

PEOPLE WITH INTELLECTUAL DISABILITIES AND THEIR HEALTH CARE UTILIZATION IN KOREA: A STUDY USING THE KOREA WELFARE PANEL STUDY (KOWEPS)

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Abstract: Empirical studies on health care utilization by people with disabilities are rare in South Korea. There exist even fewer studies that examine health care utilization by people with intellectual disabilities and that compare the health care utilization pattern by this population vs by population with other types of disabilities. This study investigates the characteristics of people with intellectual disabilities (vs those with non-intellectual disabilities) and evaluates the relationship between the presence/absence of intellectual disabilities and health care utilization. The present study analyzed the 2005 and 2016 Korea Welfare Panel Study data. The final sample included observations from these two years that span over the ten-year period. Health care utilization was operationalized by whether the people with disabilities (intellectual and non-intellectual) participated in health screening, how often they received outpatient physician visits, and how long they received inpatients service. To examine the effect of the types of disabilities on health care utilization, random-effects logistic regression and negative binomial regression models were employed. The present study found that people with intellectual disability showed a much lower attendance rate than both people with non-intellectual disabilities and people without disabilities. The percentage of those who received outpatient service experience was higher for people with non-intellectual disabilities than for people with intellectual disabilities. The mean annual number of outpatient visits was greater for people with non-intellectual disabilities than for people

with intellectual disabilities. People with intellectual disabilities also showed a lower rate of inpatient experience compared to those with non-intellectual disabilities. Based on these results, it is suggested that policy-makers should promote fuller access to the use of health care services for people with intellectual disability. In addition, more efforts should be made for people with intellectual disabilities to participate in medical research so that they can express their demands on health-related issues.

Keywords: Intellectual disabilities, Health care, Korea welfare panel study.

Introduction

Are persons with disabilities living a happy life in Korea? The answer to these questions might be to see if they are leading a life free from restrictions in terms of socio-economic, health, housing, and time use characteristics (Campen & Iedema, 2007). The Korean Welfare Law for the Disabled, which was put in effect in 1982, following the United Nations' declaration of 1981 as the International Year of Disabled Persons, defines a person with intellectual disabilities as someone with a permanent delay in mental development or incomplete intellectual development, and who is in considerable difficulty in dealing with his or her work and adjusting to everyday life. These delays in mental development limit them to taking care of their own health.

Though the overall economic income level of the Republic of Korea has increased (e.g., South Korea gnp for 2019 was \$1,743.71B, a 3.62% increase from 2018) and the average life expectancy has also increased (e.g., The current life expectancy for South Korea in 2020 is 83.06 years, a 0.18% increase from 2019. The life expectancy for South Korea in 2019 was 82.92 years, a 0.18% increase from 2018), Jung (2018) reported that people with disabilities face worse health problems than non-disabled people. That weak health conditions tend to develop early chronic diseases and secondary dysfunction compared to non-disabled people. According to Kim et al. (2017), disabled people have lower rates of health care than non-disabled people. This is in contrast to higher rates of health care for non-disabled people, the highly

educated, and high-income people. As such, the gap between underprivileged and privileged people experienced by the disabled regarding access to health care services is constantly recognized as a social problem (Kim et al., 2017).

Existing studies covering the medical status of people with disabilities are mostly focused on access to medical services by people with retardation and brain lesions and those with vision and hearing impairment (Kim et al., 1998; Lee, Kim, & Kang, 2003; Choi & Kim, 2015; Lee & Hong, 2017). After all, people with intellectual disabilities are faced with the fact that access to medical services is weaker compared to people with other types of disabilities as well as non-disabled people. This dual alienation phenomenon is in line with studies of quality of life by disability type (Kim, 2008; Kim, 2002) and with the results of a study in which intellectually disabled and non-disabled people were compared with respect to the quality of life (Oseran, 2006), which claimed that the quality of life is lower for intellectually disabled people than for those with other types of disabilities.

Outside Korea, studies on the intellectually disabled have been conducted (Lee & Hong, 2017; Shogren, Wehmeier, Ress, & O'Hara, 2006). These have studied developing programs and curriculums to promote self-determination of the health, decision-making and medical services for the intellectually disabled. Compared to these overseas studies, the study using KoWeps 2016(which will be presented in the next section) that focused on access to and use of medical services by people with intellectual disabilities is relatively insufficient in Korea. Therefore it is significant to investigate the utilization rate of health care services for people with intellectual disabilities in Korea.

