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## **The Effect of Acute Respiratory Disease Infectious Diseases on the Life Change of People with Developmental Disabilities and Their Families**

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### **Abstract**

*Patients with acute respiratory diseases, such as Middle East Respiratory Syndrome (MERS) due to COVID-19, must wear masks, protective clothing, face shields, and gloves to prevent infection during treatment and performance. Even if it is applied to disabled people, families who protect them are severely mentally tired from severe physical fatigue and stress from exposure to high-risk infectious diseases.*

*As such, the spread of infectious diseases such as respiratory diseases has not only caused difficulties in using existing welfare and medical services but also caused various problems throughout the daily life of disabled people due to the prolonged infectious disease, and its scope is gradually expanding.*

*Therefore, it should not be overlooked that disabled people may experience various difficulties, from the spread of infectious diseases such as respiratory diseases to isolation, diagnosis, and treatment, and it is time to actively assess the life changes felt by families caring for disabled people and consider and research to provide adequate services.*

*According to the survey of disabled people is being conducted in the context of the spread of infectious diseases such as respiratory diseases, while research on the spread of infectious diseases such as respiratory diseases is rare for parents with disabilities.*

*There is a need for additional investigation into the characteristics in other areas of everyday life, including the health field, which is deteriorating through prior research. Therefore, through this survey, the purpose of this study is to investigate the life changes of parents with disabilities in the context of the spread of infectious diseases such as respiratory diseases and to compare and analyze them to find out how parents were affected by each type of disability.*

*It will be used as evidence to identify more necessary needs and problems for parents with disabilities in the spread of infectious diseases such as respiratory diseases and to provide more appropriate health care and welfare services in the future.*

**Keywords:** *The Effect of Acute Respiratory Disease Infectious Diseases, Life Change of People, Developmental Disabilities, Their Families, Stress Disorder, PTSD, Depression and Social Stigma*

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## 1. Introduction

Amid an unusual infectious disease disaster like COVID-19, criticism continues on the problems especially experienced by parents who protect children with disabilities and children with disabilities. There needs to be more discussion about the characteristics of acute respiratory disease disasters. However, the emergence of new acute respiratory diseases such as Middle East Respiratory Syndrome (MERS) and SARS and the outbreak of COVID-19 have shown empirically that respiratory disease infectious disease disasters are not a disaster that can be taken lightly compared to other social disasters because the spread area is vast. Their impact is tremendous (Baek, 2020).

People with disabilities are pointed out as "disaster underdogs" who suffer the most damage or have more difficulty returning to their original lives after disaster damage due to their limited ability to quickly respond to information acquisition, transportation, use of convenience facilities, and communication in emergencies such as infectious diseases such as respiratory diseases (Yoon, 2021).

In addition, these respiratory diseases can worsen existing health conditions, respiratory function, immune system function, heart disease, or diabetes-related health conditions. They can be seriously affected if the medical services that people with disabilities rely on are discontinued or not smooth.

At first glance, life changes caused by infectious diseases, such as respiratory diseases, are something everyone is experiencing in common. However, it should always be noted that the resulting changes and effects may have a more significant impact on the health vulnerable, such as people with disabilities and their families caring for them.

In the "2020 Survey on the Disabled," more than half of the respondents said they had difficulty using medical care (86.1%) and going out (80.4%) in the category of "difficulties in daily life compared to the usual period of the spread of infectious diseases such as respiratory diseases" (Ministry of Health and Welfare, 2020). People with disabilities who have difficulty communicating also have difficulty receiving information related to COVID-19.

According to a survey conducted by the National Human Rights Commission of Korea (2020) on "Life of People with Developmental Disabilities and Their Families in Infectious Diseases such as Respiratory Diseases," the percentage of services provided through institutions or facilities that were not available due to closure and closure reached as low as 62% (developmental rehabilitation services) and as high as 97% (welfare centers for the disabled).

In particular, patients with acute respiratory diseases, such as Middle East Respiratory Syndrome (MERS) due to COVID-19, must wear masks, protective clothing, face shields, and gloves to prevent infection during treatment and performance. Even if it is applied to people with disabilities, families who protect them are severely mentally tired from severe physical fatigue and stress from exposure to high-risk infectious diseases.

