

Evaluation of National Rural Health Mission (NRHM): Findings from Community Survey conducted in Pathanamthitta District of Kerala during 2007-2012.

Krishnakumari. K,

Associate Professor, Dept. of Statistics, SAS SNDP Yogam College, Konni, Pathanamthitta, Kerala, India

ABSTRACT: National Rural Health Mission (NRHM) is a Government of India program for improving health care in rural India. The mission initially mooted for 7 Years (2005-2012) and is run by the ministry of Health. The scheme proposes a number of new mechanisms for health care delivery system. It also aims at improving hygiene, sanitation and infrastructure. The overall aim of the program is to strengthen and improve the whole public health delivery and health of the rural sector. For that various initiatives of NRHM were exercised. The present study provides an insight on the effectiveness of various activities of NRHM to the community.

KEYWORDS: Arogyakeralam, Initiatives of NRHM and its evaluation. Rural Health, National Rural Health Mission.

I. INTRODUCTION

Health is the level of functional or metabolic efficiency of a living being. In humans, it is the general condition of a person's mind and body, usually meaning to be free from illness, injury or pain. The World Health Organization (WHO) defined health in its broader sense in 1946 as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". Health care in India features a universal health care system run by the constituent states and territories of India. The constitution charges every state with "raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties". The national Health Policy was endorsed by the Parliament of India in 1983 and updated in 2002.

Parallel to public health sector, and indeed more popular than it, is the private medical sector in India. Both urban and rural Indian household tend to use private medical sector more frequently than public sector, as reflected in earlier surveys.

Rural India contains over 68% of India's total population with half of it living below poverty line, struggling for better and easy access to health care and services. Postpartum maternal morbidity is a serious problem in resource-poor settings and contributed to maternal mortality, particularly in rural India. In [3], it is found that 43.9 % of mothers reported to have experienced postpartum morbidities six weeks after delivery.

NATIONAL RURAL HEALTH MISSION

National Rural Health Mission (NRHM) is not a first program on rural health in independent India, even then, the enthusiasm and attention of the health personnel and people towards the program is phenomenal. This may partially be attributed to the apparent commitment and sincerity of the government, which was rightly reflected in the confessional speech of the Prime Minister of India on April 12, 2005 in the launch of this program. This program is implemented throughout the country with special focus on 18 states, including eight Empowered Action Group States, the North Eastern states, Jammu & Kashmir and Himachal Pradesh.

The goal of the Mission is to improve the availability of and to access to quality healthcare by people, especially for those residing in rural areas, the poor, woman and children. The key features in order to achieve the goals of the Mission include making the public health delivery system fully functional and accountable to the community involvement, decentralization, rigorous monitoring and evaluation against standards, convergence of health and related programs from village level upwards, innovation and flexible financing and also interventions for improving the health indicators.

The Gods own country Kerala has highest literacy rate and stood up the top among other states. Kerala has better demographic and health indicators than most states in India. In Kerala as people have higher health seeking



behavior, its utilization of health services is comparatively high, which can be linked to its low mortality rates. A World Bank study in 2001 on the Indian Health system shows that, although Kerala has the highest per capita public health expenditure compared to other states, the people have to face the double threats of re-emerging communicable diseases and emergence of risk factors that predispose persons to chronic diseases. High levels of morbidity and high out of pocket payments for treatment are also a load on the economic well-being of the people of the State.

Since changing lifestyles, unhealthy eating habits, use of tobacco and alcohol, lack of exercise are likely to increase the incidence of chronic diseases in future the state needs to build in measures to manage these into the primary health care system.