Methodology

Description of Data

This study analyzed the Korea Welfare Panel Study (KoWePS) for two years, i.e., 2005 and 2016 (KoWePS, 2016). I selected these two specific years since the two are the ones where the first and the most recent survey data were gathered. The data come from a nationwide survey containing a range of detailed welfare information of the respondents, including the use of welfare services, economic activity status, financial status, household conditions, and other general characteristics of the participants. This panel survey was conducted jointly by the Korea Institute for Health and Social Affairs (KIHASA) and the Social Welfare Research Center of Seoul National University (KIHASA & SNU, 2016). To better represent the sample of the population that is socio-economically disadvantaged, the survey made use of a stratified double sampling model to ensure that low-income families (who are less than 60% of median income) are over-sampled.

Participants

When pooled across the 2005 and 2016 data, the KoWePS dataset contains a balanced panel of a total of 19,820 individuals. Included in this study are selected sample of adults whose age range from 20 to 64(N=14,098). Individuals that belong to this specific age range were chosen since those who are outside of this age range differ in terms of health care benefits they receive from the Korean government and other related factors from the target sample in this study (Jeon, Kwon, Lee, & Kim, 2015).

Dependent Variables

The focus of this study is to investigate how individuals with intellectual disabilities compared with those with other types of disabilities concerning their health care utilization in a given year. In this study, health care utilizations were operationalized in terms of three key variables, i.e., whether they attended the annual national health screening, how often they used outpatient services, and how long they stayed in hospitals for health-related

problems. Attending health screening is important in that it reflects how early diseases can be detected so that the individuals can be properly treated in a timely manner, ensuring prevention of further mental/physical losses, and, if necessary, intervention with diseases (Ko, Lee, Lee, et al., 2011). The number of outpatient visits (i.e., the sum of outpatients uses) and that of inpatient days (i.e., the sum of inpatient days) are selected as key dependent variables since they are considered as important indicators of the level of one's access to health care system (United Nations, 2006). It needs to be noted here that for the days of outpatient visits, KoWePS counts as one whether a person was treated at the same hospital two or more times for different illnesses. However, when the person visited two separate hospitals, the visits were counted as two. Also, health screening participation, the number of outpatient visits, and the number of hospitalization days were examined.

Independent Variables

The key independent variable in this study was the types of disabilities (i.e., intellectual vs non-intellectual) that individuals have. To begin with, it is necessary to define whether a person has any disabilities. Based on previous studies (Ministry of Health and Welfare Institute for Health and Social Affairs, 2012; Korea Ministry of Health and Welfare Homepage, 2019), in South Korea, a person qualifies as having a disability when they have one or more disabilities defined by the Korea disability registration system. In the case of multiple disabilities, KoWePS recorded the most severe handicap. If the level of severity is identical, respondents were requested to enter the one that poses more difficulty for their life. In addition to disability status, characteristics of individuals, including gender, age, marital status, place of residence, education level, employment status, annual equalized disposable household income, public health insurance type, self-rated health status, and chronic disease status were examined.

Statistical Analyses

Descriptive analyses were conducted for the general characteristics of individuals. I compared the health status and health care utilization of people with vs. without intellectual disabilities. Wald Chi-squared tests were performed to compare categorical variables, such as the percentage of good or excellent ratings for self-rated health, having chronic diseases, and whether the respondents experienced health screenings and received outpatient or inpatient care services. To compare the means for health care utilization days according to whether people had an intellectual disability or not, an unequal variances Welch's t-test was performed.

In estimating the relationship between the presence of intellectual disabilities and health screening participation, I first applied bivariate (unadjusted) random-effects logistic regression analyses. Subsequently, I performed multivariate (adjusted) random-effects logistic regression analyses, including all the covariates. For the relationship between the presence of intellectual disabilities and the number of outpatient visits or the number of hospitalization days, I also performed bivariate random-effects negative binomial regressions and applied multivariate random-effects negative binomial regressions with covariates to adjust for these factors. Sensitivity analyses were conducted to estimate the relationship between the extent of disability and the three dependent variables: health screening participation, the number of outpatient visits, and the number of hospitalization days. I selected the random-effects model to address heteroscedasticity and the time-series correlation in the longitudinal dataset. All analyses were conducted using proper weights to report nationally representative estimates.