As such, the spread of infectious diseases such as respiratory diseases has not only caused difficulties in using existing welfare and medical services but also caused various problems throughout the daily life of disabled people due to the prolonged infectious disease, and its scope is gradually expanding.

Therefore, it should not be overlooked that disabled people may experience various difficulties, from the spread of infectious diseases such as respiratory diseases to isolation, diagnosis, and treatment, and it is time to actively assess the life changes felt by families caring for disabled people and consider and research to provide adequate services.

According to the survey of disabled people (2014), the rate of unmet medical experience was 20.2%, which was high in metropolitan cities, while research on disabled people is being conducted in the context of the

spread of infectious diseases such as respiratory diseases, while research on the spread of infectious diseases such as respiratory diseases is rare for parents with disabilities.

There is a need for additional investigation into the characteristics in other areas of everyday life, including the health field, which is deteriorating through prior research. Therefore, through this survey, the purpose of this study is to investigate the life changes of parents with disabilities in the context of the spread of infectious diseases such as respiratory diseases and to compare and analyze them to find out how parents were affected by each type of disability.

It will be used as evidence to identify more necessary needs and problems for parents with disabilities in the spread of infectious diseases such as respiratory diseases and to provide more appropriate health care and welfare services in the future.

## **2. Research objectives**

This study aims to measure the characteristics, post-traumatic stress disorder, depression, and social stigma of people with developmental disabilities and parents with disabilities in the spread of infectious diseases such as respiratory diseases and to analyze the relationship between these variables.

First, the general characteristics, job characteristics, post-traumatic stress disorder, depression, and social stigma of the subject are identified.

Second, it identifies differences in post-traumatic stress disorder, depression, and social stigma by general characteristics and job characteristics of subjects.

Third, the correlation between the subject's post-traumatic stress disorder, depression, and social stigma is identified.

## **3. Subject of study**

### 1) Research design

This study is a descriptive correlation study to understand the general characteristics of people with developmental disabilities and their parents and the degree of post-traumatic stress disorder, depression, and social stigma in the context of the spread of infectious diseases such as respiratory diseases.

### 2) Subject of study

The subjects of this study were 1,585 parents with children with developmental disabilities in collaboration with the Korean Occupational Therapy Association, and a multi-level stratification extraction method was used according to distinction and population proportional allocation by disability type to confirm the characteristics of each type of disability.

A total of 1,585 people who agreed to participate in the study and agreed to collect and utilize personal information were analyzed, and if it was difficult for the developmental disability or the disabled person to respond, a proxy response from parents or activity supporters was possible.

Throughout the study process, the purpose of the study was explained to the survey participants. The guarantee and confidentiality of the right to decide participation were thoroughly explained, and the survey

was conducted after obtaining consent. The survey was conducted online from March 26, 2021, to April 2, 2021.

### 3) Research tool

#### 1) Post-traumatic stress disorder

As a tool to measure post-traumatic stress disorder, the Korean version of the Event Impact Scale (IES-R-K) was used. IES-R-K consists of a total of 22 items with four factors. The sub-scale consists of 6 questions for perception, six for avoidance, 5 for invasion, and 5 for sleep disorders and emotional paralysis. Eun et al. scored 25 points as a cutting point for IES-R-K after discriminating between the PTSD group and the standard group using the Post-Traumatic Stress Disorder Scale (CAPS) for clinicians.

In addition, it was announced that 17 points or more and 24 points or less can be divided into partial PTSD, and if 25 points or more, the tool is evaluated on a 5-point Likert scale. In previous studies, the tool's reliability was Cronbach's  $\alpha$  .89; in this study, Cronbach's  $\alpha$  value was .93.

#### 2) Depression Scale

The Korean version (CES-D) tool evaluated the subject's depression scale. This tool is the most commonly used research tool for all age groups. It consists of 20 questions and is measured on a 4-point Likert scale. The higher the total measured, the higher the degree of depression, and in previous studies, the tool's reliability was Cronbach's  $\alpha$  .92, and Cronbach's  $\alpha$  value in this study was .95.