Pathanamthitta is the youngest district of Kerala. Most of the pilgrim centres of Kerala are located here. Sabarimala, one of the pilgrim locations in the country is situated here and a large number of devotees (almost equal to the total population of Kerala) visiting every year during the pilgrimage season. There for various health issues are bound to happen. Also there are 13 Tribal settlement colonies and several SC colonies including the biggest SC colony in Kerala (Ezhikkadu colony). Hence a special attention must be given to the healthcare of inhabitants of Pathanamthitta. DEMOGRAPHIC FEATURERS (As per 2011 census)

Total Population	11,95,537
Men	5,61,620
Women	6,33,917
Children	91,501
Old age	147789
Literacy rate-Male	97.70
Literacy rate -Female	96.26
No. of house holds	297134
Household size	4.15
Sex ratio	1129
Age distribution (under 6 years)	91,501
Age distribution (above 60 years)	147789
Child sex ratio	964
Decadal growth rate (2001 Census)	+3.84
Decadal growth rate (2011 census)	-3.12

There are 396 Health institutions under state government in Pathanamthitta including 2 general hospitals 1 district hospital, three thaluk hospitals and 1 palliative care training centre.

Various initiatives under NRHM include infrastructure development, human resource, HMIS-health management information system, ASHA (accredited social health activist), school health program and immunization, ward health nutrition day and ward health sanitation committee, AYUSH and NCD clinics.

AROGYA KERALAM

In Kerala the Mission is functioning under the brand name ‘Arogyakeralam’, with support from the State Government. The project has a State Mission Director and 14 District Program Managers. Their offices are monitoring the functioning of the system and crores of rupees were spend for improving public health.

II. REVIEW OF RELATED WORKS

The following are some works related to this study. An evaluation of NRHM by the planning commission was done in [5]. An important objective of this study was to assess the availability, adequacy, and utilization of health services in the rural areas, the role played by ASHA, AYUSH in creating awareness of health, nutrition, sanitation and hygiene among the rural population and to identify the constraints and catalyst in the implementation of NRHM.

The study results showed that NRHM initiatives have increased basic health care delivery at all levels viz. three-tier health system, in the Indian context. It also shows that AYUSH is not in the mainstream while ASHA workers perform very well. Also functioning of VHSC has increased.

Another evaluation is done in [2]. In this paper much of the focus is given to ASHA, Role of Panchayath Raj Institution in managing local health facilities. The study shows that ASHA workers perform very well. It is also pointed out that if corrective measures were taken by state government in the management of health some far reaching results will be obtained in next 4-5 years.

In May 2009, Planning Commission of India published a Working paper 1/2009-PEO by Kaveri Gill [1]. This paper



seeks to evaluate quantity and quality of service delivery in rural public health facilities under NRHM. The result is that the factors that need to evaluate gives better performance under NRHM.

Ministry of Health and Family Welfare, Government of India conducts “Concurrent Evaluation of NRHM (2009) in Kerala”[3]. The study conducted at four districts viz. Alappuzha, Kollam, Idukkiand Malappuram.

The District Level Household Surveys [4] (DLHS-1,2 and 3)was conducted in Pathanamthitta with a view to assess the utilization of services provided by government healthcare facilities and people’s perception about the quality of services. In addition, DLHS-3provides information on important interventions of National Rural Health Mission.

But no study was conducted at Pathanamthitta where the researcher decided to perform the evaluation of NRHM; this will provide some valuable evidence about the success/failure of the system.

III. OBJECTIVES

- To assess quantity and quality of primary health care.
- To study the effect of NRHM program in health indicators.

IV. MATERIALS AND METHODS

The study was conducted at Pathanamthitta district of Kerala state. The study population consists of all the inhabitants of Pathanamthitta district and the study sample was drawn based on cluster sampling technique. To meet the objectives of the study three types of pretested questionnaires were used viz. Community survey form, Institutional survey form and LSGI member survey form. For the collection of data from community the population was divided into 57clusters one each from 54 Gamma Panchayath and 3 Municipalities. For the community survey a sample size of 12 for each cluster in Panchayath and 25 for Municipality was identified. Primary data were collected through personal interview. As a whole 743 samples were selected. Information for the study was collected from SC and PHC’s/CHCs separately. A sample of 48 Sub centre and 18 Primary Health Centre /Community Health Centre was selected and information regarding Human resources provided by NRHM, changes in the infrastructure and facilities, utilization of funds are collected.

LSGI members are more aware of pulse of community. A sample consisting of 100 members were selected and information was collected through personnel interview. Their opinion about various items such as functioning of government hospitals, services of Health and ASHA workers, School Health Program, Ward sanitation and nutrition day, Pain and Palliative care etc. were collected.

