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Relationship Between Factors of Disability Change and Life Satisfaction in the Physically Disabled

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Abstract

This study identified factors that affect changes in disability status and life satisfaction, using data from the first and fifth Panel Survey of Employment for the Disabled and 2,045 survey respondents as study subjects. First, in terms of change in disability status, fixed-fixed group accounted for 52.3%, worsen-worsen group for 19.4%, worsen-fixed group for 19.2%, and fixed-worsen group for 9.1%. The subjects whose disability status remained the same had the highest share, but 28.5% of the respondents viewed their status to have worsened compared to 2008, and 9.1% responded to have even further worsening in recent years. Female disabled subjects reported a change in disability status more often than men. Lower age and higher education level corresponded to a higher percentage in the fixed-fixed group. The percentage of subjects in medium or higher level had the following factors: living in Seoul metropolitan area or in six major cities, no religion, a job, and self-reported socio-economic status. Subjects with a disability that is innate or from an accident had a higher share of the fixed-fixed group. The fixed-fixed group and worsen-fixed group had a higher life satisfaction corresponding to a higher disability grade. The most powerful variable affecting life satisfaction was a change in disability status in the fixed-fixed group.

Keywords: Change in Disability, Life Satisfaction, Longitudinal Study, Panel Survey of Employment for the Disabled, Physically Disabled

1. Introduction

It is estimated that there are 2.68 million disabled persons in Korea, which is a ratio of 561 of 10,000 with the number growing rapidly[1]. Those with physical disabilities account for 28.77 of every 1000 people, up from 22.23 in 2005. Of the 15 types of disabilities defined under the National Act on Welfare of Disabled People, the frequency of physical disability is 4 times higher than the second-ranking disability, which brain lesions appearing in 6.92 people for every 1000 people[1].

Whether a disability is innate or acquired later in life, it impacts various factors of life and in turn affects an individual's satisfaction with life. Experience differs according to context in circumstances involving personal, financial, and social resources; and changes in these resources may affect the level of satisfaction in life[2]. However, studies that focused on life satisfaction of the disabled primarily approached the issue in terms of productivity in employment and availability of jobs[3–8]. Other studies examined social participation and social integration in relation to life satisfaction[9–12]. Financial and social aspects were determined to be important in the lives of disabled individuals. However, there is little information on maintenance, progression, or worsening of disability status and their effect on life satisfaction.

The functional status of physically disabled individuals may improve, worsen, or be maintained and still have a reversible effect. To confirm reversible characteristics, we investigated the intra-individual plasticity, changes, and differences[13]. This study uses data from the first and fifth year of the Panel Survey of Employment for the Disabled to compared the changed status of disability in each individual and confirm intra-individual plasticity; to identify variables

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related to the change in disability status; and to identify the effect of changes in disability status on life satisfaction.

2. Methodology

2.1 Procedures

Data were from the first and fifth year of the Panel Survey of Employment for the Disabled, which is a longitudinal study conducted annually with a panel sample of 5,092 subjects representative of registered disabled people in Korea. From 2008–2012, the survey has studied living status in terms of economic activity, professional capabilities, employment services, job training, income, consumption, and daily life activities. The Panel Survey of Employment for the Disabled collected data using Computer-Assisted Personal Interviewing (CAPI)[14].

This study used data from the 5th survey in 2012, excluding subjects with multiple disabilities. A total of 2,045 physically disabled individuals over the age of 19 and whose disability status had worsened or been maintained were selected as subjects.

2.2 Material

2.2.1 Disability Status

A change in disability status was measured in the 1st survey of 2008 and the 5th survey of 2012 with the question, "What is your disability status at present?" Possible answers were: is improving, remains fixed, and is worsening or is progressing. Those who reported that their status was improving have shown to be minors were excluded. Were they improving and minors? Or improving or minors? Only the answers 'remains fixed' or 'is worsening or progressing' were selected as variables for disability status.

2.2.2 Satisfaction with Life

Overall life satisfaction was a variable measured in the Panel Survey. Respondents were asked to score up to 1–5 in response to the question, "How satisfied are you with overall daily life?"

2.3 Socio-Demographic Characteristics

Socio-demographic characteristics of the subjects showed that 65.0% were male with average age of 54.87 years (Table 1).

