

Analysis of involuntary admissions in Korea through the admission management information system



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ABSTRACT

The Mental Health Promotion and Welfare Act, revised in 2016, tightened the involuntary admission regulations and processes, such as reporting involuntary admission within 3 days of admission, secondary diagnosis within 2 weeks, and admission suitability evaluation within 1 month, to improve the human rights of the mentally handicapped. The Admission Management Information System (AMIS) was also developed in 2017 to support these procedures and manage patients who were involuntarily admitted to the hospital.

We analyzed 34,685 cases of involuntary admission registered in the AMIS between July 2017 and June 2018. The general characteristics, diagnosis, admission hospital, admission type, age, and admission duration were examined, and diagnoses and the length of stay per hospital were analyzed.

Among the research subjects, 62.8% were male and 37.2% were female. A total of 70.8% had medical insurance and 28.5% had medical aid. A total of 67.8% of patients received secondary diagnosis by a psychiatrist who worked for a public or designated institution, 24.6% received secondary diagnosis by a psychiatrist who worked for the same institution as the primary psychiatrist, and 8.4% received primary diagnosis by a psychiatrist who admitted the patient. For diagnosis, F2 code was the most common at 38.1%, followed by F1 code at 29.1% and F3 code at 17.9%. For cases with only a primary diagnosis, F1 code diagnosis was the most common at 37.6%. For types of hospitalization, and admission by legal guardians was the most common at 93.2%, while administrative admission was at 6.7% and admission by legal guardians to a long-term care facility was at 0.1%. The average length of hospitalization duration was 74.4 days. A stay between 31 and 90 days was the most common (39.3%), and hospital stay of < 14 days was at 16.6%. The number of involuntary admissions for every 100,000 people was 67 cases on average, and this number was the highest in the South Gyeongsang Province, at 105.8 cases. Length of stay by diagnosis was the longest for F7 code (118 days), followed by F1 code (91 days). Patients older than 60 years constituted 31.7% of the total sample, and those younger than 20 years showed the highest proportion in patients with diagnoses from F4 to F9 code.

Analyzing the involuntary admissions registered on the AMIS for 1 year revealed various information, such as the type of admission, sex, age, diagnosis, region, and admitted hospital. These results could be used to improve involuntary admission policies and mental health systems.

1. Introduction

Although many people with mental illness worldwide recognize the need for treatment and are voluntarily hospitalized, many others are still involuntarily hospitalized against their will (Jacobsen, 2012). Among the types of involuntary admissions defined by the Mental Health Act enacted in 1995 (Ministry of Health and Welfare, 1995), admission by legal guardians does not guarantee the rights to self-determination and procedural rights of people with mental illness. Admission by legal guardians is that requested by family members and is

allowed with the diagnosis of one psychiatrist, but has been criticized as violating human rights. Therefore, the unconstitutionality of involuntary admission policy was publicly debated in the Constitutional Court, whereby the measures and procedures to prevent violation of personal autonomy and abuse of the people with mental illness were determined to be insufficient (Kim et al., 2018). The Constitutional Court ruled the constitutional inconsistency of the Mental Health Act in September 2016 (Constitutional Court of Korea, 2016).

To address the problems associated with these involuntary admissions, the government submitted the "Act on the Promotion of Mental

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Table 1
General statistics of involuntary admission.

