

## Long term sustainability and efficacy of self-care education on knowledge and practice of wound prevention and management among leprosy patients

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In a chronic disease like leprosy, assessment of self-care education of long duration is necessary to find out its effectiveness and to bring out sustainability both in the point of view of the provider and of the recipient. Self-care education was imparted to patients for 8 years in the Katpadi Block as part of 'prevention of impairment and disability' programme from the year 2000 onwards. The patients were provided with knowledge regarding 'inspection' for pre-disposing factors of wound development and about external causes (trauma) or dangerous environments for wound development. Additionally, they were given practice on self-care techniques for prevention and management of wounds. Staff as part of their routine work has been doing this. An evaluation, done by independent assessor, compared the effect of this programme with a control area where no such programme was going on. This showed that the self-care education resulted in very high level of knowledge and practice compared to the control area, even up to 100% practice in some aspects. Self-care education is effective, can be sustained for a long time and also can be carried out as part of routine work.

**Key words:** Self-care education, Leprosy, Wound prevention, Wound management, Rural India

### Introduction

Various aspects of disability in leprosy and suggestions for management are well documented (Ramesh and Porichha 1996, Srinivasan 2004). For a person affected by leprosy, management of disability can be assisted or aggravated by that person's own attitude and surrounding environment (Cross 2007). It is essential for the patients to be part of the process of management of disability. Therefore, it is important to empower the patients, so that they develop favourable attitude that leads to positive action in

preventing new wounds and treating any existing wounds. They need not do this alone but with involvement of their family and community (Benbow and Tamiru 2001, Li et al 2008).

An intensive self-care education of 14 days duration provided in a special setting near hospital resulting in success was reported by Cross and Newcombe (2001). Many have reported field based self-care education programmes with varying degree of success but they were of short term, one year to three years duration (Ethiraj et al 1995, Mathew et al 1999,

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Ganapati et al 2003, Chakraborty et al 2006, Madhavan et al 2007, Li et al 2008, Ebenso et al 2009). However, in a chronic disease like leprosy, study of self-care education of long duration is necessary to bring out sustainability both in the point of view of the provider and of the recipient. This paper presents, long term, 8 years, feasibility of self-care education on knowledge and practice of wound prevention and management among patients with leprosy.

### Materials and Methods

A self-care education programme has been carried out at Katpadi Block (self-care Block) as part of 'prevention of impairment and disability' (POID) programme from the year 2000 onwards. The patients were provided with knowledge regarding 'inspection' for pre-disposing factors of wound development such as, blisters, injuries, red spots, calluses, thorns and wounds. Knowledge imparted about external causes (trauma) or dangerous environments for wound development covered exposure to fire, hot objects and sharp objects. They were given practice in self-care for prevention such as, soaking, scrapping and oiling, basic exercises and wearing protective covering/footwear. Practices in the management of wounds were recognition of signs of healing/worsening, cleaning and dressing of wound. Pernambut Block where no active POID programme was going on was taken as control area for comparison.

Trained staff from the community health department met the patients once a month in their routine work and imparted this education. Each session took about an hour during the first visit and half an hour subsequently. Appropriate microcellular rubber (MCR) footwear was provided to them and those who refused MCR were encouraged to use any footwear. The family members were also taught and encouraged to participate in patient-care.

For evaluation a sample of 50 patients with WHO deformity grade 1 and grade 2 from those who had self-care education and a sample of 50 from the controls were selected. Independent assessor using a pre-tested questionnaire did the

evaluation. There were 27 males and 23 females in the self-care group and 29 males and 21 females in the control group. In both the samples, 20 patients had grade 1 deformity and 30 had grade 2 deformity. Their ages ranged from 35 to 75. Both the groups did not differ significantly in these characteristics. The groups did not differ significantly in their education distribution and occupation distribution.

**Definition of outcome classification:** Patients included here were those with at least one limb involved

#### a. Knowledge on inspection

- Inadequate knowledge: Patient looks for only one of the items taught.
- Adequate knowledge: Patient looks for more than one item.

#### b. Knowledge on dangerous environment

- Inadequate knowledge: Patient is aware of only one of the aspects taught.
- Adequate knowledge: Patient is aware of more than one aspect.

#### c. Practices were evaluated through observation

### Results

Most of the patients in the self-care group had adequate knowledge on inspection for pre-disposing factors for wound development in hand as well as feet compared to the control group (Table 1). If those with inadequate knowledge are combined with those who said 'don't know' all those in the control group had inadequate knowledge as far as hands were concerned and 90% had inadequate knowledge, as far as feet were concerned. The distribution of this knowledge between self-care group and control group is significantly different for hands as well as feet.