High school graduate accounted for largest share in educational background at 36.9%, 62.9% had a spouse, 41.3% lived in metropolitan areas such as Seoul or Gyeonggi, and 59.4% did not state a religion. Economic activity showed a near even split in the ratio of unemployed versus employed, who earned an average monthly income of 1.3889 million won, and 58.8% considered themselves to be in low social economic class. A disability grade of 'light' accounted for 71.4% of respondents and 52.3% acquired their disability from an accident (Table 1).

3. Result

3.1 Change in Disability Status

A majority (52.3%) of physically disabled reported that their status remained fixed from 2008 to 2012. Status worsened in 2008 and continued to worsen in 2012 for 19.4%, status worsened in 2008 but remained fixed in 2012 for 19.2%, and status remained fixed in 2008 but worsened in 2012 for 9.1% (Table 2).

3.2 Factors Related to Change in Disability Status

More female disabled individuals viewed their status to be changing than males (fixed-worsening, worsening-fixed) (Table 3). Some 60% of males viewed their status as fixed for 5 years, and 26.4% of women viewed their status to have continuously worsened, indicating that female disabled experienced more change in disability status and required special care.

Advanced age was associated with a higher degree of worsening status, with 68.3% of disabled younger than 50 years viewing their status as fixed and the highest proportion within this age group. Further, advanced age was associated with a decrease in the number of individuals stating that their status remained the same, with 26.4% of disabled in their 60s or older viewing their status as worsen-worsen.

A higher education level was associated with a higher percentage of fixed status, and a lower education level was associated with a higher percentage of worsen-worsen status. Subjects with a higher education degree accounted for 67.3% in the fixed group and 11.3% in the worsen-worsen group, and those who never enrolled in school comprised 40.5% in the fixed group and 28.7% in the worsen-worsen group.

A larger percentage of disabled persons in the fixed group lived in urban areas such as Seoul or Gyeonggi; and a larger percentage of disabled in the worsen-worsen

Table 1. Socio-demographic characteristics

		N	%	M(SD)
Gender (n=2045)	Male	1330	65.0	–
	Female	715	35.0	
Age (n=2045)	Less than 50 years old	549	26.8	54.87 (9.751)
	50 years old	776	37.9	
	Over the 60 years old	720	35.2	
educational background (n=2045)	Non-education	279	13.6	–
	Elementary School Graduate	596	29.1	
	Middle School Graduate	415	20.3	
	high school graduate	755	36.9	
Marital status (n=2045)	With spouse	1287	62.9	–
	Without spouse	758	25.9	
Residential area (n=2045)	Seoul, Kyunggi-do	686	33.5	–
	6stMetropolitan	515	25.2	
	Other regions	844	41.3	
Religion (n=2045)	Yes	831	40.6	–
	No	1214	59.4	
Economic activity (n=2045)	Employed	968	47.3	–
	Unemployed	1077	52.7	
Average monthly income (n=1450)	Less than 100,0000won	202	33.9	138.89 (94.13)
	Less than 1,000,000–1,500,000won	168	28.2	
	More than 550,000won	225	37.8	
Socio-economic status (n=2045)	Low class	1202	58.8	1.47 (.61)
	Mid-low class	728	35.6	
	Upper-middle class	115	5.6	
Disability grade (n=2045)	severe	584	28.6	–
	mid case	1461	71.4	
Disability cause (n=2045)	Birth and congenital	127	6.2	–
	Disease	770	37.7	
	Accident	1070	52.3	
	Caudate	78	3.8	

Table 2. Changes in the disability status of the physically disabled (N=1038)

		Disability status from 2008		X^2
		Fixed N (%)	worsening N (%)	
Disability status from 2012	Fixed (n=1463)	1070 (52.3)	393 (19.2)	297.946***
	worsening (n=582)	186 (9.1)	396 (19.4)	

*** p<.001

group lived in smaller cities or in rural areas. Only 16.2% of the worsen-worsen group resided in the Seoul metropolitan area, followed by 18.4% in 6 major cities, and 22.5% in other rural areas.

There was a higher percentage of fixed-fixed among disabled without a religion than with religion. In the fixed-fixed group, 61.3% of physically disabled had employment and 44.3% were unemployed.

Those who perceived their socio-economic status to be average or above accounted for a higher percentage in the fixed-fixed group, and those who viewed their socio-economic status to be low comprised a greater share of the worsen-worsen group. The percentage of low-to-medium

economic class and medium-to-high economic class in the fixed-fixed group were 58.1% and 55.7%, respectively. In the low socio-economic class, the share of worsen-worsen was highest at 22.3%.

