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Awareness of Community-Based Rehabilitation with a Focus on Public Health Centers

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Abstract. [Purpose] We evaluated awareness of the community-based rehabilitation (CBR) with a focus on public health centers (PHCs) to provide basic data for the future direction of services. [Subjects and Methods] Research was carried out from March to July 2010 at 5 hospitals and 4 welfare agencies in Seoul that were selected using a random number table. Data were collected in face- to- face interviews of 184 disabled people. [Results] Awareness of CBR was low, with 78% of subjects unaware of its existence. Demand was the highest for rehabilitation therapy (4.40 point). The percentage of persons who had never visited PHCs was high (50.9%). The frequency of visits to PHCs for rehabilitation therapy was the lowest (3.9%) among all the community facilities. Logistic regression analysis showed demands for visiting examinations, guidance on rehabilitation facilities and house remodeling were statistically significant as well as convenience, age, education, frequency of visits to PHCs and awareness. [Conclusion] The findings suggest low awareness of CBR in PHCs despite a marked demand for rehabilitation therapy. More active promotion should be undertaken to increase the awareness of potential users. Also, further research into the reasons for low awareness and suitable promotion methods should be undertaken in order to provide the best and most accessible services.
Key words: Community-based rehabilitation, Awareness, Public health center

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INTRODUCTION

The World Health Organization (WHO) has for several decades widely promoted CBR (Community-based rehabilitation) services to improve the quality of life of disabled people. The aim is to ensure that rehabilitation services are provided to all people with disabilities, whether they live in an urban or rural setting and whether they are rich or poor[1)]. CBR has been implemented through the combined efforts of the disabled, their families, communities and governments for the past 20 years[2–4)]. In recent years, the WHO has been developing strategies to tailor the program to more than 90 countries through developments ranging from management to physical rehabilitation techniques[1)]. In Korea, China, Japan and Africa, CBR is offered through each country's primary healthcare[5–8)].

In Korea, the CBR model focuses on PHCs (Public health centers) and has been evolving as in other countries, because PHCs are easy to estabilish nationwide[9)]. It was clearly stipulated in 1995, in the law for community health that PHCs have to perform rehabilitation work in the community[10)]. Therefore, PHCs promote the social integration of the disabled who are vulnerable members in community. The function and role of PHCs has increased to provide health care equally for the whole nation and CBR with a focus on 45 PHCs is being implemented across the nation until 2011[11)]. However, CBR implementation in PHCs has been unsuccessful, and efforts have been made to identify the causes of CBR inactivity[6,7,11–13)]. Many studies on the demand for CBR among the disabled suggest a strong demand for emotional, cognitive and social services, as well as transport, health management, activities of daily living (ADL), economic, and other therapeutic rehabilitation services. However, most of these studies were conducted with disabled persons who live in the community as opposed to those staying in hospitals. This emphasizes the need to study the demand for CBR by disabled persons residing in hospitals.

Some studies have explored the use of PHCs[3,8,13)]. In particular, Hong found that the use of PHCs was low[11)]. Furthermore, the model of using CBR and the nature of the program itself are poorly understood, leading to an increasing rate of readmissions following discharge from

the hospital system[7,14]. This situation can be attributed to the fear that patients would be ineligible for rehabilitation therapy following hospital discharge, a problem that could be solved through simple educational procedures. It suggests that disabled persons do not realize the availability of CBR with respect to PHCs.

The purpose of this study was to provide basic data to suggest the future direction of CBR by researching awareness of CBR with a focus on PHCs for the disabled who live in the community after discharge as well as those residing in hospitals. The detailed purpose was to identify the general characteristics of, and demand for CBR, as well as the characteristics of PHC use that affect awareness.

SUBJECTS AND METHODS

In this study, general characteristics, demand for CBR and characteristics of PHC use were treated as independent variables, and the subject's awareness of CBR was a dependent variable. Our questionnaire consisted of 5 questions on general characteristics, 25 questions on demand distributed across 4 categories, and 2 questions on PHC use. This served as the basis for preliminary studies[10,15–19]. The general subject characteristics included in this study were age, gender, education, marital status and economic status. The characteristics of PHC use included frequency of visits to PHCs, and the frequency of visits to community facilities for rehabilitation. Each item of demand and frequency of visits used a 5-point Likert scale; the confidence index (α) was 0.931.

Research was performed from March to July 2010 at 5 hospitals and 4 welfare agencies in Seoul that were selected using a random number table. Face-to-face interviews with 227 disabled people were conducted by therapists and trained student assistants. Data were collected on 184 of the subjects; the remaining 43 were excluded because they didn't respond to some items.

General characteristics of subjects, awareness and visits to PHCs or community facilities were analyzed by frequency and percentage. Logistic regression analysis was used to identify the general characteristics of, and demand for CBR as well as the characteristics of PHC use that affect awareness. The statistical significance level α was 0.05 and the analysis was performed using SPSS 18.0.