Variable	(N = 34,685)	
	N	%
Sex	Male	21,771 62.8
	Female	12,914 37.2
MedicalCoverage	Medical insurance	24,561 70.8
	Medical aid	9907 28.5
	Others	217 0.6
Type of diagnosis	Primary diagnosis by the psychiatrist who admitted the patient	2905 8.4
	Secondary diagnosis by a psychiatrist who works for the same institution	8539 24.6
	Secondary diagnosis by a psychiatrist who works for a public or designated institution	23,241 67.0
Diagnosis(ICD-10)	(F00-F09) Organic, including symptomatic mental disorders	2668 7.7
	(F10-F19) Mental and behavioral disorders due to psychoactive substance use	10,109 29.1
	(F20-F29) Schizophrenia and schizotypal and delusional disorders	13,229 38.1
	(F30-F39) Mood (affective) disorders	6196 17.9
	(F40-F49) Neurotic, stress-related, and somatoform disorders	176 0.5
	(F50-F59) Behavioral syndromes associated with physiological disturbances and physical factors	35 0.1
	(F60-F69) Disorders of adult personality and behavior	285 0.8
	(F70-F79) Mental retardation	1449 4.2
	(F80-F89) Disorders of psychological development	234 0.7
	(F90-F98) Behavioral and emotional disorders with onset usually occurring in childhood and adolescence	292 0.8
	(F99) Unspecified mental disorder	12 0.0
Type of admitted institution	Superior general hospitals	2319 6.7
	General hospitals	2188 6.3
	Mental hospitals	17,597 50.7
	Medical clinic	644 1.9
	Long-term care hospital	11,877 34.2
	Long-term care facility (mental health asylum)	60 0.2
Type of admitted hospital(Form of establishment)	National and public hospital	4372 12.6
	Private hospital	30,313 87.4
Type of hospitalization	Admission by legal guardians at hospital	32,330 93.2
	Admission by legal guardians at long-term care facility	43 0.1
	Administrative admission by special self-governing city mayor, special self-governing province governor, or head of District	2312 6.7
Duration of hospitalization (days)	≤ 14	5772 16.6
	15–30	6300 18.2
	31–90	13,633 39.3
	91–180	5397 15.6
	≥ 181	3583 10.3

Table 2
Involuntary admission by city and state (by national registration population on December 31, 2017).

Variable	N	%	Per 100,000 people
LocalGovernment			
Seoul City	4370	12.6	44.3
Busan City	1780	5.1	51.3
Daegu City	1743	5.0	70.4
Incheon City	2619	7.6	88.8
Gwangju City	974	2.8	66.5
Daejeon City	756	2.2	50.3
Ulsan City	711	2.0	61.0
Sejong City	14	0.0	5.0
Gyeonggi Province	9049	26.1	70.3
Gangwon Province	647	1.9	41.7
North Chungcheong Province	1417	4.1	88.9
South Chungcheong Province	1483	4.3	70.1
North Jeolla Province	1418	4.1	76.5
South Jeolla Province	1558	4.5	82.2
North Gyeongsang Province	2407	6.9	89.4
South Gyeongsang Province	3552	10.2	105.1
Jeju Province	187	0.5	28.5

Health and the Support for Welfare Services for Mental Patients” (hereafter referred to as the “Mental Health Promotion and Welfare Act”) to the National Assembly, which was reviewed and passed at the plenary session of the National Assembly in May 2016. The Mental

Health Promotion and Welfare Act has been enacted and implemented since May 30, 2017 (Ministry of Health and Welfare, 2016). The main change in this revision is the narrower scope of defining a person with mental illness as “a someone who is limited in independent living due to delusion, hallucination, thought and mood disorder etc.” The other changes were made to reduce the discrimination and biases towards the people with mental illness, strengthen the requirements for involuntary admission to improve human rights of the people with mental illness, expand the welfare service provided to the people with mental illness, and form the basis of mental health services provided to all citizens.

Mental Health Promotion and Welfare Act categorizes hospitalizations into five types, including voluntary admission, consented admission, emergency admission, and two types of involuntary admissions, which are admission by legal guardians and administrative admission (admission by Mayor, Governor, or Head of district). Admission by legal guardians requires the consent of two guardians and a diagnosis from a psychiatrist. The admission is possible when the patient has a mental disorder which necessitates hospitalization in a mental institution or long-term care facility and leads to risks of harming oneself or others. The diagnostic admission duration is set at two weeks. To extend the treatment for more than two weeks, a consistent opinion of two psychiatrists from different institutions or exceptional cases from the same institution by the designation following approval by ministry of health and welfare is needed. Moreover, involuntary admission duration of up to 6 months was previously allowed, but this was shortened to a maximum of 3 months in the revised Act. The requirements for involuntary admissions, such as the existence of a mental illness, necessity of treatment, and the existence of harm to oneself and others, are different for each country (Feiring and Ugstad, 2014; Zhang et al., 2015). Laws

