

395



W. P.: 395

Working Paper

SOCIO-ECONOMIC PROFILE AND PERFORMANCE
OF CHVs IN GUJARAT: IMPLICATIONS FOR
SELECTION AND SUPPORT

By

Anil Bhatt,
Rushikesh Maru
&
A.S. Prabhakar

I.I.M

WP-395

SOCIO-ECONOMIC PROFILE AND PERFORMANCE
OF CHVs IN GUJARAT: IMPLICATIONS FOR
SELECTION AND SUPPORT

By

Anil Bhatt,
Rushikesh Maru
&
A.S. Prabhakar

WP395



WP
1981
(395)

W P No. 395

November 1981

The main objective of the working paper series of the IIM^A is to help faculty members to test out their research findings at the pre-publication stage.

INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD-380015
INDIA

SOCIOECONOMIC PROFILE AND PERFORMANCE OF CHVS IN GUJARAT:

Implications for Selection and Support

by

Anil Bhatt
Rushikesh Maru
A S Prabhakar

November, 1981.
Public Systems Group
Indian Institute of Management, Vastrapur
AHMEDABAD 380015.

SOCIOECONOMIC PROFILE AND PERFORMANCE OF CHVS IN GUJARAT:

Implications for Selection and Support

Abstract

What type of person should be selected as Community Health Volunteer (CHV) has been a matter of debate. This study relates socio-economic characteristics - age, sex, marital status, education, caste, organization membership and landownership - with performance on Direct Patient Care, Mother and Child Health, Family Welfare and Environmental Sanitation. The paper further suggests strategies for selection, training and support in case of CHVs whose performance is poor.

SOCIOECONOMIC PROFILE AND PERFORMANCE OF CHVS IN GUJARAT:

Implications For Selection and Support

Since the inception of the Community Health Workers' Scheme in 1977¹ there has been a considerable discussion on what type of a person a Community Health Volunteer (CHV) should be. This discussion has acquired greater significance because for the first time² in a development programme a member of the community was trained and supported by the government but not within its administrative control. Since considerable importance had been attached to the scheme and as it was to be introduced on a large scale³ its success was considered crucial. The out come of this innovation was being watched closely by the medical profession which has been generally hostile to the scheme and by other development agencies who might want to emulate the scheme for similar community based development programmes. The type of person who is selected as CHV, therefore, becomes an important issue in the working of this scheme.

When the scheme was inaugurated in October 1977, the Government of India issued guidelines which provided that a CHV should be below

-
1. The scheme has since been renamed as the community health volunteer's scheme and will be referred to as a CHV scheme in this paper. Very recently it has again been changed to health guide. However, we shall continue to refer to it as CHV.
 2. Since then a similar pattern has been adopted for the National Adult Education Programme, where the Adult Education instructor like the CHV is a member of the community working part time on an honorarium of rupees fifty a month.
 3. According to the government sources there were 1,60,000 CHVs working in the country in 1981. See, Centre Department of Family Welfare, Government of India, Delhi, Vol.XVI. No.5, May 1981, p.11.

30 years and should have a formal education upto sixth standard. Subsequent communications and revised guidelines have suggested that people from scheduled castes and tribes and women should be encouraged to become CHVs. Also, according to revised guidelines, persons above the age of 30 should be preferred as CHVs. Ideally a person acceptable to the rural community, willing to serve the community and enjoying the confidence of the village people should be selected as the CHV.

However, such characteristics as commitment to social service, acceptability to the community, being in confidence of the community are all highly subjectively determined and difficult to ascertain characteristics. Moreover, when the scheme was to be implemented on a massive scale, accompanied by usual bureaucratic symptoms of delays, inadequate communications from the upper levels of the administration, irregular supply of equipments, such subtler and higher order criteria of selection remain on the paper only. Add to this the unwilling if not hostile medical officers and the usual politiking and nepotism of the more powerful sections of the rural society to get the share of the government spoils. In such a situation no amount of pious proclamations on commitment and honesty as criteria of selection would help achieve better performance.

Perhaps the more realistic and feasible criteria may be relatively easily ascertainable objective credentials of socio-economic characteristics such as age, sex, occupation, caste, education etc. if these have any bearing on the performance and effectiveness of the scheme.