#### 3) Social stigma

As a tool to evaluate the subject's social stigma scale, the social stigma measurement tool was modified to suit the subject of this study. This tool consists of 4 questions and is measured on a 4-point Likert scale. The higher the total measured, the more it means that if others know that children with developmental disabilities are being protected from the spread of infectious diseases, such as respiratory diseases, they perceive that they or their families will be excluded or disadvantaged. The reliability of the social stigma measurement tool in previous studies was Cronbach's  $\alpha$  .90, and the  $\alpha$  value in this study was .93.

#### 4) The data collection period

The data collection period for this study was conducted non-face-to-face until April 2, 2021, and the National Association of Parents with Disabilities announced the results of the "Health and Life Survey of Developmental Disabilities and Families in the Spread of Infectious Diseases such as Respiratory Diseases" conducted jointly with Korean occupational therapists on the 8th.

The survey was conducted online from March 26 to April 2, and 1,585 parents with children with developmental disabilities nationwide participated.

After explaining the necessity, purpose, data collection content, benefits and risks of research, encryption and privacy of research data, voluntary participation in research, and freedom of interruption during research, data collection was carried out after voluntary consent from research participants. Regardless of location, the questionnaire was promised to be discarded after completion.

5) How to analyze the data

The collected data were analyzed using the SPSS22 statistical program, and  $p < .05$  was considered significant. The general characteristics, mean, standard deviation, frequency, and percentage of the subjects were analyzed, and based on the analyzed contents, differences in general characteristics, post-traumatic stress, depression, and social stigma were analyzed using Independent t-test and ANOVA, and post-analysis was performed using Scheffé test.

The subjects' post-traumatic stress, depression, and social stigma measurement scores were also analyzed using the mean, standard deviation, frequency, and percentage. In order to understand the correlation between the subject's post-traumatic stress, depression, and social stigma, it was analyzed using Pearson's correlation coefficient.

**4. Results of the study**

1) Changes in the general characteristics of the subject and the life patterns of the developmentally disabled

**Table-1. Changes in the general characteristics of the subject and the life patterns of the developmentally disabled**

	sleep	meal	Urine	Feces	Self-help technology	Self-help technology	External activities	Communication
<b>infectious disease</b>	6.97	7.48	7.43	7.03	6.27	7.45	7.13	5.85
<b>the spread of infectious diseases</b>	4.74	5.99	6.74	6.13	5.46	2.89	2.97	4.49
<b>Degree of change</b>	-2.23	-1.49	-0.69	-0.90	-0.81	-4.56	-4.16	-1.36

Eighty-seven percent of all respondents said, "There have been changes in the lifestyle of people with developmental disabilities," and "I see the most negative changes in external activities."

The 'degree of change by detailed area' in life patterns before and after spreading infectious diseases was examined. As a result, the decrease in external activities (4.56) was the largest, followed by energy dissipation and control (4.16), sleep (2.23), eating (1.49), and communication (1.36).

In response, the Parents' Solidarity explained, "As a measure to prevent the spread of COVID-19 in the region, the government decided to close educational institutions and welfare institutions and recommended physical distancing to refrain from going out, so people with developmental disabilities spend most of their time at home."

Under this government policy, parents are currently taking care of the developmentally disabled at home. In order to measure the stress on him, the Parents' Solidarity surveyed the level of stress experienced by the developmentally disabled and their parents with 10 points of "very severe" and 1 point of "no difficulty at all." As a result, it was revealed that the stress was very high on both sides, with 7.23 points for the developmentally disabled and 7.93 points for the parents.

The Parents' Solidarity said, "87.8% of people with developmental disabilities are expressing stress as a challenging behavior, although there are differences in degree and type." In addition, parents also showed "tired from continuous support and care" (73.7%), "emotional ups and downs have intensified" (48.2%), and

"Sleep is unstable and sometimes dazed" (46.7%) in order "It was found that they were experiencing health difficulties due to support and care for children with developmental disabilities."

In fact, on March 17, a person with a developmental disability and his mother, who were in the blind spot of care due to COVID-19, took their own lives.