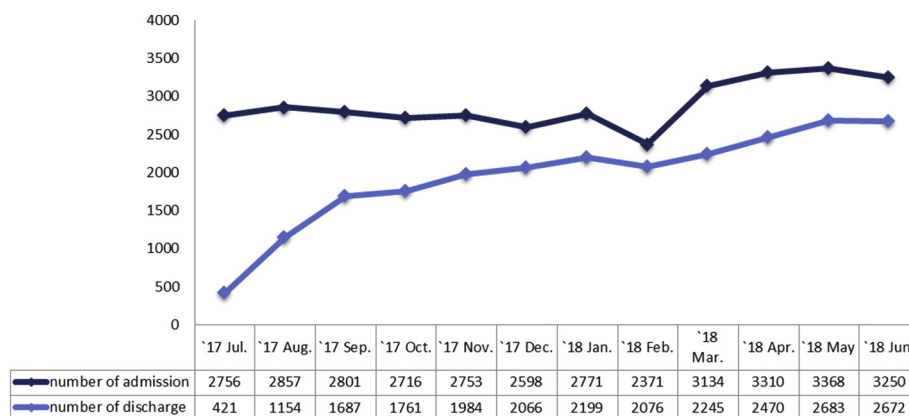


Fig. 1. Monthly cases of involuntary and admission and discharge.

on involuntary admission are based on the assumption that the patient cannot recognize the need for hospitalization treatment due to severe and generally acute symptoms. This also implies that, after the acute phase, the patient accepts that involuntary admission was the appropriate intervention at the time (Priebe et al., 2010).

At the time of the Mental Health Promotion and Welfare Act was amended, the Admission Suitability Review Board was newly established. This is an independent institution placed in the National Mental Hospital. In the case of an involuntary admission, a patient should receive an evaluation from the review board within one month of the initial admission. For this, the investigator interviews the patient face-to-face and listens to their opinions about the reasons for their involuntary admission. The review board endeavors to obtain a good procedural validity and multidimensional evaluation derived from the input from a wide range of experts (psychiatrists, lawyers, those who recovered from mental illness and their families, mental health professionals, government workers, and human rights professionals).

The process of involuntary admission requires an information support system for the systemic management at the national level. The Admission Management Information System (AMIS) was therefore developed by the National Center for Mental Health under the Ministry of Health and Welfare, Republic of Korea. Stepwise establishment of the system has been actualized since May 2017, the date of the enforcement of the revised Mental Health Act (Ministry of Health and Welfare, 2017).

This study was conducted to overview the current status of involuntary admission and to develop future involuntary admission policies and mental health welfare systems of Republic of Korea. To this aim, we analyzed data on involuntary admissions, including admission by legal guardian and administrative admission by order of the mayor and governor, using registered AMIS data.

The present study was approved by the Institutional Review Board of the National Center for Mental Health (IRB 116271–2018-19) including Ethical aspect.

2. Material and methods

The present study analyzed 34,685 cases of involuntary admission registered in the AMIS between July 1, 2017, and June 30, 2018. AMIS has three sections for its data management. Section I includes primary hospital's general information where the patient admitted with a primary psychiatrist's name and contacting number for the secondary psychiatrist's confirmation of diagnosis. Section II has information regarding patient's information covering identification number, medical insurance coverage, type of admission, current psychiatric symptoms and diagnosis, and other physical disorder. Section III has information of families and guardian's name, identification number, relationship with patient, address and contacting number.

Data analyses were conducted using the statistical program SPSS 20.0. The general characteristics of the involuntary admission patients were examined using frequencies and percentages. To examine the differences in types of diagnoses, types of admitted hospitals, and age group by diagnoses of involuntary admission patients, we conducted Chi-squared tests. Subsequently, a one-way analysis of variance (ANOVA) was used to examine the differences in length of stay by diagnoses and types of admitted hospitals. The Least Significant Difference test was used for post-hoc analyses.