Results

Table 1 shows the general properties of the target population. Among the 14,098 observations, the number of people with intellectual disabilities was 70(0.5%) (vs with non-intellectual disabilities 1,380(9.8%)). Among the people with intellectual disabilities, more than 57% were men, and the mean age was approximately 38 (SD:±11.1). The percentage of intellectually disabled people with an education level of high school or higher was 20%. The proportion of

intellectually disabled people whose employment status is unemployed or unpaid family workers was 71.8%. The mean annual equalized household disposable income of this population was 12.5 million KRW (approximately 11,109 USD), and as much as 50% of these people were assisted by the Medical Aid program. To be able to receive this program, the household to which the intellectually disabled people belong must have income that is less than the minimum cost of living per household. Like those with intellectual disabilities, there were more men with non-intellectual disabilities (55.9%). However, compared to those with intellectual disabilities, those with non-intellectual disabilities were more educated (high school or higher: 35.5%), with a lesser proportion being unemployed or unpaid family workers (65%). The household income of those with non-intellectual disabilities was higher (16.2 million KRW) than that of those with intellectual disabilities. The proportion of beneficiaries of the Medical Aid program among the people with non-intellectual disabilities was 22.6%, which was relatively low in proportion compared to people with intellectual disabilities.

Table 1. General characteristics of the study population (wt % = weighted %, *p < 0.05).

		Total wt %	People with intellectual disabilities (n = 70) wt %	People with non- intellectual disabilities (n = 1380) wt %	People without disabilities (n = 12,648) wt %	p values
Gender	Female	55.8	42.9	44.1	57.2	*
	Male	44.2	57.1	55.9	42.8	
Age group (year)	20-29 years	13.3	24.3	3.7	14.3	*
	30-39 years	21.4	28.6	12.0	22.3	
	40-49 years	20.4	28.6	18.8	20.5	
	50-59 years	19.6	14.3	28.4	18.6	
	60-64 years	25.4	4.3	37.0	24.2	
	Age (mean ± SD)	46.7 ± 13.9	38.6 ± 11.1	53.1 ± 11.6	46.1 ± 14.0	*
Place of residence	Seoul	16.7	10.0	14.1	17.1	
	Big 5 metropolitan cities	26.5	27.1	26.7	26.4	

		Total wt %	People with intellectual disabilities (n = 70) wt %	People with non- intellectual disabilities (n = 1380) wt %	People without disabilities (n = 12,648) wt %	<i>p</i> values
	City	34.2	37.1	32.4	34.4	
	County	19.2	21.4	23.7	18.7	
	City-Rural mixture	3.3	4.3	3.2	3.3	
Marital status	Married	73.5	37.1	67.0	74.4	*
	Other	26.5	62.9	33.0	25.6	
Education	Middle school or lower	43.4	80.0	64.5	40.9	*
	High school	31.7	17.1	25.4	32.5	
	College or higher	24.9	2.9	10.1	26.6	
Employment status	Employer, self-employed	16.5	2.6	16.3	16.5	*
	Permanent employee	37.3	25.6	18.7	39.7	

		Total wt %	People with intellectual disabilities (n = 70) wt %	People with non- intellectual disabilities (n = 1380) wt %	People without disabilities (n = 12,648) wt %	<i>p</i> values
	Unpaid family worker	6.9	7.7	4.5	7.1	
	Unemployed	38.9	64.1	60.5	36.7	
Annual equalized household disposable income (mean ± SD)	Annual equalized household disposable income (mean ± SD)	34.5 ± 41.5	20.6 ± 12.6	24.4 ± 30.3	35.6 ± 42.4	*
Public health insurance	National Health Insurance	76.0	50.0	77.4		*
	Medical Aid	24.0	50.0	22.6		