In addition, the desire for support was high in the spread of infectious diseases such as respiratory diseases. Along with "providing quarantine supplies such as masks and disinfectants (43.3%)", which is a universal desire for the spread of infectious diseases such as respiratory diseases, 42.2% of "individual and minority education/care support" and 41.9% of "economic support" were surveyed, followed by "expansion of activity support service time" at 27.1%.

Regarding the survey results, the Parents' Solidarity confirmed that "individual or minority education/care support in a safe place in quarantine" is desperately needed rather than transferring the responsibility of supporting the developmentally disabled at home 24 hours a day to parents. If such support is complex, measures to alleviate the added burden on parents by providing "economic support" or "expanding activity support service hours" are urgently required.

**Table 2. Post-traumatic stress disorder, depression, and social stigma according to the characteristics of parents with developmental disabilities**

Variable	Characteristics	Categories	n (%)	PTSD		Depression		Social stigma	
				M±SD	t or F (p)	M±SD	t or F (p)	M±SD	t or F (p)
General characteristic	Age (years)	20-29 a	103 (61.2)	23.77±14.54	0.13 (.877)	17.69±8.98	0.58 (.532)	5.62±2.68	7.31 (.002)
		30-39 b	41 (26.3)	25.23±13.62		15.37±7.8		6.49±3.47	
		40-49 c	17 (12.5)	21.95±12.31				7.21±3.23	a<b,c†
	Education level	College a	11 (9.2)	21.50±18.92	0.91 (.387)	16.50±11.53	0.23 (.761)	5.74±2.61	2.81 (.158)
		Bachelor b	119 (82.8)	27.66±17.52		17.47±8.52		5.92±2.89	
		>Master c	12 (7.0)	34.21±12.63		15.92±5.56			
	Religion	Yes	59 (37.0)	25.28±12.14	0.65 (.468)	17.45±9.03	0.21 (.827)	5.79±2.64	0.06 (.936)
		Non	111 (61.0)	21.41±16.21		17.14±8.40		5.63±2.98	
	Care experience (years)	1~3 a	64 (37.9)	23.95±17.88	0.26 (.768)	17.39±9.41	0.45 (.640)	5.00±1.86	7.43 (.001)
		3~9 b	63 (37.3)	25.38±15.79		17.83±8.40		5.83±2.81	
>10 c		42 (24.8)	26.00±16.85		16.21±7.78		7.10±3.61	a<c †	
Experience of infection disease	Yes	60 (35.5)	26.97±15.77	1.04 (.301)	17.93±9.15	0.75 (.454)	6.30±3.14	1.61 (.109)	
	None	109 (64.5)	24.17±17.32		16.89±8.35		5.57±2.64		

2) Post-traumatic stress disorder, depression, and social stigma according to the characteristics of parents with developmental disabilities. Among the subjects of this study, the average age was 40.89±0.52, with 107 (61.2%) under the age of 30. The number of people who obtained a bachelor's degree was the having no religion with 111 (61.0%) and 109 (64.5%) Experience of infection disease.

Of the total subjects, 111 (61.0%) experienced high-risk infectious diseases in the past, and 60 (35.5%) parents experienced high-risk infectious diseases. As a result of verifying post-traumatic stress disorder according to the general characteristics and job characteristics of the subjects, significant differences were found in parents who experienced high-risk infectious diseases ( $F=2.89$ ,  $p=.037$ ), and the degree of depression was significant in the degree of disability ( $t=2.27$ ,  $p=.024$ ).

As a result of testing the level of social stigma according to the general characteristics and job characteristics of the subject, there were significant age differences ( $F=6.49$ ,  $p=.002$ ), degree of disability ( $t=3.82$ ,  $p<.001$ ), and surrounding conditions ( $F=5.82$ ,  $p=.001$ ).

3) The post-traumatic stress disorder measurement score of the subject's post-traumatic stress disorder, depression, and social stigma was found to be a minimum of 0 and a maximum of 70 points, with an average of  $25.16\pm 16.80$ . Regarding sub-items such as avoidance, invasion, sleep disturbance, and emotional paralysis, the average perception was  $6.11\pm 5.12$  points, the invasive  $7.17\pm 4.31$  points, and the sleep disorder and emotional paralysis were  $5.15\pm 3.6$  points.