3. Results

The general characteristics of the subjects are as shown in Table 1. There were significantly more male subjects than female subjects (62.8% vs. 37.2%). For the type of medical coverage, most subjects had Medical Insurance (70.8%) while 28.5% had Medical Aid. 67.8% of patients received a secondary diagnosis by a psychiatrist from a public or designated institution, 24.6% by another psychiatrist who worked for the same institution, and 8.4% by a psychiatrist who admitted the patient. Schizophrenia spectrum disorders (F20-F29) were the most common at 38.1%, followed by substance use disorder (F10-F19) at 29.1% and mood disorders (F30-F39) at 17.9%. About 50.6% of patients were admitted to hospitals, 34.2% to long-term care hospitals, 13% to general hospitals. Among these, private hospitals (87.4%) were much more common than national and public hospitals (12.6%). For the type of hospitalization, protective hospitalization was the most common, at 93.2%, followed by administrative admission at 6.7%.

Examination of the total duration of involuntary admission revealed that 31–90 days was the most common duration (39.3%) and < 14 days was at 16.6%.

The frequency and distribution of Involuntary Admission by the city and province are shown in Table 2. The number of admissions was the highest in Gyeonggi Province. However, when the number of involuntary admissions was calculated per 100,000 residents in the region, South Gyeongsang Province region had the highest number of involuntary admissions at 105.8 cases.

The number of involuntary admission cases by month showed a gradually decreasing trend between August 2017 and February 2018, but it increased again from March 2018 (Fig. 1). Discharge steadily increased from July 2017 to June 2018.

The number of admissions by diagnosis (primary and secondary diagnoses), hospital, and age are shown in Table 3. The cross-analysis results showed that there was a difference in diagnosis on admission. F4 and F5 code were proportionally higher for patients with only a primary diagnosis without secondary diagnosis.

Patients admitted to the mental hospitals and clinics were the largest of 52.6%. There was a difference in the distribution of admitted hospitals according to diagnosis. For F3, F4, and F9 code, the

Table 3
Diagnosis, hospital, and age by psychiatric diagnosis of involuntary admission.
(Unit: number of involuntary admissions(%))

	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9	P99	Total	χ^2 (p)
Diagnoses													
Primary diagnoses only	297 (11.1)	1093 (10.8)	632 (4.8)	671 (10.8)	41 (23.3)	7 (20)	29 (10.2)	69 (4.8)	22 (9.4)	42 (14.4)	2 (16.7)	2905 (8.4)	474.646 (0.000)
Secondary diagnoses	2371 (88.9)	9016 (89.2)	12,597 (95.2)	5525 (89.2)	135 (76.7)	28 (80)	256 (89.8)	1380 (95.2)	212 (90.6)	250 (85.6)	10 (83.3)	31,780 (91.6)	
Total	2668 (100)	10,109 (100)	13,229 (100)	6196 (100)	176 (100)	35 (100)	285 (100)	1449 (100)	234 (100)	292 (100)	12 (100)	34,685 (100)	
Hospital													
General hospital	346 (13)	305 (3)	1785 (13.5)	1720 (27.8)	70 (39.8)	26 (74.3)	37 (13)	102 (7)	36 (15.4)	79 (27.1)	1 (8.3)	4507 (13)	2771.745 (0.000)
Mental hospital and clinic	1501 (56.3)	5308 (52.5)	7128 (53.9)	2889 (46.6)	67 (38.1)	3 (8.6)	154 (54)	872 (60.2)	152 (65)	163 (55.8)	4 (33.3)	18,241 (52.6)	
Long-term care hospital	817 (30.6)	4494 (44.5)	4271 (32.3)	1585 (25.6)	39 (22.2)	6 (17.1)	94 (33)	468 (32.3)	46 (19.7)	50 (17.1)	7 (58.3)	11,877 (34.2)	
Long-term care facility	4 (0.1)	2 (0)	45 (0.3)	2 (0)	0 (0)	0 (0)	0 (0)	7 (0.5)	0	0 (0)	0 (0)	60 (0.2)	
Age													
Total	2668 (100)	10,109 (100)	13,229 (100)	6196 (100)	176 (100)	35 (100)	285 (100)	1449 (100)	234 (100)	292 (100)	12 (100)	34,685 (100)	
~29	49 (1.8)	158 (1.6)	1597 (12.1)	1530 (24.7)	99 (56.2)	26 (74.3)	128 (44.9)	552 (38.1)	180 (76.9)	286 (97.9)	4 (33.3)	4609 (13.3)	10,977.217 (0.000)
30~39	67 (2.5)	641 (6.3)	2021 (15.3)	943 (15.2)	27 (15.3)	3 (8.6)	47 (16.5)	346 (23.9)	44 (18.8)	1 (0.3)	3 (25)	4143 (11.9)	
40~49	118 (4.4)	1827 (18.1)	3078 (23.3)	1131 (18.3)	10 (5.7)	3 (8.6)	33 (11.6)	277 (19.1)	8 (3.4)	3 (1)	1 (8.3)	6489 (18.7)	
50~59	293 (11)	3243 (32.1)	3540 (26.8)	1173 (18.9)	9 (5.1)	2 (5.7)	25 (8.8)	162 (11.2)	0 (0)	2 (0.7)	3 (25)	8452 (24.4)	
60~	2141 (80.2)	4240 (41.9)	2993 (22.6)	1419 (22.9)	31 (17.6)	1 (2.9)	52 (18.2)	112 (7.7)	2 (0.9)	0 (0)	1 (8.3)	10,992 (31.7)	
Total	2668 (100)	10,109 (100)	13,229 (100)	6196 (100)	176 (100)	35 (100)	285 (100)	1449 (100)	234 (100)	292 (100)	12 (100)	34,685 (100)	