Those born with disabilities or acquired disabilities through accidents accounted for higher share of fixed-fixed (61.4% and 59.0%, respectively), and those with disabilities acquired from disease or an unknown cause comprised the highest share of worsen-worsen (25.8% and 24.4%, respectively).

3.3 Effect of Change in Disability Status on Life Satisfaction

Disabled persons reporting a status change of fixed-fixed or worsen-fixed had slightly higher satisfaction with life (3.09 points and 3.05 points, respectively) than the fixed-worsen or worsen-worsen group (2.83 points and 2.85 points, respectively). Outlook on life was better for those viewing their disability status as fixed rather than worse (Table 4). A hierarchical regression analysis was con-

Table 3. Factors associated with changes in status with disabilities (N=2,045)

		Disability change				X^2
		Fixed-fixed	Fixed-worsen	Worsen-fixed	Worsen-worsen	
Gender	Male (n=1330)	791(59.5)	107(8.0)	225(16.9)	207(15.6)	80.637***
	Female (n=715)	279(39.0)	79(11.0)	168(23.5)	189(26.4)	
Age	Less than 50(n=549)	375(68.3)	35(6.4)	86(15.7)	53(9.7)	109.353***
	50 (n=776)	408(52.6)	69(8.9)	146(18.8)	153(19.7)	
	Over the 60 (n=720)	287(39.9)	82(11.4)	161(22.4)	190(26.4)	
educational background	Non-education (n=279)	113(40.5)	36(12.9)	50(17.9)	80(28.7)	135.773***
	Elementary School Graduate (n=596)	238(39.9)	72(12.1)	137(23.0)	149(25.0)	
	Middle School Graduate (n=415)	211(50.8)	32(7.7)	90(21.7)	82(19.8)	
	high school graduate (n=755)	508(67.3)	46(6.1)	116(15.4)	85(11.3)	
Marital statusa	With spouse (n=1287)	688(53.5)	115(8.9)	255(19.8)	229(17.8)	6.019
	Without spouse (n=758)	382(50.4)	71(9.4)	138(18.2)	167(22.0)	
Residential area	Seoul, Kyunggi-do (n=686)	366(53.4)	57(8.3)	152(22.2)	111(16.2)	20.418**
	6stMetropolitan (n=515)	292(56.7)	50(9.7)	78(15.1)	95(18.4)	
	Other regions(n=844)	412(48.8)	79(9.4)	163(19.3)	190(22.5)	
Religion	Yes (n=831)	396(47.7)	93(11.2)	165(19.9)	177(21.3)	15.598**
	No (n=1214)	674(55.5)	93(7.7)	228(18.8)	219(18.0)	
Economic activity	Employed (n=968)	593(61.3)	63(6.5)	173(17.9)	139(14.4)	67.094***
	Unemployed (n=1077)	477(44.3)	123(11.4)	220(20.4)	257(23.9)	
Socio-economic status	low(n=1202)	583(48.5)	124(10.3)	227(18.9)	268(22.3)	27.554***
	Mid-low (n=728)	426(58.1)	51(7.0)	146(20.1)	108(14.8)	
	Upper-middle(n=115)	64(55.7)	11(9.6)	20(17.4)	20(17.4)	
Disability grade	severe(n=584)	315(53.9)	59(10.1)	104(17.8)	106(18.2)	2.787
	mid case(n=1461)	755(51.7)	127(8.7)	289(19.8)	290(19.8)	
Disability cause	Birth and congenital (n=127)	78(61.4)	14(11.0)	18(14.2)	17(13.4)	70.871***
	Disease (n=770)	335(43.5)	73(9.5)	163(21.2)	199(25.8)	
	Accident (n=1070)	631(59.0)	86(8.0)	192(17.9)	161(15.0)	
	Caudate (n=78)	26(33.3)	13(16.7)	20(25.6)	19(24.4)	

** p<.01, *** p<.001

ducted to identify factors that affected life satisfaction of the physically disabled (Table 5).

In the first stage, control variables were entered; in the second stage, disability characteristics variables were used; and in the third stage, the disability status change variables were entered. The Durbin-Watson value was 1.751, showing that the variables are interdependent. In the first stage, results showed that the control variables of education, religion, economic activity, spouse, and perceived socio-economic status reflected 20.3% of life satisfaction among the physically disabled. In the second stage, the inclusion of disability grades and duration of disability increased life satisfaction by 0.3%. In the third stage, a change in disability status increased life satisfaction by 1.0%.