Many studies of the CHV scheme have analysed socio-economic background of the CHVs (Ref.2 - 8, 13, 15). Some of these studies discuss the relevance of age, sex, caste, education, and occupation for the selection of CHV, (specially see Ref.2, 13, 15). Similarly, a few studies have also analysed performance of CHVs (specially Ref. 2,8,11, 13,15). However, none of these previous researchers have systematically attempted to relate performance indicators to socio-economic characteristics of CHVs. The 1979 national evaluation of the CHV scheme did make a beginning in this direction by relating average number of cases visited by CHVs in the past fortnight with their socio-economic background (Ref.13). However, it was limited to only three background indicators of sex, caste and occupation. Also, the single indicator of performance did not distinguish between various activities such as direct patient care, family planning, MCH, and environmental sanitation.

To what extent does the socio-economic background determine the performance of the CHV? Are there any particular services which are performed better by certain type of CHVs? It is to these questions that we address ourselves in this study. If there are any socio-economic determinants of performance then it would help to identify these for selection. Moreover, one can also decide about the interventions that the scheme would need in case of poor performance by certain types of CHVs. Based on the analysis of Gujarat situation the paper attempts to discuss the strategies for selection and support for better performance of the CHV scheme.

The Study:

The study is based on data for one state - Gujarat - collected as a part of larger national evaluation of the CHV scheme⁴. The data was collected during the summer of 1979.

The sample consisted of 6 CHVs for each sample PHC, half of whom were selected randomly while the remaining half were from the previous evaluation done in 1978⁵. Ten PHCs were included in the sample based on stratified random method. Two of the 60 selected CHVs could not be interviewed. Thus the total sample consisted of 58 CHVs from 10 PHCs in 10 districts of Gujarat State⁶. Study of CHV scheme from Gujarat state becomes more important because there has been an enthusiastic acceptance of the scheme on the part of Gujarat Government as it had provided added support to the scheme and by all accounts, the working of the scheme has been relatively much better as compared to other states.

Measures of Performance and Socio-economic Characteristics:

Measures of performance included in this study and the socio-economic profile of the CHV in the state are shown in tables 1 and 2 respectively. The measures of performance are clustered into four

-
4. See for details of the sample and other description of the study Report Evaluation of the Community Health Volunteers' Scheme - 1979, Parts - I & II, New Delhi: National Institute of Health and Family Welfare, 1979.
 5. See Evaluation of the Community Health Workers' Scheme, Technical Report - 4, New Delhi: National Institute of Health & Family welfare.
 6. The IIMA was associated with both the National Evaluations. Anil Bhatt and RM Maru were associated with second national evaluation from which the data for this paper are taken. Bharat Upadhyay helped in data collection and field supervision.

parts/types of activities based on nature of services rendered. These are: (i) direct patient care (DPC) which includes such activities as minor ailments treated, blood slides collected etc. (ii) maternal and child health (MCH) that consists of number of children referred for vaccination, malnutrition, number of mothers referred for pre-natal care, post-natal care etc. (iii) family welfare (Fw) and (iv) environmental sanitation (ES).

Table - 1

Indicators of Performance

1. Direct Patient Care (DPC)

- No. of blood slides prepared
- No. of cases given treatment
- No. of minor ailments treated

2. Maternal and Child Health (MCH)

- No. of children referred and got vaccinated
- No. of children referred for malnutrition
- No. of children referred for Vit.A solution
- No. of cases referred for pre-natal care
- No. of cases referred for post-natal care
- No. of cases referred for natal care.

3. Family Welfare (Fw)

- Cases referred for IUD
- Cases referred for sterilization
- Cases referred for MTP
- Cases referred for FP advice

4. Environmental Sanitation (ES)

- Average number of chlorinations per well
- No. of soakage pits constructed
- No. of compost pits constructed
- No. of sanitary latrines constructed.

The index for each service consists of simple additive scale of different activities for each type.

The performance under each type was ordered into poor, average and good. The scores in four types were converted into standard normal varieties using the mean and standard deviation of a set of scores. The CHVs whose performance score thus calculated was less than or equal to -1 were classified as "poor", between -1 and +1 as "average" and more than or equal to +1 as "good".

