The given answers of all groups were very much similar, the following changes are seen as most relevant:

- Reduction of fears from hospitals, doctors and outsiders, who come to the villages
- Reduction of the deaths while pregnancy, in childbirth and because of diarrhoea
- The GAH as their own hospital, where they go in case of falling sick
- better medical treatment
- Better knowledge and health consciousness, especially about the prevention of diseases (scabies, diarrhoea), immunisation and ANC

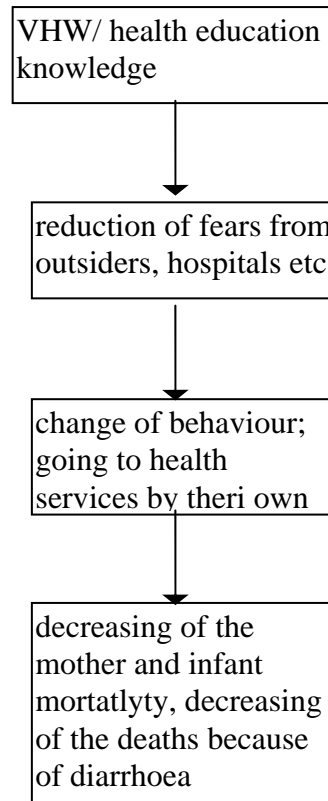
It is remarkable, that the issues of all health indicators of the quantitative part were mentioned as positive changes by all groups. So the subjective assessment was, that the people are healthier, have less diarrhoea and scabies, the nutrition and the immunisation status of the children improved and the deaths in the pregnancy got less because the work of the VHW and the health program. These changes were mentioned also by the villages people especially in the villages with a VHW, so it can be assumed, that these changes are part of the subjective health needs of the people.

As the main change was said the reduction of deaths while the pregnancy, in childbirth and because of diarrhoea and that the fear of hospitals decreased, so that the Adivasis now go to a hospital, when they fall sick.

The relationship, which is characterised in the following picture, shows the role of the VHW:

Picture 2:

**The role of the VHW:**



When we compare this picture with the work the VHW is doing and the given answers to this point, it can be said, that the VHW is fulfilling their role and this role is part of the subjective health needs of the people. A. Imhof is describing in his study the relationship of women's education, the decreasing of mother and infant mortality and the life expectancy of women in India. With a better education a better health standard can be seen. Kerala had 1981 the highest literacy among women (71%), the lowest infant mortality (31/1000) and the highest life expectancy (58 years). In the opposite the northern states Rajasthan, Uttar Pradesh, Madhya Pradesh, Punjab and Haryana had 1981 the lowest literacy (12-16%), a high infant mortality (108-150/1000) and a low life expectancy (37 years)<sup>32</sup>. In this survey the relationship between education, the reduction of deaths while the pregnancy because of diarrhoea etc. can clearly be seen in the qualitative answers.

In the qualitative answers, the GAH gets the best assessment.

*Bomen, an animator, tells: „Before, when we fell sick, we locked the door and called the priests. He made a puja and called the spirits. The spirits told, what to do. Sometimes we had herbal medicine. Some people lived, some died. There was no hospital, where we could go. Many children died because of diarrhoea and many women while their pregnancy. This all*

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<sup>32</sup> Lebenszeit, p. 240-246

*changed now, know the people know much more and have less fear. Now we have our own hospital, where we can go when we get sick.“*

The reduction of fears is seen as one of the most important points, is seen as a result of the health work. With the MC the first outsiders came to the villages. First the Adivasis just ran away, like all questioned groups and were hiding in the forest, describe this first contact. Because of the work of the MC, the GAH and the VHW, the fears of doctors, hospitals and outsiders reduced.

#### **4.2.4 What did not change through the work of the VHW and through the health program?**

The main fields mentioned by all groups are:

- alcoholism especially of the men, here the possible solutions are quite different
- dirty drinking water, contamination of the drinking water by faeces
- a lack of health consciousness of the people

It is remarkable, that the people in the villages without a VHW saw much more critical points and less positive changes through the health program. In the same time, there was in many villages without a VHW the wish to get a VHW or s.o. who is fulfilling the duties of a VHW.. When we see the VHW as a catalytic converter of changes, it is understandable, that the people in the villages without a VHW see much less changes.