proportion of involuntary admission patients was the highest in mental hospitals and clinics. But F5 code patients were highest in general hospitals, followed by long-term care hospitals, mental hospitals and clinics, and long-term care facilities, which indicates a difference in the admitted hospitals by diagnosis.

Among the total number of admission cases, over 60s was the largest of 31.7%. There were also differences in the distribution of age by diagnosis. Patients with F0 and F1 code were highest among over 60s and Patients with F3 code were highest among 50s, at 26.8%. In contrast, patients diagnosed as F4 to F9 code were highest among 20s or younger.

An ANOVA was conducted to examine the differences in the hospital stay duration according to diagnosis (Table 4). Patients with a diagnosis of F7 code had the longest stay duration as 118 days. An LSD post-hoc analysis showed that patients diagnosed as F0 code had significantly shorter stay duration than those with F2 and F7 code, and had significantly longer stay duration than all other diagnoses.

Another ANOVA revealed a significant main effect of the type of admitted hospital on stay duration (Table 5). The LSD post-hoc analysis showed that general hospitals had a significantly shorter stay duration compared to all other admitted hospitals. Moreover, long-term care facilities had significantly longer stay duration than long-term care hospitals.

4. Discussion

Information about a country's involuntary admissions of patients with mental illness can generally be assumed to reflect the country's Mental Health Act or related laws. Involuntary admission and treatment have generally been considered a necessary procedure for the safety of patients, the people around them, and society at large (Ministry of Health and Welfare, 2017). However, this process still involves complex and controversial ethical and legal issues, and it is difficult to strike a balance between patient rights and public safety (Zhang et al., 2015). The family's involvement in involuntary admission in Asian societies, such as Korea, Taiwan, China, and Japan, seems to be very different from societies in the West, in which patients make their own decisions (Bola et al., 2011; Wang et al., 2015). This might reflect the tendency for Asian people to view the family as a collective unit and such tendency for a more collectivistic approach towards mental health are also apparent in Asian expatriate committees (Lin and Cheung, 1999). This cultural perspective might also underlie the revised Mental Health Act's policy for protective hospitalization.