The self-reported health status, length of having chronic diseases, and the types of main diseases of the study population are shown in Table 2. First, 20.0% and 32.9% of people with intellectual disabilities reported that their health status was very poor and poor, respectively. The proportions of those with non-intellectual disabilities reporting their health being very poor and poor were 12.1% and 42.3%, respectively. Therefore, among those with disabilities, those with intellectual disabilities (vs those with non-intellectual disabilities) reported a higher percentage of their health being very poor. The proportion of people with intellectual disability having chronic diseases for more than 6 months was 55.7%. This was lower compared to that of the people with non-intellectual disability (76.8%) but was higher compared to that of the people without disabilities (41.2%). Overall, the proportion of having the five most frequently occurring diseases was relatively lower for people with intellectual disabilities. However, the relative prevalence of stroke and cerebrovascular disease, as well as that of diabetes, was almost the same for people with intellectual (vs non-intellectual) disabilities.

Table 2. Perceived health status and main diseases of the target population (wt % = weighted %, *p < 0.05).

		Total wt %	People with intellectual disabilities (n = 70) wt %	People with non-intellectual disabilities (n = 1380) wt %	People without disabilities (n = 12,648) wt %	p values
Self-rated health	Very poor	3.5	20.0	12.1	2.5	*
	Poor	20.5	32.9	42.3	18.1	
	Fair	20.4	21.4	23.2	20.0	
	Good	42.8	22.9	20.5	45.3	
	Very good	12.8	2.9	1.9	14.1	
Chronic disease	None	51.3	40.0	21.0	54.7	*
	Less than 3 months	2.2	2.9	1.3	2.3	
	3-6 months	1.7	0.0	0.1	1.6	
	More than 6 months	44.8	55.7	76.8	41.2	

Main diseases	Arthritis, back pain, sciatic ache, herniated lumbar disc	10.4	7.1	16.0	9.9	*
	Stroke, cerebrovascular disease	1.6	5.7	7.0	1.0	
	Hypertension	13.8	1.4	18.3	13.4	
	Diabetes	6.3	7.1	9.6	6.0	
	Fracture, dislocation, and/or after-effects of an injury	0.6	0.0	1.6	0.5	

The patterns of annual health care utilization are presented in Table 3. There was a difference in health screenings attendance rate between people with intellectual disability and people with non-intellectual disabilities. People with intellectual disability showed a much lower attendance rate (27.1%) than both people with non-intellectual disabilities (41.7%) and people without disabilities (42.6%). The percentage of those who received outpatient service experience was higher for people with non-intellectual disabilities (92.8%) than for people with intellectual disabilities (78.6%). The mean annual number of outpatient visits was greater for people with non-intellectual disabilities (30.3 visits) than for people with intellectual disabilities (16.1 visits). The latter rate is almost identical to that of people with no disabilities (15.0 visits). People with intellectual disabilities also showed a lower rate of inpatient experience (11.4%) compared to those with non-intellectual disabilities (22.6%). However, when it comes to the number of inpatient days, people with intellectual disabilities (8.4 days) and people with non-intellectual disabilities (9.4 days) were not different. Notwithstanding, people with disabilities stayed for longer periods in hospitals compared to people without disabilities (2.0 days).

Table 3. Patterns of annual health care utilization by the target population (wt % = weighted %, *p < 0.05).

		Total wt %	People with intellectual disabilities (n = 70) wt %	People with non-intellectual disabilities (n = 1380) wt %	People without disabilities (n = 12,648) wt %	p values
Health screening experience	Yes	42.5	27.1	41.7	42.6	*
Outpatient service experience	Yes	82.0	78.6	92.8	80.9	*
Number of outpatient visits	Mean ± SD	16.5 ± 29.0	16.1 ± 25.8	30.3 ± 43.9	15.0 ± 26.5	*
Inpatient experience	Yes	11.4	11.4	22.6	10.2	*
Number of inpatient days	Mean ± SD	2.8 ± 16.2	8.4 ± 38.6	9.4 ± 34.3	2.0 ± 12.3	*

Table 4 reports the result of statistical analyses exploring the relationship between the presence of disabilities and health care utilization. In the adjusted logistic regression model, compared to people with no disabilities, people with intellectual disabilities has significantly lower odds of receiving a health screening (OR = 0.50, 95% CI = 0.29-0.85). However, there was no significant difference in health screening attendance between people with non-intellectual disabilities and without disabilities.