*Shanti out of a village without a VHW tells: „Altogether there are not many changes. When we fall sick we know now where to go, but altogether not many things changed. The men still drink alcohol, so the women are scared and hide in the forest. Near by the villages there is a brandy shop, there the men go every day and come home completely drunk only after spending all the money. So there is no money left for food, clothes or the insurance. Our water whole is still muddy. many things we don't know, how to avoid diseases or how to improve our health.“*

In one villages there was a massive conflict with the VHW. The villagers said, the VHW would not work, throw the medicine away and only take the money. After a discussion with the VHW and the team, it got clear, that there is a massive conflict in the village. The men came home drunk every day only at 5 p.m.. When the VHW should work in the evening and go to the houses, she was scared of the drunken men. As a result the HA went together with this VHW once a week to the houses and a sangham meeting was planned to solve the problem.

The team realises as the example of the VHW with her villages shows the problems, which exist, analyses them and tries to solve them if possible. As a main problem the alcoholism is seen. This problem disturbs massively the health work as well as the whole work of the organisation.

#### **4.2.5 Assessment of the health program (VHW, SC, MC)**

The most agreements to this point can be seen at the **GAH**: nearly all interviewed people said, that the personal and medical care in the GAH is good, that the strength is, that it is the own hospital, where are no fears of medicine and doctors, that the tribal languages are spoken, and that the rules are made by the

Adivasis themselves. Only on critical voice was heard. An existing problem is, that it is expensive to reach the GAH from the far away areas.

*Maniganden from the hospital administration tells: „The hospital was founded, because so many of our people died - during the pregnancy, in childbirth, because of diarrhoea or simple infections. There was no place, where we could go, in the government hospital we were not treated and in the missionary hospital they tried to convert us to Christianity. The private hospitals we could not afford. So we needed our own hospital.*

*Deva and Roopa trained some young people to be nurses. Now our hospital is the best hospital in the taluk. Many non Adivasis come, because it is so good. Now we have our own hospital, where the tribal languages are spoken, where is a warm atmosphere, and the medical treatment is good. Many lives were rescued. And in our own hospital we make our own rules, the non tribals, who come have to follow our rules.“*

There is a lot of pride which is related to the GAH. While the non Adivasis call the hospital „**ACCORD-hospital**“, the Adivasis call it „**Adivasi-hospital**“ or „**our hospital**“. The medical and human care in the GAH is assessed as very well in opposite to the government hospitals.

*Clin. example: One VHW tells about a patient, she recently found in the morning half side paralysed. She went to the next town and phoned the GAH ambulance. The patient had an TIA, came with an BP of 160/100 and stayed for three weeks in the GAH.*

*The examination showed the following pathological results: weakness of the left side, strength 3/5, reflexes, tonus and finemotorik of the left side slightly reduced, sensorik normal, no meningism signs, language normal, brain nerves normal, patient conscious. All pathological results got normal after five days stay in the GAH.*

*The following medical therapy was given:*

- Aspirin 300: 1/2-0-0
- Nifedipin 10: 1-0-0 (for two days)
- Reserpin 0.5: 1-1-1

*The therapy with aspirin and reserpin was continued at home.*

As an difficult point was mentioned cases which go beyond the facilities of the GAH. In cases, patients have to be referred to specialised and far away hospitals, the costs are not covered by the health insurance. So groups or some persons have to be asked for donations.

According to the **SC** and **MC** more disagreements between the different interviewed groups were seen. On the side of the **team the strength of the SC was pointed out, where the people get immediate medical help**, where always is someone and only the critical point was seen, that only four SC work sufficiently. On the side of the **village people it was clear, that they wanted the MC to come back/continue, because the medical help from the MC was felt as better.**

*Krischna, from a village with a VHW tells: „We want the MC to come back! When the MC was here, the sangham worked properly, the doctors came to the village, the treatment was much better, we got medicine. When someone was seriously sick,, the doctors were here. Now we all pay the insurance, in our village all families pay the insurance, but the MC stopped coming. The MC has to come back, the SC is too far for serious sick patients and often nobody is there, when we come. The SC is useful for minor serious diseases, but not for serious sick patients. It is too difficult to reach.“*

Within the team most of the team members think, the SC should overtake the role of the MC.