RESULTS

There were more females (57.3%) than males and more married persons than single persons. Most of the subjects were unemployed (69.5%). There were high percentages of university graduates persons (38%) and persons under the age of 49 (46.45%). Detailed data on the general characteristics are presented in Table 1 (n = 184).

Awareness of CBR was low. A large majority of the subjects (78.6%) were completely unaware of CBR (Table 2).

The percentage of persons who had never visited PHCs was high (50.9%)(Table 3). Among the disabled persons, the frequency of visits to hospitals and clinics for rehabilitation therapy was high among community facility users (57.1%); however PHCs were the least used of the community facilities (3.9%) (Table 4).

Table 1. General characteristics of subjects (n=184)

	Variables	N (%)
Gender	Male	79 (42.7)
	Female	105 (57.3)
Age (years)	49<	85 (46.4)
	50–69	63 (33.9)
	70>	36 (19.6)
marital status	Single	55 (30.0)
	Married	93 (50.6)
	Etc	36 (19.4)
Education	Elementary	50 (27.2)
	Middle/high	64 (34.8)
	University	70 (38)
Economic status	employed	56 (30.5)
	unemployed	128 (60.5)

N: Number.

Table 2. The awareness of CBR with a focus on PHCs (n=184)

Group	Aware	Unaware
N (%)	40 (21.2%)	144 (78.8%)

N: Number.

It was found that demand among participants was high for rehabilitation therapy (4.40 point), aids for transfer (4.14 point), and early checkup (3.98 point) (Table 5).

Generally, if -2 log likelihood indicates the possibility of incidence is high, the model will be suitable. In this study, it was 46.85, indicating that the model was suitable. The value of chi square was 64.436 with 32 degree of freedom. The value of p was 0.001. Thus, the goodness of fit of our model was statistically significant ($p<0.05$).

In logistic analysis of awareness of, and demand for CBR, demands for visiting examinations, guidance on rehabilitation facilities, house remodeling and convenience were statistically significant; Age, education, frequency of visits to public health centers were also statistically significant. The more the demand of visiting examination, demand of convenience goes up by one point, the more awareness increases by 25.43, 36.259 each. The more the demand of guidance of rehabilitation facilities, and house remodeling increases by one point, the more awareness decreases by 0.037, 0.047 each. The more age and education status goes up by one point, the more awareness increases by 41.274, 13.707 each (Table 5).

DISCUSSION

If the CBR program focuses on PHCs, this service can spread widely across the entire country[13]. It is necessary to systemize PHCs to increase flexibility because as the importance of social integration for the disabled increases[17,19–21], physical therapy services are becoming more important in the community[15]. Despite the Korean government's efforts to proliferate CBR use throughout the PHC system, PHC use was shown to be the lowest among

Table 3. The frequency of visits to PHC.

Groups	No visits	Few visits	Sometimes visiting	Often visiting	Very often visiting
Frequency (%)	50.9	26.7	18.6	2.5	1.2

Table 4. The frequency of visits to community facilities for rehabilitation therapy

Facilities	Related Rehabilitation center	Clinic Hospital	General welfare agency	PHCs	Etc
Frequency (%)	32.5	57.1	0.5	3.9	5.9

Table5. The logistic analysis of awareness and demand of CBR

Variables	B	P	Exp (β)	Demand (M ± SD)
Clean home	–0.278	0.802	0.757	3.64 ± 1.26
Wash	–2.606	0.074	0.074	3.54 ± 1.28
Cooking	1.759	0.137	5.807	3.49 ± 1.28
Bath	1.276	0.103	3.583	3.73 ± 1.33
Keep company	–1.637	0.093	0.195	3.66 ± 1.20
Counsel	2.000	0.079	7.389	3.67 ± 1.15
Hobby	1.679	0.103	5.631	3.73 ± 1.09
Beauty service	–0.358	0.703	0.699	3.72 ± 1.14
Errand	0.109	0.928	1.116	3.85 ± 1.23
infant care	–0.989	0.114	0.372	3.20 ± 1.60
Attend a patient	–1.919	0.083	0.147	3.76 ± 1.28
Transfer aids	–1.347	0.231	0.260	4.14 ± 1.28
Visiting examination*	3.236	0.041	25.430	3.68 ± 1.17
Home nursing	2.339	1.144	10.376	3.63 ± 1.22
Early check up	–2.582	0.099	0.076	3.98 ± 1.07
Rehabilitation service	1.197	0.172	3.310	4.40 ± 0.94
Offer job information	2.889	0.146	17.972	3.22 ± 1.42
Information of getting a job	–0.414	0.820	0.661	3.25 ± 1.48
Guidance of rehabilitation facilities*	–3.301	0.043	0.037	3.81 ± 1.27
Counsel or human rights	0.577	0.448	1.781	3.22 ± 1.37
Vocational training	–2.21	0.118	0.120	3.23 ± 1.48
Community functional training	1.168	0.290	3.216	3.38 ± 1.45
Information about education	0.790	0.370	2.204	3.26 ± 1.44
House remodeling*	–3.055	0.015	0.047	3.38 ± 1.48
Convenience*	3.591	0.025	36.259	3.69 ± 1.41
Gender	–2.743	0.173	0.064	
Age*	7.601	0.016	20.873	
Marital status	–2.507	0.102	0.081	
Education*	3.720	0.025	41.274	
Economical status	2.679	0.173	14.571	
Frequency of visits to PHC*	2.618	0.004	13.707	
Frequency of visits to community facilities for rehabilitation therapy	–1.385	0.3061	0.250	
-2 Log likelihood			46.858	
Moder Chi-Square (df/p)			64.436 (32/0.001)	