The association between having a disability and the number of outpatient care days varied depending on the types of disabilities. Having an intellectual disability was negatively associated with the number of outpatient care days in the binomial regression model, although this association was not statistically significant. On the contrary, having a non-intellectual disability was significantly positively associated with the same variable ($p < .001$).

Having a disability was negatively related to the number of inpatient days, in both people with intellectual disabilities and non-intellectual disabilities.

Table 4. Estimation results of the association between disabilities and health care utilization (ref = reference, *p < 0.05).

		Whether respondents received health screenings	Number of outpatient visits	Number of inpatient visits
	Independent variable	OR(95% CI)/Adj OR (95% CI)	β (SE)/Adj β (SE)	β (SE)/Adj β (SE)
Key variable (ref = people with no disabilities)	Intellectual disability	0.501* (0.29, 0.85)/0.884*(.782, .998)	-.019(.170)	-1.711(.992)
	Non-intellectual disability	0.961 (0.85, 1.07)/0.846(0.435, 1.647)	.691*(.039)	-.015(.638)
Gender (ref = female)	Male	1.25* (1.17, 1.34)/1.25* (1.17, 1.34)	/-.279*(.021)	/.185(.106)
Age	(Continuous)	1.008(1.006, 1.010)/1.001*(1.006, 1.010)	/.021*(.003)	/-.087*(.048)
Marital status (ref = other)	Married	1.52* (1.41, 1.64)/1.52* (1.41, 1.64)	/.430*(.027)	/.176(.116)
Place of residence (ref = City-Rural mixture)	Seoul	1.13 (0.92, 1.38)/1.13 (0.92, 1.38)	/.029(.068)	/-.289(.295)
	Big 5 metropolitan cities	0.92 (0.75, 1.11)/0.92 (0.75, 1.11)	/.178*(.065)	/.067(.285)
	City	1.05 (0.86, 1.27)/1.05 (0.86, 1.27)	/.053(.065)	/-.164(.280)

		Whether respondents received health screenings	Number of outpatient visits	Number of inpatient visits
	County	1.10 (0.90, 1.35)/1.10 (0.90, 1.35)	/.252* (.066)	/-.033(.287)
Education (ref = middle school or lower)	High school	0.91* (0.84, 0.99)/0.91* (0.84, 0.99)	/-.089*(.027)	/-.194(.135)
	College or higher	1.21* (1.12, 1.32)/1.21* (1.12, 1.32)	/-.129*(.0006)	/-.579*(.158)
Employment status (ref = unemployed)	Employer, self-employed	1.12* (1.01, 1.24)/1.12* (1.01, 1.24)	/-.060*(.0005)	/- 1.464*(0.0019)
	Permanent employee	1.94* (1.79, 2.10)/1.94* (1.79, 2.10)	/-.186*(.0009)	/- .483*(.0026)
	Unpaid family worker	1.25* (1.08, 1.44)/1.25* (1.08, 1.44)	/-.036*(.0004)	/- 2.178*(.0069)
Public health insurance type (ref = National Health Insurance)	Medical Aid	0.65* (0.47, 0.90)/0.65* (0.47, 0.90)	/.021*(.003)	/0.224*(0.008)
Self-rated health (ref = very good)	Good	1.31* (1.18, 1.46)/1.31* (1.18, 1.46)	/.228(.0005)	/-.079 (.162)

		Whether respondents received health screenings	Number of outpatient visits	Number of inpatient visits
	Fair	1.44* (1.27, 1.62)/1.44* (1.27, 1.62)	/.522(.0006)	/.702*(.191)
	Poor	1.28* (1.14, 1.45)/1.28* (1.14, 1.45)	/.974(.0007)	/1.955*(.208)
	Very poor	0.98 (0.80, 1.21)/0.98 (0.80, 1.21)	/1.183(.0013)	/2.999*(.332)
Chronic diseases (ref = none)	Less than 3 months	2.21* (1.75, 2.78)/2.21* (1.75, 2.78)	/.674(.0009)	/1.012*(.337)
	3-6 months	1.78* (1.38, 2.30)/1.78* (1.38, 2.30)	/.934(.0012)	/1.754*(.377)
	More than 6 months	1.49* (1.39, 1.60)/1.49* (1.39, 1.60)	/1.145(.0004)	/1.509*(.102)
Year dummy (ref = 2005)	Year 2016	2.46* (2.30, 2.64)/2.44* (2.30, 2.64)	/.141*(.0004)	/.502*(.112)
	Constant	0.472(,)	/2.58*(.014)	