The distribution of Gujarat CHVs in various socio-economic categories is provided in Table 2. The all India profile is also provided for ready comparison. We find that a high percentage of CHVs in Gujarat are younger, males (though here it may be noted that Gujarat has nearly one fourth of the CHVs who are female as compared to only six percent for all states combined), married, having more than primary education and belonging to non-SC/ST castes. While more than ninety percent of CHVs in Gujarat are without any medical background the proportion of CHVs with medical background is nine per cent which is much higher than the all India proportion of less than two per cent with medical background. It is also striking that more than one-third of CHVs in Gujarat are members of some public organisation and therefore having some exposure to cooperative, organised activity beyond one's primary group. It is also noteworthy that nearly 45 per cent of the CHVs in Gujarat do not own any land.

Table 2

Socio-Economic Profile of Gujarat CHVs

S.No.	Socio-economic character	Gujarat State percentages (N = 58)	All States combines*
1.	Average Age (Years)	27.6	26.3
	Less than 30	75.9	65.9
2.	Proportion of female CHVs	24.1	6.3
3.	Marital Status		
	Married	82.8	73.8
	Unmarried/Widowed	17.2	26.2
4.	Educational Status		
	Primary	37.9	29.4
	More than primary	62.1	70.6
5.	Vocation		
	Non-medical background	91.4	98.2
	Medical background	8.6	1.8
6.	Membership in organization		
	Member	34.5	N A
	Non-member	65.5	N A
7.	Caste		
	Non-SC/ST	79.3	78.8
	SC/ST	20.6	21.2
8.	Landownership		
	Owner	55.2	N A
	Non-owner	44.8	N A

* Source: 'An Evaluation of Community Health Worker Scheme, Technical Report - 4', NIHFw, New Delhi 1978, Appendix V(a)-V(e).

Age and Performance:

Considerable importance has been attached to the age, of the CHV. As we mentioned above within three years of launching the scheme government has changed its guidelines on this issue twice. Initially younger CHVs were preferred by government. In the revised guidelines it has been suggested that CHVs above thirty should be preferred. Many doctors with whom we have talked to in different states have also repeatedly mentioned that CHVs should be middle aged or "matured" in age. To quote a district level medical officer from Rajasthan, "in this type of a scheme some mature middle aged persons should be selected instead of the young boys in their 20s".

Table 3Age and Performance (Percentage)

Type of care	Aged below 30 N=38 (65.5%)			Aged above 30 N=20 (34.5%)		
	Poor	Average	Good	Poor	Average	Good
DPC	21.0	50.0	29.0	20.0	50.0	30.0
MCH	13.2	78.9	7.9	25.0	70.0	5.0
F W	28.9	44.7	26.4	50.0	25.0	25.0
E S	21.1	65.8	13.2	25.0	50.0	25.0
Overall	21.1	59.8	19.1	30.0	48.8	21.2

The evidence from Gujarat presented in table 3, however, shows that age is not a major determinant of performance. It is not necessary that only middle aged CHVs would do better. In fact in both MCH and Fw activities the younger generation has been performing relatively better than the CHVs above thirty. As the table indicates in MCH activity about 8 percent of below 30 CHVs are doing "Good" as compared to 5 percent of the above 30 CHVs. In case of Environmental Sanitation (ES), one fourth of the older CHVs performance is rated as good as against only 13 per cent of the younger CHVs. But in case of direct patient care (DPC) there is no noteworthy difference between young and older CHVs performance. On the whole, therefore, there is not much significant difference in performance between younger and middle aged CHVs.

Sex and Performance

There has been again a considerable concern shown over female CHVs' performance. The latest revised guidelines, strongly recommended that as far as possible females should be selected as CHVs.

Data (Table 4) shows that female CHVs performance is slightly better in case of MCH and Fw activities. Though in Fw more female CHVs have poor performance than male CHVs but in the category "Good" female proportion is nearly 29 percent as against 25 per cent males. In case of direct patient care male CHVs are doing better than females. In case of environmental sanitation 29 percent of the female CHVs performance is rated as good as against about 14 per cent of male CHVs. Overall there is not much significant difference but one may say that if CHV

Table 4

Sexwise distribution of CHVs according to levels of performance in different types of care (Percentage)

Type of care	Male N=33 (75.9%)			Female N=14 (24.1%)		
	Poor	Average	Good	Poor	Average	Good
Direct Patient Care	18.2	50.0	31.8	28.6	50.0	21.4
Maternity & Child Health	18.2	75.0	6.8	14.3	78.6	7.1
Family welfare	34.1	40.9	25.0	42.8	28.6	28.6
Environmental Sanitation	20.5	65.9	13.6	28.6	42.8	28.6
Overall Performance	22.8	56.8	20.5	28.6	50.0	21.4

scheme is to emphasise MCH, and ES more than curative service than female CHVs would do equally well or slightly better than male CHVs. The 1979 national evaluation of CHV scheme also found that sex is not a significant determinant of performance (Ref.5, p.142).

