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Original Article

Knowledge and Work Performance of Multi-Purpose Workers under national leprosy eradication programme in Satara district, Maharashtra

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After integration of leprosy services into general health care services, peripheral health care workers played important role in leprosy elimination. The objectives of present study are to assess the knowledge and work performance of multi-purpose workers and it's correlation towards eradication of leprosy under national leprosy eradication programme in Satara district. The cross sectional study was conducted over a period of 6 months includes 71 Primary health centres (PHCs) and 6 Urban leprosy centres (ULCs) providing leprosy services to whole Satara district, Maharashtra. Random sampling technique was used to select study subjects (Multi-purpose workers, MPWs) and data was collected by using pre-tested semi structured proforma by personal interview method. Percentage distribution and statistical association between knowledge and work performance was analysed. More than 88.31% MPWs had good knowledge about leprosy and National leprosy eradication programme (NLEP), similarly more than 88.42 % showed good work performance under NLEP in Satara district. Significant statistical association was existed between age and work experience of MPWs with their work performance under NLEP (^{2}=11.2, p=0.023* and ^{2}=10.1, p=0.038*). Significant correlation was also observed between knowledge of MPWs about leprosy and NLEP with their work performance under NLEP (r=0.66, p=0.001*). Satara district achieved leprosy elimination which was mainly due to very good knowledge and quality work performance by multi-purpose workers.

Keywords : Leprosy elimination, Knowledge, Performance

Introduction

Leprosy, chronic and oldest infectious disease known to human being since dawn of civilization riddled with so many myths, undesirable, incurable, hereditary, divine punishment for past sins, bad blood, curse from God, highly contagious as social perceptions in community (Dharmshakyu 1990). Leprosy elimination i.e. less than 1 case per 10000 population achieved globally by year 2000. India achieved leprosy elimination by end of year 2005 (Park 2007). Though India achieved leprosy elimination at national level yet number of districts and blocks i.e. 42 and 552 respectively had prevalence of leprosy more than 3 per 10000 population and thus disease is still endemic (Agarwal 2005). Similar situation also reported from few districts and blocks of Maharashtra state (JDHS 2007).

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Leprosy elimination is not only to achieve leprosy case rate less than 1 per 10000 population at block, district, state and national level but increase the community awareness and participation, improve capacity building of general health care system, early case detection and early treatment with multi-drug therapy, voluntary reporting of cases, decrease stigma and rehabilitation of leprosy disabled cases. The low level of prevalence does not always indicate decreased burden of leprosy, which may be due to non detection of leprosy cases or manipulation of data also (Fiona 1995). Similarly good quality of knowledge about leprosy disease and elimination programme, positive attitude towards profession, and quality of work performance in leprosy elimination programme among the peripheral health workers often associated with decreased burden of disease in the community. It was observed that knowledge regarding leprosy was significantly lower among health care providers (Rao et al 2007). The challenges of leprosy workers were very tough to break the countries old social stigma which no other disease shared. Poor quality of knowledge, negative attitude, poor work performance and poor relationship with leprosy patient among health care providers are important factors that interfere patients compliance with treatment. A good quality of knowledge as well as quality work performance towards leprosy disease among multi-purpose workers essential to reduce the burden of disease in community.

Satara district, the dynasty of Chhatrapati Shivaji Maharaj also known as bowl of sugar of western Maharashtra, the Government health care functionaries, private health sector and non-governmental organizations are involved in provision of health care services to whole district through various cadres of health care professionals. Satara district achieved leprosy elimination by year 2005. The present study was conducted to assess the knowledge and work performance of MPWs and it's correlation to know whether elimination achieved was truly due to quality knowledge and work performance by the MPWs about leprosy and NLEP activities or not.

Material and Methods

A cross sectional study was carried out in Satara district during the period of 6 months with prior permission of District Health Officer and Add. Director Leprosy Control Unit, Sarata. At the time of study, there were 71 PHCs and 6 ULCs providing services under national leprosy eradication programme in Satara district in which total 694 multi-purposes workers (MPWs) were working. By considering 10% of all MPWs as sample size and to cover all PHCs and ULCs, one MPW was selected randomly from each PHC and ULC, totalling 77 study subject. Thus total 77 MPWs were selected as representative sample for present study. Semi structured proforma used for assessing knowledge and work performance to collect data was tested for it's validity and reliability from experts in leprosy followed by pilot study to correct ambugations included for knowledge specific questions like cause of leprosy, route of transmission, sign and symptoms, infectivity, curability, multi drug therapy, lepra reaction, Prevalence rate (PR), New case detection rate (NCDR), Modified leprosy elimination campaign (MLEC), Block leprosy awareness campaign (BLAC), rehabilitation etc. The work performance variables were number of leprosy patient detected by study subject, number of patient provided Multi-drug therapy (MDT), maintenance of follow up, treatment of lepra reaction provided, maintenance of patient's register, provide rehabilitative services, health education delivered to patient, family and