Discussion

This study explored the health-related characteristics of people with intellectual disabilities in Korea and compared the relationship between the types of disabilities and health care utilization. The present study found that people with intellectual disability showed a much lower attendance rate than both people with non-intellectual disabilities and people without disabilities. The percentage of those who received outpatient service experience was higher for people with non-intellectual disabilities than for people with intellectual disabilities. The mean annual number of outpatient visits was greater for people with non-intellectual disabilities than for people with intellectual disabilities. People with intellectual disabilities also showed a lower rate of inpatient experiences compared to those with non-intellectual disabilities.

By definition, people with intellectual disabilities have a harder time acquiring the ability to care for and protect their health than non-intellectually disabled or non-impaired people. In other words, people with intellectual disabilities lack the possibility to use healthcare-related information. If there are gaps in health promotion activities, access and utilization of the medical health system for those who already have a large gap with the non-intellectually disabled in their health conditions, the intellectually disabled group's health problems are in a serious situation (Lee, 2013). This is in line with the findings that people with intellectual disabilities are less likely to use medical services, generally less satisfied with the quality of medical care and more unsatisfactory than other disability types (Coughlin, et al., 2002; Yoon et al., 2007; Lee, 2013).

Although the health of the intellectually disabled is poor and they have limited ability to take care of their own health, prior research on the medical approach of the disabled is mostly focused on access to medical services for the non-intellectually disabled, including brain lesions, vision and hearing impaired (Kim et al., 1998; Lee, Kim, & Kang, 2003; Choi & Kim, 2015, Lee & Hong, 2017). Fieldman et al. (2014) argued that only 2% of the studies involved people with intellectual disabilities after analyzing 300 medical studies using

RCTs between 2007 and 2011. This shows that people with intellectual disabilities are in poor health overall, and they are also suffering from double difficulties being sidelined in studies dealing with access to medical services, and therefore efforts are required to improve this situation.

Second, people with intellectual disabilities had a shallow attendance rate for health examination compared to those with non-intellectual disabilities and those with disabilities. In the case of non-disabled people, regular medical checkups are used to check their health conditions and prevent future illnesses. As such, medical checkups are important enough to be necessary in modern times. Such medical examinations have a participation rate of less than 30 per cent for people with intellectual disabilities. The Korea National fourth Health Plan (Health Plan, 2020) conducted in 2016 shows that the use of health and medical services by people with intellectual disabilities is not sufficient, compared with the plan to raise the medical checkup rate for the disabled to 67.7 per cent in 2020. The results are also consistent with Lee's (2013) study that people with intellectual disabilities have a great desire for health care and promotion activities but suffer gaps in access to and utilization of health promotion activities or health care systems despite frequent contact with the health care system.

There could exist a number of reasons for the low attendance rate for the checkup by intellectually disabled people. The Korean Ministry of Health and Welfare (MoHW, 2020) reported problems regarding the inconvenience of transportation, lack of convenience facilities, lack of awareness about the financial burden of health checkup, hospital reservation, communication, and lack of facilities because of the slight symptoms due to the lack of awareness of the hospital's health examination. The hospital, a service agency, has been found to have problems such as restrictions on medical examination time and inadequate compensation for medical institutions, budget for setting up facilities for the disabled and lack of manpower. Examination items are suitable for the non-disabled, and examination items based on disability type and characteristics are found to be limited by disabled types. In the U.K., the Health Examination Program in the NHS is promoting cancer screening, and the medical institution operates separate tests for breast, cervical, and colon cancers(). There is no separate examination program for prostate cancer, but

services are provided for selective examination. Among the programs designed for the Australian public, the government is applying a method to increase the test rate by considering the characteristics of each type of disability so that disabled people can benefit from the program().