Marital Status and Performance

Table 5 shows that unmarried CHVs do better in DPC and MCH as compared to married CHVs. In case of Family Welfare activities fifty per cent of unmarried CHVs performance is rated as "good" as compared to about 21 percent married CHVs. However, nearly 40 percent of unmarried CHVs are found to be in poor category as compared 35 percent married CHVs. In case of environmental sanitation however, the married CHVs perform significantly better than unmarried CHVs. Overall,

Table 5

Marital Status and Performance (%)

Type of care	Married N=48 (82.8%)			Unmarried N=10 (17.2%)		
	Poor	Average	Good	Poor	Average	Good
Direct Patient	22.9	47.9	29.2	10.0	60.0	30.0
Maternity & Child Health	18.8	75.0	6.2	10.0	80.0	10.0
Family welfare	35.4	43.8	20.8	40.0	10.0	50.0
Environmental Sanitation	16.7	64.5	18.8	50.0	40.0	10.0
Overall Performance	25.0	56.2	18.7	20.0	50.0	30.0

80 percent of unmarried CHVs perform average to good as compared to about 75 percent of married CHVs.

Educational Status

Another aspect of CHV selection which has generated considerable discussion is the educational background of CHVs. It has been generally believed that the CHVs should have some education to be able to work effectively. The government in its guide lines has suggested that all CHVs should have primary education, at least upto VI grade. One of the major complaints of the medicos is that CHVs are ill educated and therefore, can not perform their functions well. Many doctors from Uttar Pradesh, Rajasthan and Gujarat that we have talked to have insistently mentioned this point. Quite a few doctors have expressed the view that CHVs should atleast be matriculare. It is widely felt that only people

Table 6
Education and Performance

Type of care/ service	Primary N=22 (37.9%)			Middle & Above N=36 62.1%		
	Poor	Average	Good	Poor	Average	Good
Direct Patient	27.3	50.0	22.7	16.7	50.0	33.3
Maternity & Child Health	27.3	68.2	4.5	11.1	80.6	8.3
Family Welfare	45.4	27.3	27.3	30.6	44.4	25.0
Environmental Sanitation	22.7	63.3	13.7	22.3	58.3	19.4
Overall Performance	31.8	54.5	13.6	19.4	55.6	25.0

with some education will be able to understand and usefully participate in the training. Even elementary medical work, it is argued, can only be performed by educated persons.

Data presented in Table 6 do show that those CHVs who had education upto middle school and above have performed consistently better in all activities and especially and expectedly the direct patient care. In case of MCH more than one fourth of the CHVs with primary education have performed poorly as compared to one tenth of CHVs with middle school and above education. If one compares the good performance category in case of MCH than nearly double the CHVs with education upto middle schools or above are to be found in good performance category as compared to CHVs having education upto primary level.

Education, however is in a sense an enabling variable. One would expect that other things being equal an educated person is more exposed to outer world, to new and different things and therefore, his ability to acquire knowledge, assimilate and use training would be higher thus improving his chances of better the performance. But if these conditions can be met with more intensive training and follow up then CHVs with low education or even no education (as in case of Jamkhed ^{Ref.1)} may perform better.

Organisational membership and performance

Data about organisational membership and performance are given in table 7. It clearly shows that those CHVs who are members of organisation other than their primary groups have performed consistently better in all activities than those CHVs who are not members of any organisation.

Table 7

Organizational Membership and Performance (%)

Type of care/ Service	Without membership in any organisation N = 38 (65.5%)			Membership in organisa- tion N = 20 (34.5%)		
	Poor	Average	Good	Poor	Average	Good
Direct Patient	23.7	47.8	28.9	15.0	55.0	30.0
Maternity and Child Health	21.1	73.7	5.2	10.0	80.0	10.0
Family welfare	42.1	34.2	23.7	25.0	45.0	30.0
Environmental Sanitation	31.6	55.3	13.1	5.0	70.0	25.0
Overall Performance	28.9	55.3	15.8	15.0	55.0	30.0

Like education membership in organisation is also indicative of a more outgoing, broader, more exposed personality. It is also likely to indicate a greater power, status and extension or service motivation. People with these motivations are likely to be more confident, more inter-
actional, more active and more involved. Because as members of organisations they are exposed to activities other than their primary group activities, they interact with different people, learn to work in groups and in cooperative fashion. As active persons it ^{is} very likely that they may have easier accessibility to government personnel. These qualities are obviously more conducive to doing the type of work that a CHV is expected to do.