Appropriate statistical tests such as *Chi*-square test, Fisher’s exact test, Mann –Whitney U test and *t*-test were used as applicable.

V. RESULTS AND DISCUSSION

In order to meet the objectives of the present study, information about the activities of NRHM was collected from beneficiaries in the community, institutions under health department and LSGI members. Based on the information available, the activities of NRHM were evaluated. Population under study consists of all the inhabitants of Pathanamthitta district. The current sex ratio as per 2011 census is 1129. The selected sample also gives a similar sex ratio. Out of the 723 sample selected, 41.9 % were males and 58.1% were females.

Table1. Distribution of the sample according to “affected by any kind of diseases” during the last six months

Affected by diseases during the last six months	Count	Percent
Yes	541	72.8
No	202	27.2

The disease burden of the district was assessed and the study showed 72.8 % of the sample had at least one episode of disease during a period of six months. However majority did not require inpatient care.



Table2. Distribution of the sample showing the type of Institution people ordinarily use

Type of institution	Count	Per cent
Government Hospital	314	58.0
Private Hospital	178	32.9
Treatment by self	13	2.4
Govt. & Private Hospital	36	6.7

The survey results revealed that 58% of people approach Government Hospitals when they are affected by any kind of diseases. One third of the people went to Private hospitals. There is several multispecialty and super specialty hospitals in the district now. Even in the presence of such private hospitals, majority of people approach government hospitals to the tune of 58%. This may be due to the improvement of infrastructure, equipment, improved human resource and adequacy of drugs provided through NRHM.

Table3. Comparison of the place where people wish to go when they are diseased based on locale

Type of institution	Rural		Urban	
	Count	%	Count	%
Government Hospital	275	57.7	39	60.9
Private Hospital	156	32.7	22	34.4
Treatment by self	11	2.3	2	3.1
Govt. & Pvt. Hospital	35	7.3	1	1.6

Chi square=3.14, p=0.371

An analysis was done based on the difference of locale of beneficiary and type of institution they approached when they are diseased, and it is seen that the difference is not statistically significant.

Table 4. Percentage distribution of the sample according to total money spent

Amount spent on treatment		Count	Percent
OP	Nil	366	67.7
	<100	75	13.9
	>=100	100	18.5
	Mean ± SD	189.1 ± 955.5	
IP	Nil	474	87.6
	<1000	21	3.9
	>=1000	46	8.5
	Mean ± SD	559 ± 2789.8	
Medicine	Nil	312	57.7
	<500	77	14.2
	500 - 1000	35	6.5
	1000 - 2000	43	7.9
	>2000	74	13.7
	Mean ± SD	1090 ± 4052.8	
Others	Nil	399	73.8
	<=300	64	11.8
	300 - 1000	39	7.2
	>1000	39	7.2
	Mean ± SD	434.6 ± 1892.2	
Total money spent	Nil	217	40.1
	<500	78	14.4
	500 - 1000	48	8.9
	1000 - 2000	54	10.0
	2000 - 5000	53	9.8
	5000 - 10000	39	7.2
	>10000	52	9.6
	Mean ± SD	4001.3 ± 16086.9	

From the study it was seen that 40.1% of the people do not have to spend money for OP, IP and Medicine etc. However those who have to spend money, 38.89% of people had spent below thousand rupees as hospital expenses. 33.02 % of patients has to spend an amount between thousand and five thousand for their treatment. 28.09% had to spend bigger amount say more than five thousand for their disease event. The survey results showed that most of the people do not require inpatient care during the last six months. Only 29.5 % and 16.4 % visited government and private hospital respectively. Also 26.5 % people used the facilities of government hospitals more than once. The corresponding figure for private hospitals is only 15.5 %. In short the number of patients visited government hospitals is about two times that of private sector.

From the study it is seen that 93.5 % were aware about the services rendered in government hospitals. Awareness can be obtained from various sources. 84.7 % people involved in the survey were aware on the services of government hospitals through ASHA workers. Health workers gave information to 78.1 %.