*Dr. Roopa, a doctor tells: „We introduced the MC, , because, the Adivasis did not go to a doctor or a hospital, when they were seriously sick. They locked the door and waited for recovery or death; they called the spirits and in some villages there were some traditional healers, who treated with herbal medicine. But because the forest is destroyed, the herbs are getting less and less. When we first came into the villages, the people just ran away, because we were strangers and there was no interaction with the outside world. Slowly confidence grew and nowadays the Adivasis come themselves to the SC or GAH. The MC is only used in two areas, one has not yet a SC, the other had lots of problems in the last time. The SC have the advantage, that all the time someone is there, the MC only came each other week to the villages. But there is still the difficulty, that only six SC exist and only four work well.“*

This discrepancy was discussed after the survey with the area teams, the following questions were focused:

- How can the SC work more efficiently?
- How can all eight areas can get HA?
- How can the acceptance of the SC by the village people improve?

The problem to train more HA and to train the existing HA has to be solved within the next time, so that all eight SC work well.

The problem of the acceptance of the SC by the village people is more difficult to solve. It was discussed, that the stop of the MC was decided by the area teams, and that there was too less communication with the sanghams. So it was decided to discuss the stop of the MC again with the sanghams. But the stop of the MC was seen as a right decision: when the people have to come to the SC it was seen as strengthening their self responsibility of their own health and it did not seem to be possible to fund the MC on the long term.

At this point a difference between the subjective health needs of the people and the health program was seen.

#### **4.2.6 Health insurance**

In India there is no general health insurance. the government hospitals and PHCs are free, but are only used by 30% of the population, because they are seen as inefficient and corrupt<sup>33</sup>. As a sign of a lack of effectivity it can be seen that beside the industrial workers and their families the employees of the central

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<sup>33</sup> State of Indias Health, p. 176-177

government in Delhi are the only ones who are insured regularly<sup>34</sup>. The health insurance for the Adivasis has to be understood within this context. A „normal“ private health insurance would not be possible to finance, so that the health insurance covers only the costs of treatment in the GAH. So most costs are covered by this insurance.

The introduction of a health insurance for the covering of the medical costs is a very new development, especially because it works in this case.

The health insurance is assessed as positive by all groups, because it is seen as related to the financing and working of the GAH. Because of the insurance the medicine in the GAH, the SC and the MC are free for them who paid the premium of 10 Rs/year. Also those who did not pay the premium and non sangham members profit from the insurance, because also for them the stay and the examinations are free. All aspects of the health insurance are assessed positive by the team and the majority of the village people.

*Ambeji, from a village without a VHW tells: „In our village only few families have paid the insurance premium. But my family has paid for it. With the insurance the medicine in the GAH is free and that’s our own hospital. We need the health insurance for having our own hospital. In the government hospitals we are not treated well. Last week I was in a PHC, they did not even look at me. The insurance is good.“*

The team focused, that the insurance improves the responsibility of the Adivasis for their own health.

1995 47% of the sangham members had paid the premium, 1996 53%. In seven from eight areas, the percentage of the families who had paid had improved. Within the different areas, the percentage was from 31% - 71%. These official data from the GAH correspond to the subjective assessments of the village people and area teams, how many people paid the insurance.

As a main reason for not paying the premium again the alcohol problem is given. Critical voices from some village people doubt the correct using of the money. Also from the team it was mentioned, that in 1995 an animator cheated with the money, what changed the confidence of the people for the worse. An other critical point of some village people was the question, why they have to pay the premium, while ACCORD gets foreign funds.

*Kumbalati, from a village without a VHW tells: „Our family did not pay the premium. Most families in the village paid the premium. Only my husband has work. I don’t know, what he earns, when he is coming home, there is not much money left, on the way there is a brandy shop. But the insurance is good, when we pay for it, the medicine in the GAH is free and we need the GAH, when we are serious sick. For minor diseases, we go to a missionary hospital, which is close by.“*

While this study was made, there was also a survey done, where 87 families, who did not pay the premium were asked, why they did not pay. In the following time the results were discussed with the area teams and the hospital committee meeting, how the concept of the insurance can be made more understandable. It was decided, to discuss the health insurance with the sanghams of villages, where only very few people paid the insurance.

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<sup>34</sup> Textbook, p. 495-496

Summarised these answers of the different groups can be understood, that the health insurance with the possibility of having free medicine in the GAH, (SC and MC) is corresponding to the subjective health needs of the people and that there is the assessment, that also those who did not pay the premium profit from the insurance (free stay and examinations in the GAH). The number of the people who pay the premium shall improve.