Involuntary admissions were more often reported for men, at 62.8%, than women, at 37.2%. This is in concordance with findings from many European countries such as Belgium, France, Luxembourg, and the Netherlands, whereas a similar proportion of men and women has been reported in Denmark and Great Britain (Salize and Dressing, 2004). In general, there are three main criteria that are used to decide upon involuntary admission, as follows: 1) the existence of a mental illness, 2) necessity for treatment, and 3) a danger to oneself and to others. The combination of these three factors differs among countries (Zhang et al., 2015). In Japan, the two types of involuntary admissions are protective hospitalization (when criteria 1 and 2 are met) and administrative admission (when criteria 1 and 3 are met) (Nakatani, 2000). In China, a patient is eligible for involuntary admission if has the history or potential of self-harm or harming others (Ding, 2014). A relatively small number of countries other than Korea, such as Norway, Canada, and Taiwan, require all three criteria to be met before involuntary admission (Zhang et al., 2015). Patients in their 50s commonly had a diagnosis of F2 code and those in their 60s a diagnosis of F3 code, but patients in their 20s more commonly had a diagnosis of F3 to F9 code; this shows that the criterion for harm to oneself or others is related. This is similar to reports in countries other than Korea that there is a high proportion of young adults among patients receiving mental health hospitalization treatment (Audini and Lelliott, 2002;

Table 4
Hospital stay duration according to diagnosis.

	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9	F99	F	p
Hospital stay in days (avg ± SD)	78 ± 82	64 ± 64	91 ± 84	49 ± 51	37 ± 45	38 ± 40	62 ± 67	118 ± 102	82 ± 89	44 ± 41	31 ± 34	225.934	0.000

Table 5
Hospital stay duration according to hospital type.

	General hospital	Mental hospital and clinic	Long-term care hospital	Long-term care facility	F	p
Hospital stay in days (avg ± SD)	42 ± 49	78 ± 76	81 ± 81	116 ± 103	338.127	0.000

Thompson et al., 2004) and that there is a high proportion of young male adults in involuntary admission cases (Lelliott and Audini, 2003; Weich et al., 2014).

Regarding the distribution of involuntary admissions by diagnosis, F2, F1, and F3 code were the most common, in that order. This is similar with trends seen in Belgium, Finland, and France (Nakatani, 2000). In many countries, schizophrenia spectrum disorders mostly comprise of involuntary admission cases (Gilhooley et al., 2017; Salize and Dressing, 2004).

By region, the number of involuntary admissions was the highest in the order of Gyeonggi Province, Seoul City, North Gyeongsang Province, and Incheon City. The highest number of hospital units by region was in the order of Gyeonggi Province (18,580 hospital units), South Gyeongsang Province (11,321 hospital units), North Gyeongsang Province (9948 hospital units), South Chungcheong Province (7186 hospital units), and Seoul City (6070 hospital units), which shows that the number of mental health hospital units and the number of involuntary admission cases are not related (National Center for Mental Health, 2017a).

When calculating the number of involuntary admission cases per 100,000 residents (Korean Statistical Information Service, 2017), we found that South Gyeongsang Province had the highest number, at 105 cases. The number of involuntary admissions gradually increased from 117 in 2000 to 132 in 2006, making 92% of the total (Bola et al., 2011). Compared those between 2000 and 2006, the number of involuntary admissions decreased drastically between 2017 and 2018. In other countries, Finland has 218, Germany has 175, Austria has 175, and Austria has 114 per 100,000 population; in comparison, Portugal has 6, France has 11, and Hong Kong has 38 (Lee et al., 2016; Salize and Dressing, 2004). These differences in the proportion of involuntary admissions are also seen between regions within the same country (Dressing and Salize, 2004; Zinkler and Priebe, 2002). Socioeconomic differences between regions and the differences in ethnic group also contribute to this difference (Audini and Lelliott, 2002; Weich et al., 2014).

In the revised Mental Health Act, there is a maximum of two weeks of diagnostic admission. After admission, the condition of the patient is assessed according to the primary diagnosis from the psychiatrist, and a diagnosis from a second psychiatrist is needed if an extension beyond two weeks of admission is necessary. We found that 8.4% of all admissions only had a primary diagnosis. Among the total 2905 cases, the most common diagnosis was F1 code at 1093 cases (37.6%).

