Human Rights and Rural Health Providers' Access to Health Information

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Introduction

People in rural areas frequently suffer from common diseases that are easily preventable and curable. In India, it was reported that more than 6000 children below the age of five years die every day. More than half of these deaths are due to malnutrition-mainly deficiency of Vitamin A, iron, iodine, zinc and folic acid (Micronutrient Initiative, 2007). Many primary health problems could be prevented and health of rural communities could be improved if local community based health workers had essential primary health knowledge.

In India, although 72 per cent of people live in rural areas, their healthcare is attended by less than 20 per cent of qualified medical doctors (WHO, 2007). There is ample evidence that primary health care in rural areas is mainly provided by village based informally trained private practitioners (hereafter referred to as Rural Healthcare Providers or RHPs) who are not formally trained in any medical system and do not possess a statutory medical qualification (Bhat, 1999). These RHPs are usually the first point of contact at the village level in

India for delivering primary health care. The widespread presence of RHPs across the country has been documented from the early 1970s (Gautam, 2006).

Considering the lack of good health care due to acute shortages of well trained health professionals in rural areas, the National Rural Health Mission under Ministry of Health and Family Welfare, Government of India, has proposed training and licensing of these practitioners (RHPs) in rural areas (MOHFW, 2006a). Other recent government documents and policies have also made strong recommendations for mainstreaming of RHPs through training and other linkages (MOHFW, 2006b).

Access to timely and appropriate health information is essential for any health professional. For community based health workers it is even more imperative because these health workers are in direct contact with community members and have a crucial role to play in preserving and promoting community health. If health workers lack access to essential health information, communities are deprived of good health. It is small wonder that access to essential healthcare information for health workers as well as users is slowly gaining international recognition as a human right.

The belief that health information is a human right is central to the online advocacy campaign on "Health Information for All by 2015" (HIFA, 2006) global campaign launched in 2006 to improve the availability and use of healthcare information in developing countries. HIFA and its supporters argue that the right to health information is grounded in the right to health and the right to receive safe, effective healthcare. The right to health is a human right enshrined in the Universal Declaration of Human Rights 1948 (UN).

So what does it take to translate this right into practice? In spite of all the arguments that have been presented here in support of increasing access to health information for community based health workers, the task is easier said than done. Some of the key challenges include: How does one build a regular stream of health information delivery for

health workers in far flung but needy rural areas who do not have the time to attend classroom training for long periods? How does one transcend the language barriers, as much of health information is in the English language that health workers are not familiar with? How does one make the information relevant, meaningful and useful and also attractive enough for health workers to want to access it with self motivation?

The Indian Institute of Technology Madras's Rural Technology and Business Incubator (IITM's RTBI) recognized these challenges in 2007 when they decided to respond to the pressing need for strengthening rural health care providers' knowledge and skills. The RTBI launched a project "First Care" to strengthen Rural Healthcare Providers (RHPs) in India. The first project intervention was to deliver relevant health information to RHPs through a distance-learning mode. In this paper we describe how E-learning through distance mode has not just been successfully established but has also contributed to enhancing the information and knowledge levels of community based RHPs.

Methods and Materials

IITM's RTBI initiated a First Care pilot project with 22 Rural Healthcare Providers in Thiruppathur taluk of Sivaganga district in Tamil Nadu. The study area comprised villages including Thiruppathur town within a distance of 35 km with a rural population of approximately 1.9 lakhs. A survey was carried out to identify the rural healthcare practitioners. In all, 35 non MBBS RHPs practicing in Thiruppathur region were contacted through a local Practitioners' Association and invited for an orientation meeting. Following the orientation programme, 22 RHPs were selected to take part in the pilot project based on a set of criteria including a minimum 5 years of independent practice, minimum class X educational background, having clinic base and village internet kiosks availability in their respective village. The remaining RHPs were informed that they would be inducted in the future training programme. The distance E-learning mode was

adopted to impart essential primary health information. These 22 RHPs were linked with computers and Internet and trained in basic computer use at their respective village where the village Internet kiosks are located and sent E-learning modules fortnightly. The 11 E-learning modules included primary health aspects of infectious and non-infectious diseases; respiratory systems; cold and flu; cough; asthma; bronchitis; pneumonia; fever; headache; eating right to stay healthy and foods that help us to stay healthy. Health content in the modules was adapted from "Where There Is No Doctor", the globally renowned primer for community health workers. All modules were translated into Tamil, the local language and hosted on a password protected website for RHPs.

Five to ten questions based on the module content, with multiple choice responses were designed and the RHPs were required to select the corrects answer before and after reading each respective module. Pre and Post module study marks of every RHP in each E-learning module were obtained through the back end database. Percentage of increase in knowledge was calculated individually and collectively. The mean scores were compared using paired t-test for their statistical significance using SPSS 7.5 version and presented the same in Table 1 and 2.

Results

The data on characteristics (sex, education, etc.) of 22 RHPs and pre/posts test marks obtained by them for each E-learning module are presented in the Tables 1 and 2. Majority of the RHPs (82 percent) were males and 68 percent were 40 years old. Most of the RHP's (86percent) studied up to 12th standard and only 14 percent studied up to 10th standard. They had diversified background including diplomas in Sidha, Homeopathy, Lab technology, Auxiliary Nursing Midwife and Pharmacy etc.