#### **4.2.7 The most common diseases**

According to this point no basic differences within the answers can be seen. The only differences which exist, can be explained by the professionalism and the working field. The village people out of the villages with and without a VHW mention the same diseases.

#### **4.2.8 Reasons for being ill**

As a main reason for diseases all questioned groups see dirty, water, which is contaminated by faeces, because of a lack of toilets in the villages. The germ theory is accepted as reason for diarrhoea and scabies.

*Parcu, a HA tells: „Some people still drink unboiled water, not all villages in the area have a well, many have only waterwholes as their water source. Now with the beginning of monsoon they get muddy and all water is collected there. in the villages there are no toilets, so the water is contaminated by the faeces, because the waterwholes are on the deepest point of the villages. Even when the people go away for their toilet, the waterwholes get contaminated. Many men drink alcohol, they spent all their money, so the families don't have enough to eat. When the children are malnourished, they get sick much easier.“*

Malnutrition, poverty and alcoholism are mentioned as socio-economic reasons for diseases especially by team members.

Beside these „western“ perceptions for being sick, there are the traditional perceptions, which are mentioned especially by village people in villages without a VHW. They are also mentioned by a smaller part of the villages people from villages with a VHW as well from some VHW and animators: diseases just come, are part of human life, do not have a reason, are caused bay a curse or by the spirits of the ancestors. These perceptions do not oppose the germ theory, but the germ theory with the boiling of drinking water and the preventive care. can get integrated in the traditional perceptions. Partly it was possible to integrate the germ theory with the preventive (and curative) concepts in the concepts of the priests, who are asked for help, when the people fall sick.

*Kumbalati fro a village without a VHW tells: „The sprits of the ancestors cause our diseases, when they are angry, or when somebody cursed us. Then we have to calm the spirits. But there are also diseases, which we can avoid. They come, when the water is muddy or the food is dirty. Some diseases are also caused by our fear.“*

It gets clear that the traditional perceptions can get integrated into the „western“ perceptions of the reasons of diseases, and that this integration is wanted by the health of ACCORD. With the inculturation of the traditional perceptions also the visa vers effect is happening: not only the traditional perceptions are integrated into the western perceptions, but also the western

perceptions get integrated into the traditional perceptions. When a priest refers a patient to the GAH, then the two systems work hand in hand. Often this co-operation still does not happen, but a start of it can be seen.

#### **4.2.9 In case of getting ill, where do the people go first?**

Summarised it can be said, that the view, where the people go first, has minor disagreements between the groups and inside the groups, but there is the common agreement, that the people go **to the traditional healers, to the priests and to the hospital** - whether they go to the SC is depending on the area. They who paid the insurance premium go to the GAH, the others go to a government or private hospital.

Because of the destruction of the forest, the traditional healers and the herbal medicine is under threat, but not the priests, who call the spirits of the ancestors and do the puja, which is part of the religion of the Adivasis.

*Bomen, an animator, tells: „Most people go nowadays first to the VHW, the SC or the GAH, whatever is available, they who did not pay the insurance premium go to the government hospital. Then they go to the priest. The priests make a puja and call the spirits of the ancestors, who tell us what to do. Sometimes they also tell us to go to the hospital. In the Gudalur area there is no more forest, so there is no more herbal medicine. The traditional medicine is also working much slower than the western medicine, so most people prefer nowadays the western medicine.*

Obviously only a minority of the Adivasis does not go to the priests, while in the same time the traditional healers lost their influence, because of the dying out of the herbs and the coming of the western medicine. The different institutions of the health system (GAH, SC, VHW) are consulted in case of falling sick. The use of these institutions is better by those, who paid the insurance premium. Here the visa vers effect has to be seen: those, who want to use the health institutions will pay the premium. The given answers make clear, that the traditional systems (traditional healers, priests) shall not get displaced by the new health institutions, but complemented.

The integration of puja and herbal medicine into the health system of ACCORD is wanted in so far, that the life or recovering of the patients is not under threat. So here the difficulty of different values can be seen. Until which point, the integration of the traditional systems is wanted is also a question of the values of the groups. So the loss of some elements (like the birth house) is accepted or wanted, because the life of the mothers was in danger, while the dying out of the herbal medicine is fought or not wanted. Whether the going together of the different medicines will work or not can only be seen in the future.