M ±S D: Mean ± Standard Deviation, * $p<0.05$, df: degree of freedom.
Demand: Score of demand by 5–point Likert scale.

all the rehabilitation facilities[16]. Therefore, this study aimed to identify the awareness of CBR with a focus on PHCs among current patients and discharged patients in the community in order to suggest the future direction of CBR.

A previous study showed that emotional function is significantly associated with the quality of life scale among survivors of traumatic brain injury aged 8–24 years[22]. Furthermore, long-term cognitive, emotional and communicative difficulties have been identified as being on the same scale as persistent physical needs following traumatic brain injury[23]. The need for social intervention was found to be the highest in the early stages after traumatic brain injury[23]. Emotional and cognitive demands are also important[24]. However, Lee et al. noted a prominent

demand for economic aid[26], while Park insisted that health management and ADL aid were the most important requirements[15]. Other studies have shown that the disabled receive ADL assistance from families; therefore, the most necessary forms of aid are rehabilitation training, personal accompaniment, household management, medical visit assistance, and health control and physical care during periods of unconsciousness, in that order[20].

According to Corrigan, demand for improving memory and for problem solving was high after a traumatic brain injury[27]. However, Van Amstel insisted that the disabled and their families are more interested in transport assistance, such as the provision of wheelchairs and artificial limbs[28]. Our study reflects these results: demand for aids for transfer was similarly high[15,20], while demand for information services was low[28].

According to studies by Kwon and Kim[18] and Kwon and Kwon[19], the most common introduction to rehabilitation therapy comes from friends. The large majority of handicapped participants in this study who received medical therapy from local facilities did not know of the rehabilitation services offered by their PHCs. This means that more active promotion of CBR with a focus on PHCs is required.

In our study, hospital and clinic use was the most common, while PHC use was the least among community-dwellers. It supports the finding that patients prefer rehabilitation therapy in rehabilitation centers to PHCs[11].

Jung reported that the most often seen patients at the public health centers were the elderly, and that use of the service correlated positively with age and negatively with education level[29]. According to Kwon and Kim, who conducted a study on patient satisfaction with physical therapy at a health center, satisfaction was influenced by the area of therapy, waiting time and cost[18]. However, Kwon also found a statistically significant correlation with the type of malady experienced by the patient[19]. This study also found that awareness increased with age, like the study of Jung. It supports the finding that old men prefer to visit PHCs because of cost. In contrast to study of Jung, we found that awareness increased with level of education. This means that results differ depending on the subjects and the characteristics of the facilities, instruments of measurement, and methods of analysis. A high proportion of subjects (50.9%) were found to have never used PHC. In addition, awareness increased with visiting rates to PHCs. Thus, if we raise the rate of visits to PHCs, awareness should also increase.

Furthermore, awareness of CBR in PHCs was low (with 78% unaware), and most people used the rehabilitation therapy of hospitals and clinics (57.1%) instead of PHCs (3.9%). This finding shows that low awareness of CBR in PHCs affects demand for rehabilitation therapy in PHCs.

As mentioned above, the need for rehabilitation therapy was highest among community-dwelling handicapped people but the awareness of CBR with a focus on PHCs was low. The reasons for the low awareness of CBR at PHCs might be a lack of promotion, or patients might prefer rehabilitation therapy in rehabilitation centers to PHCs, or people might have some kind of fixed ideas or prejudices about rehabilitation service at PHCs. People who use health centers also use rehabilitation therapy, and the frequency of use of PHCs and prejudice about rehabilitation therapy at PHCs can be improved by more active promotion via brochures and education of health professionals at PHCs and other community rehabilitation facilities.

Recent studies have shown that convenience of location, quality of staff, and procedures of medical care can be primary elements of patient satisfaction that lead to repeat visits[30]. Thus, focus on those elements as well as more active promotion should improve the overall frequency of visits and stimulate the use of rehabilitation services. Also, future research should focus on methods for increasing the visiting rate as well as the reasons for low awareness and the method of promotion.

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