community etc. Data was collected from the study respondents by personal interview as well as verified by their daily, leprosy patient's register maintained at PHCs and ULCs at their working place without hampering their routine work in vernacular language and was converted in to English. Semi-structured proforma that includes close and open ended study variables. Study subjects for knowledge, who expressed correct were given scored '1' and with no or don't know, scored as '0'. For open ended questions, options were given and correct option was scored as '1' and wrong as '0'. Thus total score was obtained. Work performance parameters were confirmed by records maintained in PHCs and ULCs with similar scoring system as above and total score for individual as well as study variable was calculated.

The analysis of data involved socio-demographic characteristics wise tabulation of study respondents according to their knowledge about the leprosy disease, NLEP and their work performance under national leprosy eradication programme towards eradication of leprosy. Chi-square test was applied to determine the association between socio-demographic variables with knowledge and work performance and correlation coefficient was applied to determine the relationship between knowledge of MPWs with their work performance by using statistical software InStat.

Results

Table 1 revealed that out of 77 MPWs, 32 (41.5%) were males and 45 (58.4%) were females with age ranged between 21 to 57 yrs with mean age 36.06 yrs and SD 8.39 yrs. Maximum respondents, 39 (50.64%) belonged to age group 33-45 yrs. More than half respondents, 44 (57.14%) were from nursing education because as in public health system, all female MPWs are either ANM or GNM degree holders, while 45 (58.44%) respondents had less than 10 years of working experience in leprosy programme.

Table 1 : Selective demographic distribution of MPWs (N=77)

Demographic Characteristic		Frequency (%)
Age (yrs.):	20-32	31(40.25 %)
	33-45	39(50.64 %)
	46-58	7(9.09 %)
Gender:	Male	32(41.55 %)
	Female	45(58.44 %)
Education:	ANM/GNM	44(57.14%)
	SSC/HSC	26(33.76 %)
	Graduate	7(9.09%)
Work Exp. (yrs.):	0-10	45(58.44%)
	11-20	20(25.97%)
	> 21	12(15.58%)

Table 2 shows, knowledge of MPWs about rehabilitation of leprosy patient was 100%, while it was 96.10% about sign and symptoms, 97.40% curability, 88.31% route of transmission and curability, however knowledge about lepra reaction and MLEC was 71.43% and 67.53% respectively.

According to table 3, work performance by MPWs under NLEP was 89.61% on leprosy case detection during their home visit, providing MDT to leprosy patients, maintenance of patients records, regular follow-up of cases and health education delivered to leprosy patient, family and community. However performance for treatment of lepra reaction and providing leprosy rehabilitative services were 36.36% and 44.16% respectively.

According to knowledge and work performance score, MPWs were classified as poor (0-9 and 0-3), fair (10-18 and 4-7) and good (19-28 and 8-11) categories respectively with knowledge

Table 2 : Knowledge of leprosy and NLEP on Selected variables

Knowledge	Frequency (%)	Knowledge	Frequency (%)
Cause of leprosy	67(87.01%)	Leprosy elimination	66(85.71%)
Route of transmission	68(88.31%)	Prevalence rate	64(83.12%)
Signand symptoms	74(96.10%)	New case detection rate	68(88.31%)
Infectivity	68(88.31%)	Rehabilitation	77(100%)
Curability	75(97.40%)	MLEC	52(67.53%)
Treatment duration	62(80.52%)	BLAC	70(90.91%)
Lepra reaction	55(71.43%)	Leprosy register	68(88.31%)

Table 3 : Work Performance under NLEP by MPWs

Work Performance	Frequency (%)
Leprosy patient detected on home visit	69(89.61%)
MDT provided to leprosy patient	69(89.61%)
Follow up of patient done	68(88.31%)
Treatment of lepra reaction provided	28(36.36%)
Leprosy rehabilitative services provided	34(44.16%)
Patient health education given	69(89.61%)
Leprosy registered maintained	69(89.61%)
Patient wise MDT stock maintained	68(88.31%)