People with intellectual disabilities may need to be provided with information that can increase the utilization of medical and health services and that can educate or train them. Both 'unavoidable' innate physiological limitations and 'unreasonable' social barriers contribute to this group's health gap, so an integrated and comprehensive approach to a healthy life is needed (Lee, 2013). Here, social barriers include several possibilities in Korea. A shortage of proper public transportation(25), access barriers related to health care institutions(41), and even a lack of qualified health care providers(45) can all contribute to the unreasonable social barriers. The policy direction for enhancing health inequality suggests the level of education as a determinant of social health. The higher the level of education, the better and the more complex techniques for accepting health behaviours. One may argue that if adequate income and adequate medical services are well implemented, the threat of health resulting from low levels of education can be greatly reduced. We can see that state-level policy-making is more important than anything else in order to approach the diseases of the intellectually disabled at a preventive level.

The current results suggest that national policy-making will require, among other things, a status analysis of the disabled health promotion program and the facilities that operate it. We believe that there are limitations to the activities of the intellectually disabled people due to the lack of information related to how many institutions are currently carrying out health promotion programs for intellectually disabled people in Korea and how long it will take to wait for them to participate in (Kim & Jung, 2018).

The European Commission conducted an indicator development study to identify the health status of people with intellectual disabilities in Europe through the PONOMA Project, which was co-hosted by 14 countries. The report cited poor health conditions for people with intellectual disabilities (Horwitz et al., 2000; US Public HealthService, 2001; Fisher, 2004; Oullette-Kuntz,

2005; Krachn, Hammond, & Turner, 2006) and indicated that proper research must be conducted before health can be measured effectively.

Overseas, health-related information provision and communication-related information support further studies for people with intellectual disabilities (Chinn & Homeeyard, 2016; Mastbroek et al., 2014), as well as research on the experience and role of medical staff in health education and medical support for people with intellectual disabilities (Focht-New, 2012). Programs for improving health care and self-help for people with intellectual disabilities are actively being developed. In Korea, there is a pressing need to develop specialized programs to promote the use of health and medical services for people with intellectual disabilities and provide them with proper education (WHO, 2006). Related to this is the report described in WHO (2006), suggesting that even though Korea has a significant number of healthcare experts in the area of mental health, few mental health services are instantiated in the country's primary health care system. This relative lack of instantiation contributes to separating mental health from the general health care system of the country, and in consequence, contributes to the social stigma against mental illness.

Third, it may be argued that the experience of outpatient service should be higher in the case of people with intellectual disabilities than those with non-intellectual or non-impaired and that the number of days of hospitalization should be longer than those with non-disabled people. In the U.K., the government has been pushing for a project to pay a personal health budget related to the disabled since 2012(). In Germany, "medical rehabilitation benefits" are provided to prevent, eliminate, alleviate, compensate, and aggravate chronic diseases and disorders, limit their ability to live and prevent the need to take care of them (MHH, 2016). In the case of Japan, the medical institution provides disability-related inspection tools for the medical examination of the disabled and implements the disabled-related health and medical care project to allow disabled people to receive medical expenses from their residence (National Rehabilitation Center, 2017). Korean government needs to consult these cases in an effort better to meet the needs of intellectually disabled people.

Conclusions

Based on these results, I would like to make the following suggestions. First, to promote access to and use of health care services for the intellectually disabled people, a paradigm shift is required such that intellectually disabled people are recognized as an individual with rights given to the other types of disabled people, away from a defect-centred view of the intellectually disabled as a minority, and to ensure that these values are the basis for policy proposals and support. In addition, various efforts should be made to participate in medical research by people with intellectual disabilities so that they can express their demands on health-related issues related to health services. Second, it is necessary to reflect their characteristics and closely analyze the experience of medical care processes in order to promote the use of health care services by people with intellectual disabilities. Based on this, specialized programs should be developed and distributed so that the intellectually challenged can self-help to self-manage the choice related to their health. In addition, attention should be paid to ensure that continuous education is provided through multidisciplinary collaboration in the field of education and health and medical policy, which allows these programs to be taught during school years. Third, activities are required for people with intellectual disabilities to periodically monitor health inequality and current status and trends for intellectually disabled people. It is time to pay attention to institutional improvements at the national level so that more time and effort can be invested in a healthy life for people with intellectual disabilities who have a high level of deficiency in health care and have difficulty accessing health care information.

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