#### **4.2.10 Changes through the work of the sanghams and ACCORD**

The main changes, which were mentioned, were: many villages got their land back, the increasing of the income, no more bounded labour, the tea program, the health program, the better education of the children, the better knowledge of the rights, a better consciousness of the rights and the ability to fight for them and as a main change, the reduction of the fear of outsiders and the outside world. The least positive changes were mentioned by the village people from villages without a VHW. The reason for that should be similar to the question for changes through

the health system (4.2.3.): If the VHW has the role of a catalytic converter of changes inside the villages, than it is logical, that the people in villages with a VHW see more positive changes through the work of ACCORD and AMS.

The main change, which was mentioned, was the reduction of fears: Until some years ago, the Adivasis were hiding inside the forest, when outsiders came to the villages, they could not interact with the outside world. So they were not conscious about their rights and lived e.g. in bounded labour.

*Kettar, from a village without a VHW, tells: „Some years ago, I would have run away, when you would have come to the village, I would have hiding myself somewhere. Now I learnt to express myself because of the sangham, now I can talk to you, I'm not any more scared.“*

*Amini, a VHW tells: „Some years ago, we did know our rights, our people worked in bounded labour, often they got only something to eat, but no money and we got cheated for our land, they took away our land. The sangham has fought for our land, many villages got their land back. Now we know a lot more about our rights. When someone wants to take away our land, we go to court and file a case. Our people learnt to plant their land, nobody in the sangham villages works any more in bounded labour. The people, who work outside, only work for a salary.“*

The changes, which were mentioned by the different groups correspond to the different working sectors of ACCORD's work. So it can be assumed, that the different working sectors and the resulting changes correspond to the subjective needs of the people. The health sector and the work of the VHW is seen in the subjective view of the people as an integral part of Accord's work. This is very important, because a positive development of health is only possible, when in the same time the socio-economic status of the people is improving (what can be seen clearly on the example of nutrition-malnutrition), what includes the political work to fight poverty. The same can be said visa vers: only than the political fight against poverty can be successful, when the basic needs like health are fulfilled in the same time.

#### **4.2.11 What did not change through the work of the sanghams and ACCORD?**

In the villages without a VHW there were seen more critical points than positive changes. The assessments go until the statements, that there are not many changes for the people at all. This assessment was also heard within the group of people out of the villages with a VHW and even among the VHW, but there it is a clear minority position. Like at the question, what did not change through the health program (4.2.4.) it can be observed, that the people from villages without a VHW see more these points than the objective changes. It can be understood, that the changes on the one hand are caused by the VHW and on the other hand are realised much more through the work of the VHW.

All groups mentioned self critically the weak points of the program: the alcohol. which spoils the sangham work, too less school education, too less land, too less income, bad houses, animators, who had cheated for money and had misused the confidence of the people. Many of these points are mentioned also among positive changes, they are mentioned here too, because, they have to improve more, the changes are not seen as sufficient.

As one of the main problems again the alcoholism especially of the men is mentioned, from which the women are suffering the most, which spoils the sangham work, all the political work and the health. Because of the alcohol problem many sanghams do not meet regularly.

This point was discussed a lot with the area teams after the survey: all groups saw the need that the alcohol problem has to be the next focus of the health work. Within the discussions some ideas came up, like a drama group, who goes from village to village, what was done before to organise the sanghams. But there was also seen the huge dimension of this problem, which cannot be easily fought. Beside some ideas, there stayed the doubt, what can be done.

*Onaki, from a village with a VHW tells: „The alcohol spoils the sangham work. The men drink every day, and are fighting, sometimes they beat the women. Because of the alcohol, the sangham does not meet regularly to discuss the problems. We are still poor and we still do not know enough.“*

#### **4.2.12 Problems of the work and for the villages**

The answers of the different interviewed groups are quite similar, the problems mentioned by the village population are seen as well as problems by the interviewed team members. Also here the alcohol problem especially of the men is seen as the most serious problem. This point has been already discussed (4.2.4., 4.2.11).

As an other main problem, which is partly seen as related to the alcohol problem a lack of unity among the villagers is mentioned. Because of this lack of unity it is much more difficult to solve the other problems (no land, school education, housing, alcohol). The alcohol on the one hand causes this lack of unity, on the other hand is only to solve in a situation of unity. How to interrupt this vicious circle is unclear.

The assessments about existing problems of the villagers and the team are corresponding, what means that the assessment of the own work seems to be realistic. As it was shown at the example of the health program there is also the ability and the intention to analyse the problems and to solve them.