Table 4 : Knowledge and work performance category distribution of MPWs

Category	Knowledge (%)	Work performance (%)
Poor	1(1.30%)	8(10.39%)
Fair	8(10.39%)	4(5.19%)
Good	68(88.31%)	65(84.42%)

score ranged from 9 to 28 with mean 9 and SD 5.4 while work performance score ranged from 1 to 11 with mean 8.7 and SD 2.8. According to table 4, 88.31% MPWs had good quality of knowledge about leprosy and NLEP while 84.42% had good quality of work performance under NLEP services in Satara district.

The table 5 perceived that maximum MPWs, 37 (94.8%) and 7 (100%) from age groups 33-45 yrs and 46-58 had good quality knowledge as compare to age group 20-32 years. As compare to female MPWs males had more knowledge 29 (90.6%). Good quality of knowledge was seen more in graduate MPWs 7 (100%) as compare to nursing and those from secondary and higher secondary educated. All respondents, 20 (100%) and 12 (100%) with working experience more than 10 and 20 yrs had good knowledge as

Table 5 : Association of knowledge and Socio demographic characteristics

Demographic characteristic		Poor Freq.(%)	Fair Freq.(%)	Good Freq.(%)	^{2}
Age(yrs.):	20-32	1(3.23%)	6 (19.35%)	24(77.42%)	6.31
	33-45	0(0.0%)	2 (5.13%)	37(94.87%)	p>0.05
	46-58	0(0.0%)	0(0.0%)	7(100%)	
Gender :	Male	0(0.0%)	3 (9.38%)	29(90.63%)	0.79
	Female	1(2.22%)	5(11.11%)	39(86.67%)	p>0.05
Education:					
	ANM/GNM	1(2.27%)	5(11.36%)	38(86.36%)	1.67
	SSC/HSC	0(0.0%)	3(11.54%)	23(88.46%)	p>0.05
	Graduate	0(0.0%)	0(0.0%)	7(100%)	
Work Exp.(yrs.):	0-10	1(2.22%)	8(17.78%)	36(80.0%)	7.67
	11-20	0(0.0%)	0(0.0%)	20(100%)	p>0.05
	> 21	0(0.0%)	0(0.0%)	12(100%)	

Table 6 : Association of work performance and Socio-demographic characteristics.

Demographic characteristic		Poor Freq.(%)	Fair Freq.(%)	Good Freq.(%)	^{2}
Age (yrs.):	20-32	7(22.58%)	3(9.67%)	21 (67.74%)	11.2*
	33-45	1(2.56%)	1(2.56%)	37(94.87%)	P<0.05
	46-58	0(0.0%)	0(0.0%)	7(100%)	
Gender:	Male	2(6.25%)	2(6.25%)	28(87.50%)	0.58
	Female	6(13.33%)	2(4.44%)	37(82.22%)	p>0.05
Education:	ANM/GNM	6(13.63%)	2(4.54%)	36 (81.81%)	2.3
	SSC/HSC	2(7.69%)	2(7.69%)	22(84.61%)	p>0.05
	Graduate	0(0.0%)	0(0.0%)	7(100%)	
Work Exp.(yrs.):	0-10	8(17.17%)	4(8.88%)	33(73.33%)	10.1*
	11-20	0(0.0%)	0(0.0%)	20(100%)	P<0.05
	> 21	0(0.0%)	0(0.0%)	12(100%)	

(* = significant at 95% CI)

compared to working experience less than 10 yrs.

Table 6 shows increased trend of work performance by MPWs as knowledge about leprosy disease, NLEP and there was statistical association observed between age and working experience of MPWs with their work performance under leprosy elimination services (^{2}=11.2, p=0.023* and ^{2} =10.1, p=0.038*). It indicates that as age and working experiences increases work performance was also increases.

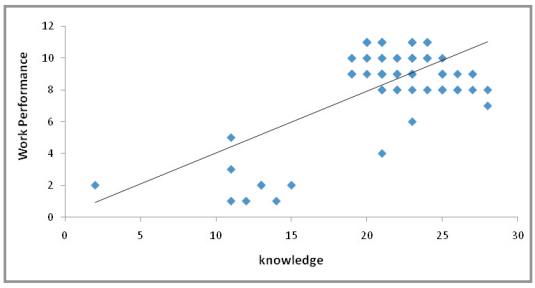

Fig 1 : Correlation between knowledge and work performance

Figure 1 depicts a strong correlation observed between knowledge of MPWs about leprosy and NLEP with their work performance under NLEP activities (r=0.66; p=0.001* r^2=0.40). It indicates that as knowledge increases work performance also increases.