In the previous study, 83 subjects (49.1%) had a score of 25 or higher, a cutting point indicating post-traumatic stress disorder, and 25 subjects (14.8%) had a score of 17 or higher and less than 25 points indicating partial post-traumatic stress disorder.

The subject's depression measurement score showed a minimum of 0 and a maximum of 52 points, and an average of  $17.26\pm 8.63$  points, and 84 subjects (49.7%) had a score of 16 or higher, which is a cutting point indicating the clinical depression stage in the previous study. As a result of measuring social stigma, a maximum of 16 points came out from a minimum of 4 points, and an average of  $5.83\pm 2.84$  points were measured.

3) Correlation between subjects' post-traumatic stress disorder, depression, and social stigma

There was a positive correlation between the subject's post-traumatic stress disorder and depression ( $r=.70$ ,  $p<.001$ ), and there was also a positive correlation between post-traumatic stress disorder and social stigma ( $r=.22$ ,  $p<.004$ ).

## **5. conclusion**

This study identifies post-traumatic stress disorder, depression, and social stigma due to infectious diseases such as respiratory diseases and how developmental disabilities and their parents affect general characteristics and various mental health problems.

It is a descriptive correlation study to determine whether or not.

In this study, the degree of post-traumatic stress disorder, depression, and social stigma for infectious diseases such as respiratory diseases showed higher scores than those of SARS and MERS in the past. It was higher than that of parents with developmental disabilities in other countries.

Among the general characteristics, age, child, and type of residence were associated with these mental health problems. In addition, since there is a correlation between post-traumatic stress disorder, depression, and social stigma in the subjects, stress, and mental health problems should be evaluated and managed in an integrated manner, not as a single individual problem.

The results of this study show that infectious diseases such as respiratory diseases cause more severe stress and mental health problems than any other infectious diseases in the past, and infectious diseases such as respiratory diseases eventually provide stress directly to the developmentally disabled and their parents, so active follow-up measures such as mental health assessments and psychological counseling should be prepared and provided.

This study suggests that since a study on stress, mental health, and psychological problems should be conducted on 1,585 parents with children with developmental disabilities in 2021 in collaboration with the Korean Association of Occupational Therapy, it should be conducted on stress, mental health, and psychological problems for multicenter, various medical departments, and the general public in the future.

## REFERENCES

- [1] Kwon DH, Hwang J, Cho YW, Song ML, Kim KT. The mental health and sleep quality of the medical staff at a hub-hospital against COVID-19 ,in South Korea. *Journal of Sleep Medicine*. 2020;17(1):93-7.
- [2] J. H. Kim, A Study on the Experience of Deinstitutionalization by People with Developmental Disabilities, Pusan National University, Department of Social Welfare, 2021.
- [3] J. H. Kim, A Research of Recognition for Deinstitutionalization and Independent Living of the Disabled Living in Residential Facilities for the People of Family In accordance with the Enactment Deinstitutionalization of Disabled, *The Journal of the Korea Contents Association*, 29(10), 2019.
- [4] Kim HJ, Park HR. Factors affecting post-traumatic stress of general after the epidemic of Middle East Respiratory Syndrome infection. *Journal of Korean Clinical Research*. 2017;23(2):
- [5] Choi JS, Kim JS. Factors influencing emergency nurses' ethical problems during the outbreak of MERS-CoV. 2018;25(3):335-45
- [6] Han, K., A Study of Acetic Acid Formation in Escherichia coli Fermentation, Ph.D. Thesis. University of California, Irvine, CA, USA., 2010.
- [7] Prudden, J. F., Method and agent for treating inflammatory disorders of the gastrointestinal tract. *US Patent* 4,006,224, 2007
- [8] The Institute of Internet, Broadcasting and Communication, Submission of manuscript. <http://www.iibc.kr>.
- [9] Ramaci T, Barattucci M, Ledda C, Rapisarda V. Social stigma during COVID-19 and its impact on HCWs outcomes. *Sustainability*. 2020; 12(9):1-13
- [10] Song CJ. Mechanisms and treatment of posttraumatic stress disorder. *Dongguk Journal of Medicine*. 2004;11:102-12.