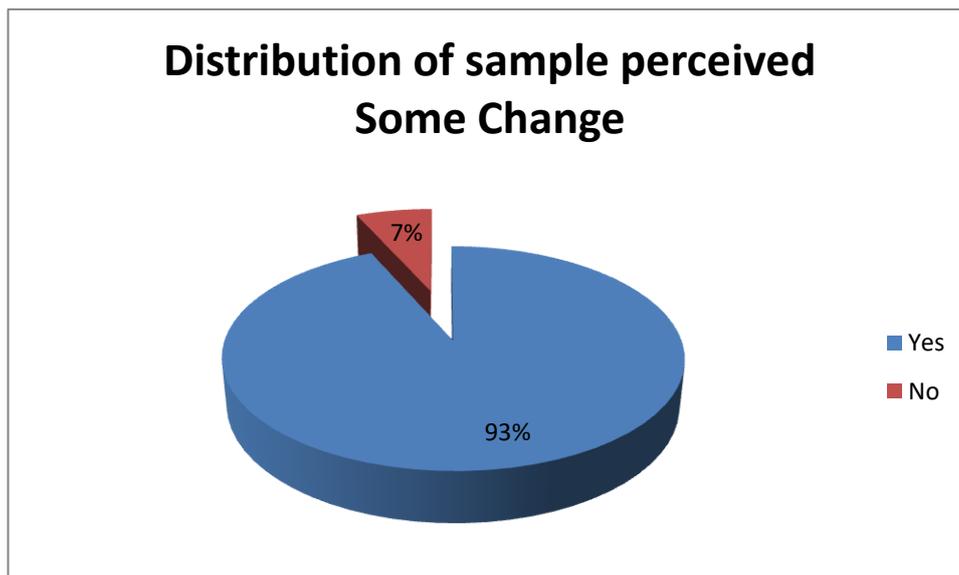
Table 5. Comparison of the source of information based on locale

Source of information	Rural		Urban		p#
	Count	%	Count	%	
Health workers	479	79.3	64	70.3	p<0.05
Media	298	49.3	24	26.4	p<0.001
Anganwadi workers	291	48.2	27	29.7	p<0.001
LSGI Members	142	23.5	4	4.4	p<0.001
ASHA workers	508	84.1	81	89.0	p>0.05

Data analysis based on locale and source of information using Fisher’s exact test shows that significant difference is observed in the case of Health workers, Media, Anganwadi workers and LSGI members as far as rural and urban area is concerned. But in the case of ASHA workers no statistically significant difference was seen indicating their presence in urban areas.

Large number of projects was implemented for the upgradation of government hospitals. This will produce some changes and the sample notices such changes were collected.

Fig.1



The survey result shows that out of 743 surveyed, 694 (93.40 %) people noticed some changes in the facilities and or services provided from government hospitals. Most of these were undertaken by NRHM.

Table 6 Distribution of sample according to opinion about various changes

Service/facility	Very poor	Poor	Average	Good	Excellent
Infrastructure	34 (4.9)	53 (7.6)	295 (42.5)	226 (32.6)	86 (12.4)
Token system	18 (2.6)	48 (6.9)	237 (34.1)	234 (33.7)	157 (22.6)
Availability of doctors	40 (5.8)	87 (12.5)	285 (41.1)	180 (25.9)	102 (14.7)
Availability of staff	30 (4.3)	111 (16)	290 (41.8)	200 (28.8)	63 (9.1)
Doctors care	15 (2.2)	24 (3.5)	274 (39.5)	246 (35.4)	135 (19.5)
Behaviour of staff	22 (3.2)	72 (10.4)	298 (42.9)	237 (34.1)	65 (9.4)
Availability of medicine	28 (4)	78 (11.2)	272 (39.2)	218 (31.4)	98 (14.1)
Lab facility	71 (10.2)	131 (18.9)	229 (33)	167 (24.1)	75 (10.8)
Modern diagnostic tools	73 (10.5)	151 (21.8)	196 (28.2)	172 (24.8)	61 (8.8)
Hygienic environment	64 (9.2)	121 (17.4)	261 (37.6)	170 (24.5)	78 (11.2)
Ambulance facility	84 (12.1)	119 (17.1)	170 (24.5)	153 (22)	81 (11.7)
Seating facility	34 (4.9)	89 (12.8)	255 (36.7)	202 (29.1)	114 (16.4)
Drinking water facility	82 (11.8)	174 (25.1)	188 (27.1)	174 (25.1)	76 (11)
Availability of water	84 (12.1)	155 (22.3)	244 (35.2)	154 (22.2)	57 (8.2)