Majority of the RHPs (59%) have been practicing independently for the last 16 to 20 years in their respective villages. These RHPs are well integrated within their communities. They have their own small clinics and are

available almost 24 hours as they generally lived and worked in the same place. RHPs reported that they met about 10 to 20 patients per day suffering from a variety of symptoms. The common ones included cough, fever, diarrhea, injuries and pain related symptoms.

Table 1
Distribution of Rural Health Providers by Background Characteristics

Characteristics		Number	Percentage
Sex	Male	18	(82)
	Female	4	(18)
	Total	22	(100)
Educational qualification	Up to 10th Std	3	(14)
	Up to 12th Std	19	(86)
	Total	22	(100)
Years of independent practice	0 to 5 years	3	(14)
	6 to 10 years	4	(18)
	11 to 15 years	2	(9)
	16 to 20 years	13	(59)
	Total	22	(100)

In each of the E-learning modules, the pre-test scores obtained by the RHPs collectively in all the modules are lower when compared to their post test scores. The lowest pre-test scores were recorded in case of Infectious and Non-Infectious Diseases module whereas the highest pre-test scores were recorded in Respiratory systems module as compared to other modules. The average pre-test mark for all modules combined is 67 out of 100 (all the 11 modules). The average post test score is 91 percent indicating an increase of 24 percentage points, which is significant at P< 0.01.

Significant increase in scores was observed for the following modules: 'Pneumonia' (53 percent at P< 0.01) followed by 'Headache' (34 percent at P< 0.01), Infectious and Non Infectious Diseases (28 percent at P< 0.01), 'Foods that help us to stay healthy' (39 percent at P< 0.01), 'Eating right to stay healthy' (28 percent at P< 0.01), 'Cold and Flu'

(26 percent at P< 0.01), 'Fever' (25 percent at P< 0.01), 'Bronchitis' (20 percent at P< 0.01), 'Cough' (11 percent at P< 0.05) and Respiratory systems (3percent at P< 0.05).

Table 2
Module wise Pre and Post Test Marks obtained by RHPs through Distance Learning Mode (Percentage) (N=22)

E-learning Module	*Pre-Test*	*Post Test*	*Percent Increase over pre-test*	*'t'-value*
Infectious and non-infectious diseases	44	72	28	5.792**
Respiratory systems	89	92	3	2.159*
Cold and flu	66	92	26	5.186**
Cough	75	86	11	2.806*
Asthma	87	91	4	1.073NS
Bronchitis	74	94	20	4.500**
Pneumonia	47	100	53	43.924**
Fever	54	79	25	7.423**
Headache	66	100	34	5.631**
Eating right to stay healthy	72	100	28	7.868**
Foods that help us to stay healthy	69	100	31	10.529**
Mean	67.44	91.38	23.95	5.512**

*P< 0.05; **P< 0.01; NS- Non Significant

Discussion

The results indicate that the knowledge of RHPs significantly increased in all the E-learning modules except Asthma module. It is obvious from the pre test scores that the knowledge of RHPs for the respective health conditions was inadequate. The higher marks in post test were due to acquisition of knowledge through the E-learning process.

The modules in which the RHPs gained significantly are all extremely important modules with great public health significance. Pneumonia can be a potential killer among children. Headache is one of the most frequent complaints. Infectious and Non-Infectious diseases pertain to fundamental concepts of disease transmission. Child nutrition information is critical in our country where almost half of all under fives are malnourished. Cold and Flu are common viral infections

and due to this there may be mild diarrhea especially in young children. Fever is a sign of illness. Bronchitis is an infection of the bronchi that carry air to the lungs. Cough is a very frequent complaint.. With these modules we have improved RHPs' knowledge in some of the most fundamental health issues related to rural communities.

Although distance learning courses such as the Indira Gandhi National Open University are available to urban educated Indians living in cities and big towns, these are mainly in English and rely more on printed material than the Internet. Training and knowledge development programmes for community based health workers have typically relied on conventional classroom methods that require the workers to travel quite some distance away from their home base. Ours is probably a pioneering programme in India that seeks to improve community based health workers' knowledge levels 'wherever they are', at their own pace, using internet technology. Although not so common in India, web based courses have been used successfully in other developing countries. A Web-based course was very successful in respect of nutrition in public health in Brazil (Dirce et al., 2001). Similar web based course was conducted in New Zealand. There was success in knowledge enrichment after the course in respect of health. It has been reported that Internet technology was alternative for delivering educational material and advice although there was a bandwidth limitation (David et al., 2001).

The main problems observed include low Internet bandwidth, and longer time taken to download the module. Despite this limitation, the E-learning training was very successful and a constructive tool for knowledge building. The E-learning materials were constantly reviewed and updated by the health team on the back end and the RHPs also had the opportunity to give their feedback and comments directly to the team members. Based on this course outcome, we would recommend that it should play an important role in the capacity building programme of these RHPs who are delivering primary health care to the rural people

However it is still difficult to say how the skills of these RHPs have changed as a result of improvement in knowledge levels alone. We are developing other methods and interventions to improve the overall health care delivery services provided by these RHPs. Mobile phone, Voicenet technology and a clinical guidance system called e-Guide will be introduced to other areas where there is even poorer Internet or no Internet connection.

From this study it is suggested that E-learning is an effective and feasible tool for increasing RHPs' knowledge on essential health information required to address rural health problems. This is one step closer to helping rural communities and their health providers achieve the right to access essential health information.

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