Landownership and Performance

The national study from which this data about Gujarat is carved out did not include any questions on economic status or landownership. The Gujarat part of the national study was redesigned and carried out by two of the authors of this paper. We included among other things questions on landownership. Landownership in rural India is a reasonably good indicator of economic and even social status.

Table 8

Landownership and Performance

Type of care	<u>without land N=26 (44.8%)</u>			<u>with land N=32 (55.2%)</u>		
	Poor	Average	Good	Poor	Average	Good
Direct Patient Care	26.9	57.7	15.4	14.6	43.8	40.5
Maternity and Child Health	15.4	80.8	3.8	18.8	71.8	9.4
Family Welfare	42.3	38.5	19.2	31.3	37.4	31.3
Environmental Sanitation	30.8	57.7	11.5	15.6	62.5	21.9
Overall Performance	28.9	58.7	12.4	20.3	53.9	25.8

In all types of services those CHVs who owned some land have done consistently better (Table 8) as compared to those who do not own land. Over all double the number of CHVs with land (25.8%) are to be found in "good" performance category as compared to CHVs who do not own any land (12.4%)⁷.

Caste and Performance

Finally in table 9 we present relationship between caste and performance. Except in case of MCH activities the performance of CHVs belonging to higher caste is considerably better than CHVs belonging to scheduled castes and tribes.⁸ In case of direct patient care the performance of the upper castes is decidedly better. The table shows that only 13 percent of the non-SC/ST CHVs perform poorly as compared to half of the SC/ST CHVs. In family welfare also not single SC/ST shows up in the category good as compared to more than 32 percent of CHVs with upper caste status. In case of MCH activity the performance of the SC/ST CHVs is slightly better but it is very negligible-by about 1 per cent in all the three performance categories - to be able to arrive at any definite conclusion.

-
7. The 1979 National Study found that landless CHVs were on an average visited by more number of community members (Ref.5, p.142). However, we should note that the 1979 study is limited to only one summary indicator of performance, namely no. of people who contacted CHV.
 8. Here also the National Study (Ref.5, p.142) found no significant difference between higher castes and SC/ST. in terms of no. of people visiting them during the past fortnight. However, the same reservation as mentioned in FN.7 applies here too.

Table 9Caste and Performance (Percentage)

Type of care	SC/ST N=12 (20.6%)			Non SC/ST N=46n(79.3%)		
	Poor	Average	Good	Poor	Average	Good
Direct Patient Care	50.0	41.7	8.3	13.0	52.2	34.8
Maternity and Child Health	16.7	75.0	8.3	17.4	76.1	6.5
Family Welfare	58.3	41.7	0.0	30.4	37.0	32.6
Environmental Sanitation	33.3	58.4	8.4	18.8	52.5	18.8
Overall Performance	50.0	41.7	8.3	17.4	58.7	23.9

This is perhaps to be expected. Given the social position of these low-caste groups their ability to interact with others and their acceptance by upper sections of the society is very limited. Their confidence level is also likely to be low. In such a situation it is not possible to expect better performance from the traditionally deprived groups to do better than upper caste groups unless they are more carefully trained and generally more strongly supported by the health administration

Conclusion: Strategies for Selection and Support

Looking at different socio-economic dimensions of CHVs performance one can see that a better performing CHV is generally educated

upto atleast middle school, a landowner, member of the upper caste and a member of some organisation. He may be married or unmarried, young or middle aged, male or female. It can be legitimately argued that performance of the CHV should not be measured only in terms of quantity of services rendered. we must also look at the type of clients they are serving. (Specially see Ref.2, 3, 7, 9, 13). Since one of the major objectives of such community based intervention is to reach under-privileged strata of rural population, would it not be logical to recruit CHVs from lower socio-economic strata, even if they are not performing as well as CHVs from higher socio-economic strata? We have elsewhere analysed the characteristics of clients served by CHVs from various socio-economic strata and found that on an average CHVs served all sections of society without considerations of caste and class (Ref.7). Our analysis of other data from Gujarat (not reported here) also support this conclusion.