Majority of the changes were made through NRHM. Some of the services available from sub centres are evaluated during the study. The following are the findings.

Fig.2 Distribution of the sample according to the services available

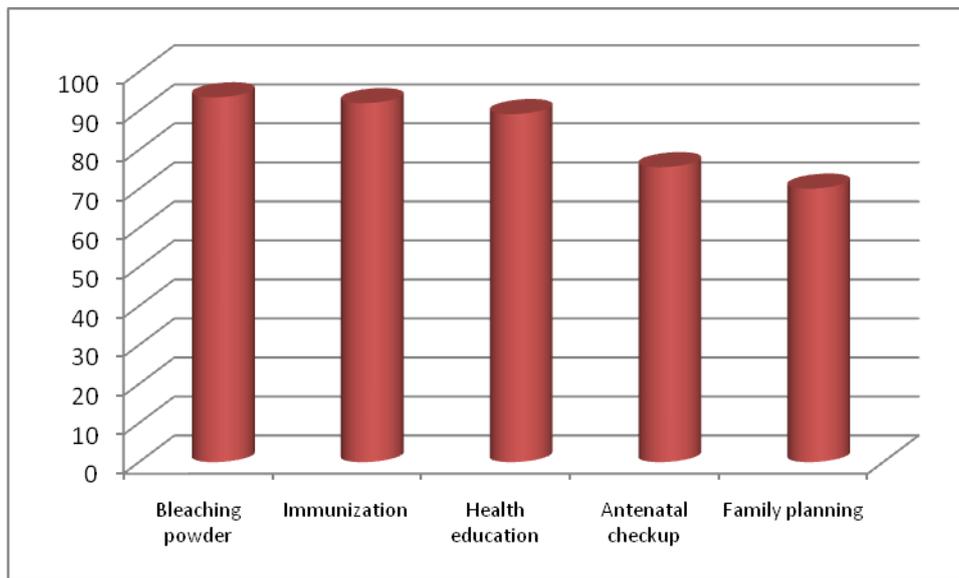


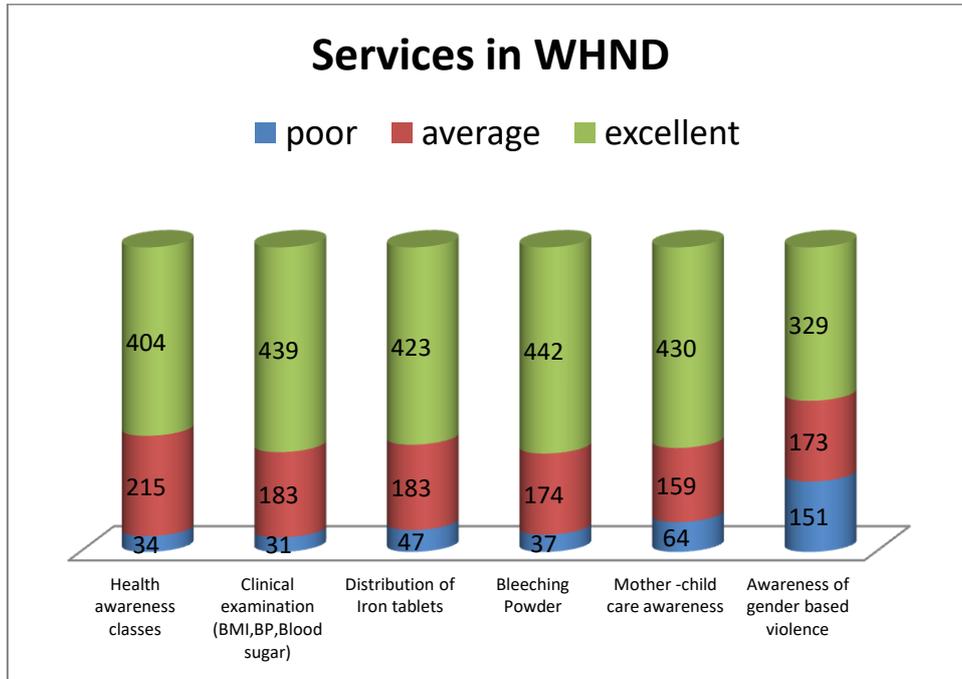
Table 7. Services available from sub centers based on locale:

Services available	Rural		Urban		p#
	Count	Percent	Count	Percent	
Antenatal checkup	454	76.6	49	68.1	p>0.05
Health education	534	90.1	59	81.9	p<0.05
Immunization	545	91.9	67	93.1	p>0.05
Bleaching powder	557	93.9	65	90.3	p>0.05
Family planning	425	71.7	41	56.9	p<0.01

Analysis using Fisher’s exact test shows that the services rendered from sub centers like Antenatal Checkup, Immunization, and distribution of bleaching powder does not show any difference in rural and urban area. But Health Education and Family Planning show significant difference and are very high in rural areas.

From the study it is seen that most of the houses (90.2 %) are visited by the ASHA workers at least once in a month. They motivate people to attend ward health sanitation & nutrition day. As a result 87.9 % of informants participated in ward sanitation and nutrition day. Data shows that field work is going in a proper manner.

Fig. 3 Opinion about the services rendered from ward health sanitation & nutrition day



It is clear that majority of informants participated in ward health sanitation and nutrition day. Their opinion about the services rendered from that day was rated by using three point scale. The results are ranked in the following manner.

1. Distribution of bleaching powder
2. Clinical examination
3. Mother-child care awareness classes
4. Distribution of iron tablets
5. Health awareness classes.
6. Awareness of genderbased violence

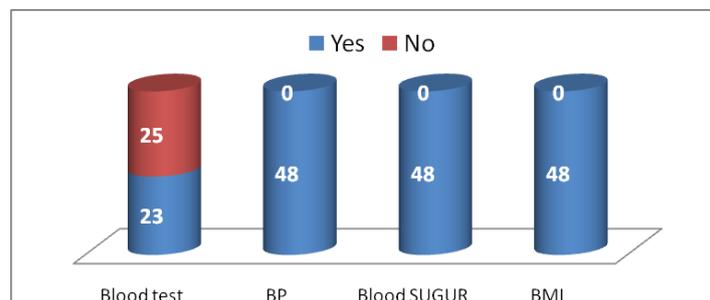
Table 8. Comparison of opinion about the services rendered from WHND

Opinion about the services rendered from WHND		Rural		Urban		Z#	P
		Count	Percent	Count	Percent		
Health awareness classes	Very poor	14	2.4	5	6.3	2.15*	0.032
	Poor	13	2.3	2	2.5		
	Average	199	34.7	16	20.0		
	Good	185	32.3	23	28.8		
	Excellent	162	28.3	34	42.5		
Clinical examination (BMI, BP, Blood sugar)	Very poor	13	2.3	1	1.3	3.04**	0.002
	Poor	14	2.4	3	3.8		
	Average	169	29.5	14	17.5		
	Good	199	34.7	22	27.5		
	Excellent	178	31.1	40	50.0		
Distribution of Iron tablets	Very poor	16	2.8	1	1.3	2.58**	0.010
	Poor	25	4.4	5	6.3		
	Average	168	29.3	15	18.8		
	Good	200	34.9	23	28.8		
	Excellent	164	28.6	36	45.0		