#### **4.2.13 Co-operation inside ACCORD and AMS (health program and the whole organisation)**

The persons of all groups mentioned the meetings and trainings which are important for the specific interviewed group. Beside the official meetings and trainings also the informal co-operation fields are mentioned (e.g. the accompanying of the VHW by the animators).

It can be assumed, that the meetings and trainings are seen as a possibility of co-operation and communication for the team members and sangham members and that they corresponding to the subjective needs of them.

#### **4.2.14 Differences in the co-operation with the villages with and without a VHW**

Here a difference between the groups and inside the interviewed groups can be seen according to the assessment of the co-operation work with the villages with and without a VHW. This difference can be understood, that this question is the

question of this survey and the question, which was discussed within the team before: a part of the team did not feel a difference in the co-operation, a part felt, that in the villages with a VHW, the people know much more about health and are more active in the whole program. To give an answer on this question was the aim of this survey.

### 4.3 The discussion of the results with the area teams

The results of the survey were discussed with the area teams, the hospital committee meeting and the representative meeting.

The focus of the discussion was the following:

There was a difference seen between the villages with and without a VHW. That this difference is caused because of the work of the VHW was clear. The effect of the VHW was and is to improve the health status of the people. So the question was how to spread this effect, which was reached in the villages with a VHW on all sangham villages. Three answers seemed to be possible:

1. More VHW will get trained, so that in every sangham village a VHW will work. ACCORD plans to withdraw from the work within the next years, so the institutions have to get self-reliant. If many more VHW will get trained, this aim is not possible.

2. The existing VHW will work from now on in other villages. This seemed out of two reasons not practicable: The VHW would have to move in another village, and there would be the danger, that the health status in the villages, where the VHW work nowadays could decrease again.

**3. The area teams (animators, teachers, etc.) (and some volunteers) get trained in health and fulfil the healthwork in the villages without a VHW. This solution is seen the most practicable by the area teams and is started. From July 1996 on get four area teams and some volunteers trained in health.**

Another point of discussion was, why there is a vast difference according the knowledge of prevention and therapy of diarrhoea, but no significant difference according the incidence of diarrhoea. The discussion focused around the hygiene of the drinking water, which gets contaminated by faeces, because of a lack of toilets and because waterholes are the only watersource. As well it was discussed, how to make sure, that the people drink only boiled water. So it was clear, that unclean drinking water for many diseases, the discussion, how it improve the quality of the drinking water was intensively.

According nutrition the discussion focused around the point, that even when the mothers know much more about a healthy nutrition for their children the increasing of the prices since the opening of the Indian market, makes it extremely difficult to buy healthy food. This political problem of the increasing of the prices goes together with the alcohol problem especially of the men, who spent often all the money into alcohol. It got clear, that this problem has to be fought from many sides.

It was clear in the discussion that the alcohol problem has to be the next focus of the health work, but on the same time there was a certain helplessness, how to solve this problem effectively. Some ideas were discussed, like a drama group, who goes from village to village, to create awareness about the problem.

According the immunisation of the children it was decided to co-operate more intensively with the government nurses, but to make sure, that they use only sterile needles. So the information about immunisation of children was quite good

on both sides a better co-operation seems to be a possibility to bring this knowledge better into practice also in the villages without a VHW.

According to the MC/SC it was discussed, that the decision to stop the MC was a decision of the area teams and was not discussed enough with the sanghams. Because the coming back of the MC was asked by many village people in the interviews, it was said, to discuss the role of the SC and the stopping of the MC again with the sanghams. But it got very clear, that the MC has to stop and the SC have to take over that role, out of financial reasons and because with the SC, the people take the responsibility for their own health.

The survey as an evaluation of the own work was considered to be useful for analysing the work and for planning the future. The results of the survey had direct results for the work (training of the area teams and volunteers).

#### **4.4 My role as a white West-European**

It is difficult to say, how much my person had an influence on the results. It is sure, that there was a certain influence, which cannot be avoided.

It was decided, that this survey should be done by someone from outside, who is not part of the team, to get as much as possible an outside perspective and objectivity. Also an Indian would have been a stranger in the Adivasi culture. It is sure, that this outside perspective can always be only tried and that an absolute objectivity is for human conditions never possible.

For getting the results it is to say, that the Adivasis normally do not answer in a polite reservation, when they are asked e.g. about the VHW. And critic was said even in front of the criticised person while the survey.