Even if CHVs do not discriminate between various strata of society in providing services, it would be important to recruit CHVs from lower socio-economic strata purely on the ground of providing them equal share in the new opportunities opened by the scheme.

If selection has to be made on the ground that a particular village needs a particular kind of activity more than the other than more differential selection on the basis of socio-economic characteristics will have to be done. For instance, if one wants to emphasize family Welfare activity more in a particular village as compared to direct patient care than one may prefer a younger person who is female and a member

of the organisation. An Activity wise selection strategy is suggested in the table 10. It is only a suggestive table.

Table 10

Activitywise Selection Strategy

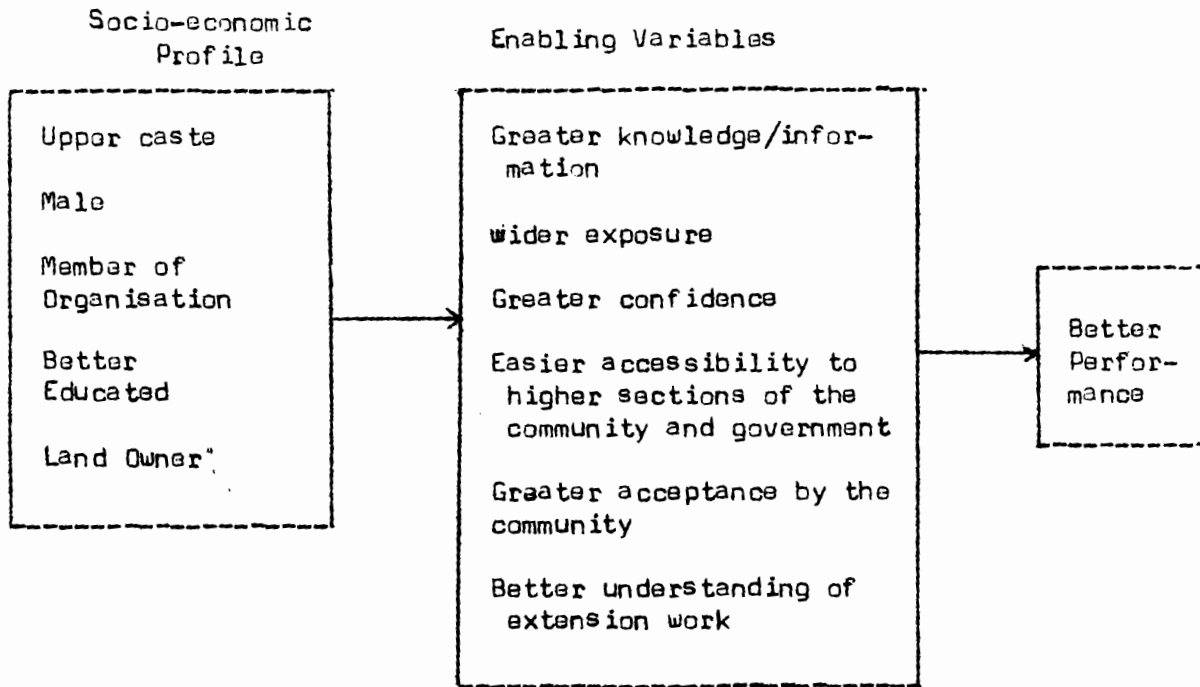
Socio-economic characteristics	Better Performance			
	D P C	M C H	F W	E S
Age	*	Young	Young	Middle aged
Sex	Male	Female	*	Female
Marital Status	*	Single	*	Married
Education	Middle school	Middle school	*	Middle school
Membership in the organization	Member	Member	Member	Member
Landownership	Owner	*	Owner	Owner
Caste	Non-SC/ST	*	Non-Sc/ST	Non-SC/ST

* denotes uncertain or no relationship between particular socio-economic characteristic and performance in particular activity.

It is to be noted however that socio-economic characteristics are not directly related to performance. The factors that affect the performance directly and more decisively are broader exposure, easier access to wider sections of community and different levels of government, confidence, commitment, social service motivation. The model of relationship between socio-economic profile and performance is as follows:

Figure 1

Model of relationship between Socio-economic Profile and Performance of CHVs



Our other data (not reported here) show that those who perceived their roles as CHVs more broadly and comprehensively show much better performance. It is simply that members coming from more dominant sections of the society have more opportunity to get wider exposure and therefore, are better placed to have better understanding of such roles.