Table 2 provides results on knowledge of external causes for wound development for the two groups, the self-care group exhibiting adequate knowledge in large percentage and the control group showing very small percentage of the

**Table 1 : Knowledge on inspection for predisposing factors for wound development**

Knowledge	Hands				Feet			
	Self-care No.	%	Control No.	%	Self-care No.	%	Control No.	%
Adequate	27	84.3	0	0	42	91.3	4	8.9
Inadequate	2	6.3	13	41.9	2	4.3	19	42.2
Don't know	3	9.4	18	51.1	2	4.3	22	48.9
Total	32	100	21	100	46	100	45	100
$\chi^2 = 48.78$ p=0.00				$\chi^2 = 61.82$ p=0.00				

**Table 2 : Knowledge on external causes for wound development**

Knowledge	Hands				Feet			
	Self-care No.	%	Control No.	%	Self-care No.	%	Control No.	%
Adequate	27	84.3	1	3.2	44	91.7	3	6.7
Inadequate	5	15.6	6	19.4	4	8.3	3	6.7
Don't know	0	0	24	77.4	0	0	39	86.7
Total	32	100	31	100	48	100	45	100
$\chi^2 = 48.23$ p=0.00				$\chi^2 = 74.89$ p=0.00				

**Table 3 : Practice of techniques on prevention of wound**

Techniques	Hands			Feet		
	Self-care N=32	Control N=31	$\chi^2$ (p)	Self-care N=48	Control N=45	$\chi^2$ (p)
Soaking	32 100%	8 25.8%	34.26 (0.00)	48 100%	18 40.0%	37.72 (0.00)
Oiling	32 100%	9 29.0%	31.84 (0.00)	48 100%	17 37.8%	39.86 (0.00)
Scrapping	32 100%	4 12.9%	45.28 (0.00)	48 100%	11 24.4%	53.95 (0.00)
Basic exercise	31 93.8%	6 19.4%	35.91 (0.00)	45 93.8%	6 13.3%	57.44 (0.00)
Wearing protective covering	31 93.8%	5 16.1%	38.69 (0.00)	48 100%	38 84.4%	5.99 (0.01)

same. Knowledge of self-care group significantly surpassed the knowledge of control group both for hands and feet.

Practices of various techniques of prevention of

wounds in the self-care group were 93.9% - 100% as far as hands were concerned (Table 3). Similar is the finding for feet. In three techniques, self-care group attained 100% practices. Self-care

**Table 4 : Practice of techniques on management of wound**

Techniques	Hands		$\chi^2$ (p)	Feet		$\chi^2$ (p)
	Self-care N=32	Control N=31		Self-care N=48	Control N=45	
Sign of healing/ worsening	28 87.5%	9 29.0%	19.86 (0.00)	46 95.8%	17 37.8%	33.22 (0.00)
Cleaning	28 87.5%	11 35.5%	15.93 (0.00)	46 95.8%	20 44.4%	27.33 (0.00)
Dressing	28 87.5%	10 32.3%	17.83 (0.00)	46 95.8%	20 44.4%	27.33 (0.00)

group's performance very highly outweighed that of the control group in each aspect.

A large proportion of those who had self-care education compared to the controls was checking for signs of healing/worsening and did cleaning and dressing of wounds. Significant difference was found in each aspect. Within the self-care group, no difference was found between younger and older persons, educated persons and those with no education and also those in paid employment and others.

Moreover, none who received self-care education compared to 3 in the control area reported new ulcer during 2008.

### Discussion

Many studies have recorded an improvement after self care education. Mahadevan et al (2007) reported after two years of self-care education, 82.7% were practicing self-care in the rural areas. Chakraborty et al (2006) reported that 58% practiced self-care after one year. Li et al (2008) reported 87% continued to practice self-care after 3 years of education. Here 93.8% to 100% practiced what they were taught during 8 years of education. This study shows that the self-care education as part of routine work can be sustained for a long term and its effectiveness is cumulative, reaching 100% in many aspects.

Chakraborty et al (2006) found that 86.5% were wearing footwear after self-care education of one year. Here 100% of those who had self-care education were using footwear. This was found at

the end of 8 years of self-care education and it is not known whether this was reached at the end of eighth year or earlier.

It is interesting to note that 84.4% of control group was wearing footwear. Perhaps this had happened due to the advice received at the time when they attended hospital earlier or due to general social and economic development occurring in this part of the country. About four decades ago when MCR footwear was given to the leprosy patients they hesitated to use them due to stigma. At that juncture, there was a suggestion that all the staff and students wear MCR footwear to reduce stigma. Enormous social and economic changes have taken place since then. Now it is rare to find anybody walking without footwear. Shops selling regular footwear display MCR footwear and prescribe them as a panacea for various ailments, aches and pains. Not only wearing footwear has increased but also wearing of MCR footwear. So, stigma attached to MCR footwear has diminished. As a consequence of overall development, majority of the control group use footwear. The time has come to spend less effort in educating on use of footwear. Nevertheless, the poor leprosy patients have to be given MCR footwear free.

The POID program has a multifaceted approach to leprosy. It does not focus on the immediate cure of leprosy through drug prescriptions alone but rather advocates adopting a lifestyle change that will facilitate the afflicted to live a normal healthy life. It does this through prevention education of

primary and secondary wounds. It also continues to support patients even after they have visited a hospital. Formation of support groups may strengthen motivation and increase compliance. It affords them the opportunity not only to return back to their daily task but also through education empowers them with a sense of control over a possible debilitating disease.

Care of the disabled is labour-intensive and requires motivation and commitment. Skills need to be transferred in such a way that people are able to apply them. The simple structured programme should be medically correct, socially acceptable and emotionally appealing. The staff can continue to provide and monitor self-care education as part of their routine work for a long term and increase the knowledge, motivation and the practice tremendously.

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