All variables totaled a 21.6% increase in life satisfaction for the physically disabled people, with a higher disability grade corresponding to higher life satisfaction among the fixed-fixed group and the worsen-fixed group. With control variables, the fixed-fixed variable had the highest R squared among all disability status changes.

4. Discussion

This study identified factors that affect a change in disability status and life satisfaction, using data from the first and fifth Panel Survey of Employment for the Disabled and 2,045 survey respondents as subjects.

First, in terms of change in disability status, fixed-fixed group accounted for 52.3%, worsen-worsen group for 19.4%, worsen-fixed group for 19.2%, and fixed-worsen group for 9.1%. Individuals whose disability status remained the same accounted for the highest share, but 28.5% of respondents viewed their status to have worsened since 2008 and 9.1% viewed their status as further worsening in recent years.

Table 4. Difference of changes in disability status on life satisfaction

		N	M(SD)	F	Duncan
Disability change	Fixed-fixed	1070	3.09(.663)	18.184***	B
	Fixed-worsen	186	2.83(.707)		A
	Worsen-fixed	393	3.05(.641)		B
	Worsen- worsen	396	2.85(.694)		A

*** p<.001

Table 5. Factors affecting life satisfaction of the physically disabled (N=2045)

Factors		Model I		Model II		Model III	
		β	t	β	t	β	t
(Constant)			23.615***		15.314***		14.079***
Control variables	Gender[a]	–.039	–1.804	–.033	-1.516	–.041	–1.889
	Age	–.013	–.572	–.023	-.990	–.007	–.313
	Education[a]	.072	3.180**	.070	3.091**	.060	2.653**
	Religion[a]	.087	4.273***	.090	4.416***	.095	4.672***
	Economic activity[a]	.172	7.730***	.154	6.667***	.145	6.299***
	Marital status[a]	.139	6.331***	.136	6.179***	.135	6.162***
	Residential area[a]	.031	1.576	.032	1.613	.027	1.332
	Socio-economic status	.262	11.884***	.255	11.513***	.253	11.489***
Disability characteristic	Disability grade			.058	2.714**	.054	2.528*
	Duration of disability[a]			.000	-.019	.001	.062
Disability change	Fixed-fixed					.106	3.857***
	Fixed-worsen					–.017	–.753
	Worsen-fixed					.077	3.064**
	F		64.801***		52.715***		42.942***
	R^2		.203		.206		.216
	R^2 change		.203		.003		.010

*p<0.05, **p<0.01, ***p<0.001

[a]Dummy variables: Gender(1=Male), Education(1=over high school), Religion(1=yes), Economic activity(1=yes), Marital status(1=with spouse), Residential area(1=Seoul, Kyunggi-do), Duration of disability (1=halfway)

Second, female disabled individuals responded with more changes in disability status. The lower age was associated with the higher education level and the higher percentage in the fixed-fixed group. The individuals with following factors had a higher share in the fixed-fixed group: living in the Seoul metropolitan area or in six major cities, having no religion, having a job, having medium or higher self-reported socio-economic status, and having disability that is innate or acquired from an accident.

Third, the fixed-fixed group and worsen-fixed group reported a higher life satisfaction than the fixed-worsen group and worsen-worsen group. Although absolute comparison was difficult, the score obtained in this study was lower than the average score of 3.1 points for life satisfaction in the 2012 survey by the Ministry of Health and Welfare[15]. The fixed-worsen group or worsen-worsen group had even lower scores. This difference may be attributed to this study only including physically disabled people as subjects, and life satisfaction was more thoroughly analyzed in comparison to the change in disability status. Therefore, our results should be considered when identifying individual needs and provisioning tailored services for the physically disabled.

Fourth, when socio-economic factors were controlled, a higher disability grade was associated with higher life satisfaction in the fixed-fixed group and worsen-fixed group. The most powerful variable affecting life satisfaction in the fixed-fixed group was a change in disability status. A high disability grade indicates that the disability is not severe. This was in line with previous studies that suggested life satisfaction was higher with good functional status[3,16]. A higher life satisfaction level in the worsen-fixed and fixed-fixed groups showed that a positive change in disability status or maintenance of the same status had a positive effect on life satisfaction. This indicated that productive aspects such as the employment have an effect on life satisfaction, and uniform service provided without considering a change in disability status may be unsuitable for disabled individuals[17]. Therefore, an expansion of rehabilitation services and development and support for rehabilitation tools to positively change the disability status are highly recommended.

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