But even then, if it is said, that my role did not influence the results too much, it must be clear, that I as a stranger can never understand fully the life reality of the Adivasis.

These disadvantages are unavoidable in a study like that and can only get tried to minimise as much as possible through discussions and talks, through learning the language and through trying to learn about the culture.

## 5 Summery

This is a retrospective descriptive study with a comparison group. It has a quantitative and a qualitative part. The effectiveness of the VHW inside the NGO ACCORD/AMS on the health status of the people is examined. In the qualitative part a validation of the statistical data is made as well the socio-economic context of the people is explored and the of the VHW's work is seen in relation to the work of the whole organisation.

The **results** were:

In the **quantitative part** it was seen, that in **the factors related to the knowledge** of the mothers of all four examined health indicators (diarrhoea, nutritional status, antenatal coverage and immunisation status), the mothers from the villages with a VHW **knew significant more** than the comparison group without a VHW. There were also **significant differences** according the **immunisation status** of the children and according the **frequency of the antenatal coverage**. **No differences** could be measured according the **incidence of diarrhoea** and the **weight/underweight of children**. This was interpreted in the way, that changes in these points are most difficult because of the multicausality of their genesis.

In the **qualitative part** the interviews were done as **single semistructured interviews** in a **triangulation**. Especially the **health indicators**, which were examined in the quantitative part , were mentioned as **fields of changes** because of the work of the VHW and the health program. These answers can be understood, that the **VHW and their work can be seen as one main source of changes**. In the villages with a VHW she is mentioned by the people as a main information source. Also this shows, that she has to be seen as a catalytic converter of change.

Other **changes through the work of the VHW, the health program and the work of ACCORD/AMS**, which were mentioned, were: **the reduction of fears from outsiders, the decreasing of deaths in childbirth and because of diarrhoea and many points of the programs of ACCORD** (land, education, increasing of the income, Tea program).An especially positive assessment was give to the **GAH**. Also the **health insurance** was seen as mainly positive. The **health program** was seen by all groups as an **integral and important part of the whole work**.

Also the **critical points of the work were mentioned by all groups with a lot of self criticism**. As main critical points were mentioned: **a massive alcohol problem** especially of the men, which influence the whole work and many parts of the daily live. The **changes are not seen as sufficient, but as a start**. It could be seen, that **in the villages without a VHW the people mentioned more critical points and saw less changes**. Also this can be understood, that the **VHW is a catalytic converter of changes for the villages**.

A **discrepancy** between the village population and the team was seen concerning **the focus of the VHW's work and the role of the MC**. **The villages people saw the focus of the VHW's work on the curative medicine, the team saw the focus on the preventive medicine**. **The villagers wanted the MC to**

**continue/restart, the team was clear, that the SC should take over the role of the MC.**

The results were discussed after the survey with all area teams, the following decisions were made:

- There is a positive effect on the health status of the people because of the VHW's work. So the area teams should be trained in health for giving that effect also to the villages without a VHW. Two areas decided also to train volunteers in health. The training of two teams started in July 1996.
- The alcohol problem has to be one of the next focuses of the work.
- The role of the MC and SC will be discussed again with the sanghams
- Concerning the immunisation there should be a more intensive co-operation with the government health workers.
- The hygiene of the drinking water including the questions of toilets has to get improved.

My role as a white West European, as an outsider was discussed before and after the survey. Two points were seen : on the one hand, there is a bit more objectivity, when the survey is done by someone from outside, on the other hand the results can get influenced by an outsider. Also Indians are outsiders to the Adivasi community, the difference was not seen as too big.

While the qualitative interviews, the attitude of the Adivasis was clear, to say critical points also, when the person, who is criticised, is there. This was said by the team and observed while the interviews.

The Adivasis are one of the most marginalised group of the Indian society, who have under general conditions great difficulties to profit from the government programs. They count to the groups, who fall through.

That is the reason, why the Adivasis need special programs, to get an equal chance for their lives. One of this program is the health program. As a part of these programs the effectivity of the VHW's work on the health status of the people within the work of ACCORD was evaluated. In the quantitative and in the qualitative part of the work a positive effect of their work was seen. This effect was assessed as positive, too. Many aims, which should be reached (not only the aims in the health sector) are not reached yet. But the way of the Adivasis to become equal members of the Indian society is started.

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