Discussion

WHO suggested that effective leprosy control requires integration of leprosy services in to general health services which leads to rendering the services to the door step of community, close and frequent contact with community, improve case finding, case holding, increase the awareness about leprosy, reduced stigma, improve knowledge and skill among health care personals. The quality of the health–care provider-patient relationship is an important factor influencing patient compliance.

The study revealed that more than 88.31% MPWs had good knowledge about leprosy and NLEP activities in Satara district under national leprosy eradication programme, while study carried out in Guyana by Briden and Maguire (2003), showed more than 97% knowledge among MPWs. Similarly study carried out by Croft and Croft (1999) in Bangladesh, showed more than 98% knowledge among health workers (MPWs) which was mainly due to quality education, training and retraining of health care workers by district leprosy control unit. Study carried out by Raju and Kopparty (1995), in Andhra Pradesh showed 50% knowledge among the respondents which indicates low level of knowledge due to low level of education, lack of training and motivation of the health workers.

The knowledge about cause of leprosy was 88.73%, transmission of disease 91.55%, sign and symptoms of leprosy 98.59% and about treatment of leprosy was 94.33%. Education and training of peripheral health workers play important role in the improvement in their knowledge about leprosy and NLEP and health education and rehabilitation of leprosy patient, family members and community play important role in reducing the burden of leprosy as well as stigma in community mainly due to motivation and positive attitude. Study carried out by Briden and Maguire (2003), showed knowledge about leprosy, cause, sign and symptoms and treatment of disease was more than 97%. Similar findings also observed by Croft and Croft (1999), in Bangladesh were more than 96% about motivation and health education. Study carried out by Ukpe (2006) in Gert Sibande district in South Africa showed knowledge about leprosy was 100% however it was 67% about sign and symptoms, cause, treatment while 51% about motivation and health education of leprosy patient as well as family and community which may be due to low case detection rate, training of health care functionaries, poor attitude of health care workers towards leprosy.

The present study revealed knowledge about non isolation of leprosy patient was 97.18% which was mainly due to positive attitude of MPWs towards leprosy patient. While study carried out in Guyana by Briden and Maguire (2003), showed 60% knowledge may be due to low attitude of health workers towards leprosy patient or low case

detection rate. However study carried out by Kumaresan and Maganu (1994), in Botswana showed that health care workers suggested that leprosy patient should be isolated and treated which may be due to poor motivation, lack of knowledge and poor attitude towards leprosy.

The present study showed 80% to 90% work performance by MPWs under NLEP services as active case detection in community, provided MDT treatment to patients, maintained follow up of cases, provided treatment to lepra reaction cases and providing rehabilitative services to leprosy affected patients which was mainly due to positive attitude towards leprosy patients, good quality knowledge and motivation. Similar findings were also observed in a study carried out by Panday and Santosh (2005), in 22 districts of Jharkhand showed more than 90% health workers provided MDT to leprosy cases, maintained leprosy cases records, regular follow up was done, and regular detection and treatment of lepra reaction cases. Similar findings were also observed by a study carried out by Dixit (2005), in Koderma district of New Delhi as very good performance ranges from 82% to 94% about leprosy services among ANMs and other para-medical personals under NLEP due to training and retraining of health care personals and proper implementation of programme, motivation of staff and good knowledge among multi purpose workers about leprosy and NLEP.

The study determined the strong correlation between knowledge of MPWs about leprosy and NLEP with their work performance under NLEP activities to eradicate the leprosy under national leprosy eradication programme which was not determined any where and anybody.

Conclusion

The Satara district achieved leprosy elimination by the end of March 2005 which was mainly due to very good knowledge and good quality work performance by multi-purpose workers with their strong association between knowledge and work performance. Though leprosy elimination achieved, the disease have long incubation period need continue support from government as well as non governmental agencies to achieve zero prevalence rate of leprosy which further reduce the burden and stigma of disease in the society.

Recommendation

As a result of long incubation period in leprosy, it is necessary to continue the NLEP services/ activities even though leprosy elimination achieved because few hidden cases may give rise to big problem in future due to our socio-demographic features of community as well as migration.

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