This, however, does not mean that members of lower socio-economic strata can not perform better. Experience of several voluntary agencies has simply shown that when they have worked with CHV type function-

aries in their health work with patience, greater care, careful training, continuous guidance and help and stronger support than even illiterate, landless, scheduled caste female village health workers have performed exceedingly well.

Drs

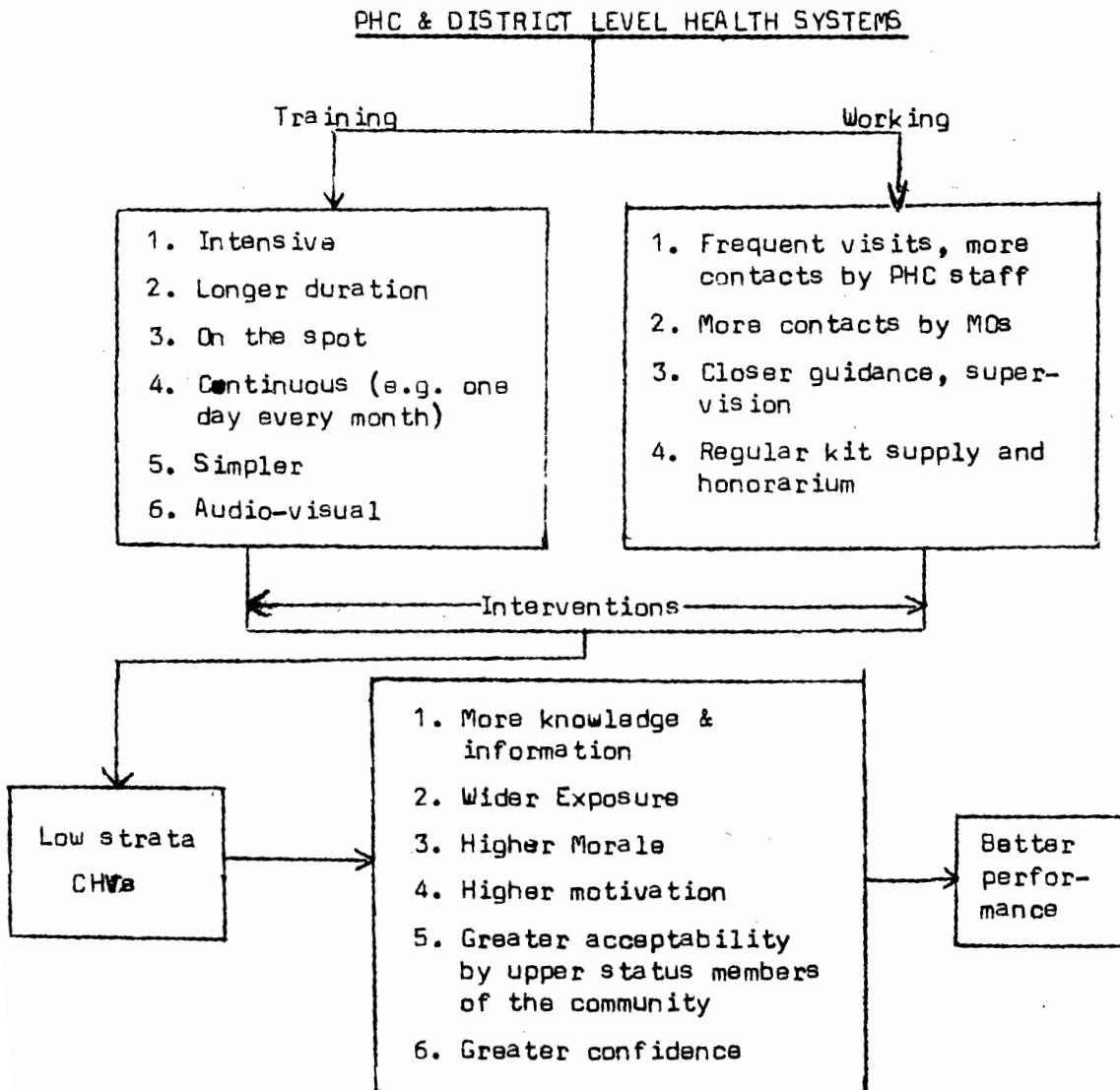
Arole in Jamkhed block of Maharashtra (Ref.1) have clearly demonstrated that illiterate, scheduled caste women have performed exceedingly well as CHVs and have performed more complicated functions including the "tonometry tests" for detecting glaucoma. This however required innovative techniques of training in an intensive and patient way, a committed and strong follow up and support. It is, however, far more difficult to achieve in case of government run primary health centres where training is to be done en masse, within a fixed time period, with inadequate and irregular equipment supply and above all a general lack of interest, on the part of the PHC and its higher levels of health administration.