Bleaching Powder	Very poor	8	1.4	1	1.3	2.02*	0.043
	Poor	24	4.2	4	5.0		
	Average	155	27.1	19	23.8		
	Good	207	36.1	17	21.3		
	Excellent	179	31.2	39	48.8		
Mother -child care awareness	NA	30	5.2	5	6.3	0.18	0.861
	Very poor	5	0.9	2	2.5		
	Poor	20	3.5	2	2.5		
	Average	139	24.3	20	25.0		
	Good	208	36.3	26	32.5		
Awareness of gender based violence	NA	75	13.1	14	17.5	0.35	0.729
	Very poor	16	2.8	2	2.5		
	Poor	41	7.2	3	3.8		
	Average	153	26.7	20	25.0		
	Good	187	32.6	22	27.5		
	Excellent	101	17.6	19	23.8		

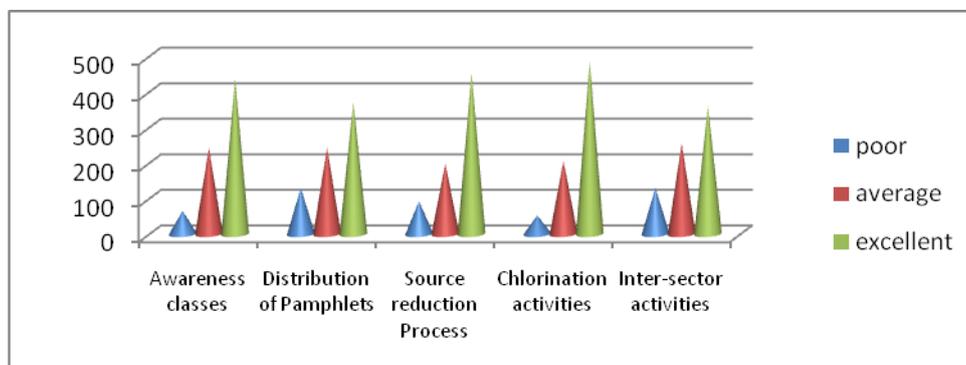
Data analysis using Mann-Whitney U test shows that opinion about clinical examination and distribution of iron tablets shows significant difference at 1 % level and difference in the opinion about health awareness classes, distribution of bleaching powder shows significant difference at 5% level.

Fig.4. Facilities in NCD Clinics



Majority of the people got the services for controlling life style diseases. 88.4 % got awareness classes .81.7 % got the facility for testing their blood sugar. Blood pressure is tested by 76.2 % of people.

Fig 5. Percentage distribution of the sample according to opinion about the strategies for the prevention of communicable diseases

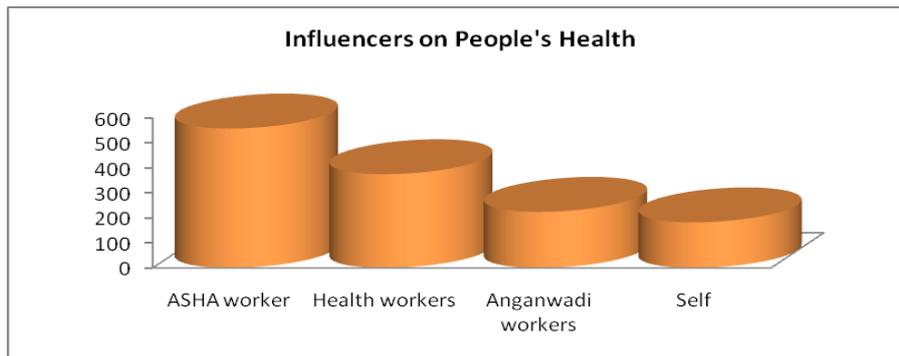


All the parameters considered in this study are functioning very well. These are done through NRHM. Also nature of area has no importance in adopting strategies as a whole.

Table 9. Distribution of the sample on influencer in people’s health

The person who influenced people on health	Count	Percent
ASHA worker	558	75.1
Health workers	375	50.5
Anganwadi workers	224	30.1
Self	182	24.5

Fig 6



ASHA workers are introduced by NRHM for each ward for ensuring community involvement in the planning and implementation of the required health services. The present study supports the goal of NRHM as ASHA workers made more influence in the health care of community.