Concerning the stay duration in mental health institutions and long-term facilities in Korea, a previous study showed that 11.4% stayed for < 1 month, 15.2% stayed for between 1 and 3 months, 14.1% stayed for between 3 and 6 months, 13.7% stayed for between 6 months and 1 year, and 20.4% stayed for 1–3 years (National Center for Mental Health, 2017b). We found that 74.1% of our sample had an involuntary admission duration within 90 days, which is the maximum possible duration of involuntary admission defined by the revised Mental Health Act; this is drastically higher than the 15.6% with an admission

duration of 3 to 6 months. This indicates a decreasing of the duration of admission and is thought to be a result of the revised law.

We found that mental hospital clinics were common for patients with a diagnosis of F1 and F2, but general and superior general hospitals were more common for those with a diagnosis of F3, at 27.8%. This indicates that people with bipolar disorder (manic or depressive episodes) among mood disorders prefer being admitted to general hospitals, whereas more chronic psychiatric patients with psychosis or schizophrenia spectrum disorders were admitted to mental hospitals.

The length of stay was the longest for patients with a diagnosis of F7 code, at 118 days. Those with intellectual disorders may lack knowledge about their disability and exhibit behavioral problems that pose high risk of harm to oneself or others, necessitating a longer duration of admission compared to other disorders. The next longest admission duration was in patients with a diagnosis of the F2 schizophrenia spectrum disorder, which commonly becomes chronic. As expected, the stay duration was longest for patients at long-term facilities. Policy considerations should be made about whether patients with acute symptoms and who are eligible for involuntary admission should be placed in long-term care facilities.

The present study only analyzed cases of involuntary admission, and cases of voluntary admission were not analyzed. However, according to reports from the Ministry of Health and Welfare (Ministry of Health and Welfare, 2018), voluntary and involuntary admissions constituted 38.4% and 61.6% of all admissions, respectively, before the enactment of the revised Mental Health Act (in December 2016), and 53.5% and 46.5%, respectively, immediately after (in June 2017), which indicates a decrease in involuntary admissions. As of April 2018, voluntary hospitalizations, including consented hospitalization, constituted 62.9%, while involuntary admissions constituted 37.1% of all admissions. As noted by previous studies worldwide, such changes in the proportion of involuntary admissions are closely related to changes in the law, admission process regulations, and mental health systems (Weich et al., 2017). Similarly, in Korea, abrupt changes in the proportion of involuntary admissions are likely to reflect the changes in the law. Following the reduction of involuntary admission rates and the development of AMIS with the Mental Health Promotion and Welfare Act, the development of the Mental Health Information System (MHIS) for the case management in the community mental health centers and rehabilitation facilities is currently in process to strengthen the management of discharged patients. This thought to be an important advancement that will represent a new model for the integration of hospital and community-based mental health system in Korea.

Some limitations of this study should be noted. First, only data for involuntary admissions registered in the AMIS for the duration of our study were analyzed, so we could not make comparisons with the total number of admissions, voluntary hospitalizations, and consented hospitalizations. Second, as this was a retrospective study on pre-entered data, it was difficult to obtain various information about the involuntary admission patients. Third, because not much time has passed since the enactment of the revised Mental Health Act, the long-term

changes in involuntary admissions are difficult to determine. In the future, when data is accumulated, analyses on involuntary admission from various perspectives will be possible.

5. Conclusions

By analyzing involuntary admission data from AMIS, the authors obtained the following findings. The total number of admissions for every 100,000 people was 67 on average, and admission by legal guardians was the most common type of involuntary admission. Of the total patients, 67.8% received secondary diagnosis by a designated psychiatrist from outer institutions, and diagnosis of F2 code was the most common, followed by F1 and F3 codes. The average length of stay in the hospital was 74.4 days. To improve involuntary admission policies and mental health systems, these results will be used and follow-up studies should be conducted in the future.

Declaration of Competing Interest

None.

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