The difference between our findings and experiences of small voluntary community health care experiments highlights the classic problem of transition from pilot projects to nation-wide extension of a successful social innovation. As the scale of operation increases, the ability of the organization to provide intensive, continuing and personalized training and support also decreases. A certain degree of routinization and standardization becomes inevitable. Thus, both training and support systems are unable to differentiate between trainees with differential social background. One way to minimize this characteristic of large and complex systems is to develop separate training and support interventions

for CHVs from low socio-economic strata. Along with this, flexibility can be built into the system through decentralization of training design function and thereby encouraging regional variations. The strategy will then have to be stronger support at training and actual operation level to improve the performance of low socio economic status CHVs as shown in Figure 2 with which we conclude.

Figure - 2

Training and Support for Better Performance
of Low Socio-economic Strata CHVs.



REFERENCES

1. Aroles, Mabelle & Rajnikant, "A Comprehensive Rural Health Project in Jamkhed" in K.W. Newall ed., Health by the people, Geneva, WHO, 1975.
2. Bosa, Ashish, Goyal R.P., S.R. Grover et al. "An Assessment of the New Rural Health Scheme and Suggestions for Improvement", memo. Delhi, Demographic Research Centre, Institute of Economics Growth, May, 1978. p.61.
3. Chandra R., Saxena S.C. et.al. "Utilization of Services of Community Health workers by the Rural Population", Indian Journal of Medical Research, 71, June 1980, pp.975-984.
4. Ghosal, B.C., Mittal. B.N., et.al. "Community Health Workers Scheme - A Study", Rural Health Training Centre, Najafgarh, memo. p.46.
5. Kumar, Ashok and Bhattacharya, D.N., "Rural Health Scheme: A Study of CHVs in IPP Districts", POPCEN News Letter (India Population Project, U.P.), Vol.3, No.12, Feb.1978, 6-14.p.
6. Maru, Rushikesh, "Organizing for Rural Health", in David C Korton and Felipe B. Alfonso (eds), Bureaucracy and the Poor: Closing the Gap. Singapore. McGraw Hill International Book Company, 1980., pp.35-43.
7. _____ "Community Health Volunteer Scheme in India - An Evaluation", paper presented at an International Conference on Anthropology and Primary Health Care held at Amsterdam, 23-26 April, 1981.
8. Murthy, Nirmala. "Linkage Model: A New Framework for Monitoring Primary Health Care", Unpublished paper. Ahmedabad. Indian Institute of Management, May 1980, 19 pages.
9. Nitcher, Mark, "Community Health worker Scheme", Economic and Political Weekly, January 5, 1980, 37-42.
10. Ravi. R., et.al. "Assessment of Quality of work of Community Health Volunteers", Indian Journal of Preventive and Social Medicine" (IJPSM), V.12, No.1, March 1981. pp.36-39.
11. _____ et.al. "Reaction of the Community Towards their Community Health Volunteers and the CHV Scheme in Chiraryon Block, Varanasi", IJPSM, Vol.12, No.1, March 1981, pp.60-66.

12. Report Evaluation of Community Health Volunteers Scheme - 1979, A Collaboration Study Part I - Survey Report; New Delhi. NIHFw, 1979, 220 p. + Appendices 1 to 27 (2) Evaluation of the CHV Scheme, Technical Report - 4, New Delhi. NIHFw, 1978.
13. Sudarshan, M.K. and Gupta, V.M., "Acceptability of Community Health Volunteers' Scheme - Varanasi Experience", IJPSM, V.12, No.1, March 1981, pp.36-39.
14. Swain, Saraswati, "Perception of Community Health Volunteers", in National Conference on Evaluation of Primary Health Care Programmes, (ICMR, New Delhi, 1980), pp.149-158.
15. Vohra, H.R., Ramaiah, T.J. et.al. "Dynamics of Selection of Community Health Workers", New Delhi, National Institute of Health & Family Welfare, June, 1978, p.91.

- - - -