Fig.7

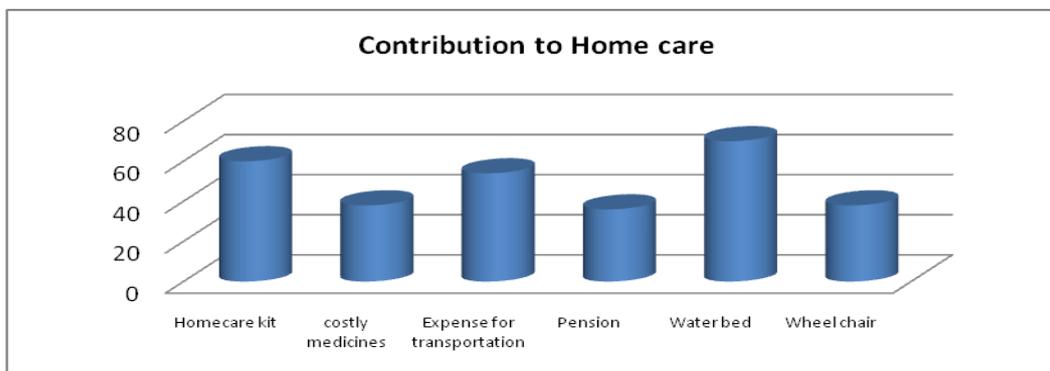
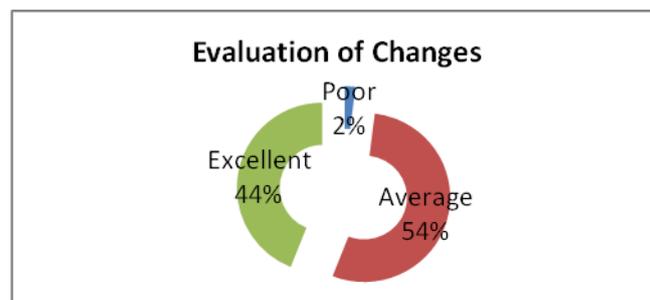


Fig.8



98 % of the respondents believe that healthy changes have occurred recently in the health institutions in their locality. 44 % of respondent rated the change as excellent, 54 % rated average while only 2 % rated it as poor.

VI. SUMMARY AND CONCLUSIONS

It is seen that number of people approaching government sector is double that of private sector. This is mainly due to the increased facilities and services rendered in government sector as pointed out by 93.4 % of informants involved in the survey. Study shows that majority (84.7 %) of people got awareness about the services under government sector from ASHA workers. They were motivating people to attend ward health nutrition days and awareness classes and medical camps. The study shows these services are more in rural areas as compared to urban areas. This may be partly due to the lack of field staff in urban areas. Most of the LSGI members (78 %) attends Ward health sanitation day in their area. As an initiative of NRHM Pain and Palliative care project is functioning very well. As a part of this beneficiaries are given home care, wheelchair, drugs, etc. NCD clinics are functioning in all PHCs and services like determination of BMI, Blood Sugar and Blood Pressure are rendered. Thus by considering all the factors attributable to the objectives of this study, it is evident that the NRHM goals are satisfied

VII. LIMITATIONS

- The study evaluated only an overall performance of NRHM in Pathanamthitta district.
- It did not focus deeply on the various initiatives under NRHM.

REFERENCES

- [1]. Kaveri Gill. A primary Evaluation of Service Delivery under the NRHM ; Findings from a study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan Working paper1/2009- PEO, Planning commission of India. May 2009 .
- [2]. Nirupam Bajpai, Jeffrey D Sachs and Ravindra. Dholakia: Improving access, service delivery and efficiency of the Public Health System in rural India. Mid-term evaluation of the NRHM. CGSD working paper No.37 October 2009.
- [3]. Concurrent Evaluation of NRHM in Kerala. Ministry of Health & Family Welfare, Government of India. 2009
- [4]. District Level Household and Facility Survey under RCH Project (DLHS-3) District Fact sheet 2007-08, International Institute for Population Sciences Mumbai.
- [5]. Evaluation study of NRHM in seven states. Program evaluation organization, Planning Commission, Government of India. New Delhi.