

Mental Health Services and Research and Development in South Korea

Young-Chul Chung, M.D., Ph.D.^{1,2*}, Subin Park, M.D., Ph.D.³, Sungwon Roh, M.D., Ph.D.⁴, Bomi Lee^{1,2},
Youngmin Lee, M.D.^{1,2}, Fatima Zahra Rami^{1,2}, Ling Li, M.D.^{1,2}, Jie Shen, M.D.^{1,2}

¹Department of Psychiatry, Jeonbuk National University Medical School, ²Research Institute of Clinical Medicine of Jeonbuk National University-Biomedical Research Institute of Jeonbuk National University Hospital, Jeonju, ³National Center for Mental Health, Mental Health Research Institute, Seoul, ⁴Department of Psychiatry, Hanyang University College of Medicine, Seoul, Republic of Korea

Abstract

Background: South Korea or the Republic of Korea has an area of 100,412.6 km², and population of 52 million (51,781,000). **Methods:** Besides our lifetime experiences in receiving training, teaching, and practicing psychiatry, the authors collected information from the literature pertinent to the mental health care in South Korea. This review is intended to familiarize the readers of *the Taiwanese Journal of Psychiatry* with the information of mental health-care service as well as research and development (R and D) in South Korea. **Results:** Despite consistent improvement in the overall health status in Korea, the mental health status of the population is low compared with other countries in the Organization for Economic Co-operation and Development (OECD). For example, Korea has the highest suicide-related mortality and more years of life lost due to mental/behavioral diseases, compared to those of the average and a longer-than-average duration of hospital stay, respectively, of the OECD. Conversely, the government has made efforts to overhaul the mental health system. Several remarkable changes have been made in the areas of community-based service, involuntary admission, and unequal treatment. **Conclusion:** The mental health status is closely associated with the mental health service system, prevalence of mental disorders, health insurance system, admission system, and R and D budget for mental health. To change attitudes related to mental health, strong leadership among mental health professionals is urgently needed.

Key words: community-based service, equity, mental health system, involuntary admission
Taiwanese Journal of Psychiatry (Taipei) 2021; 35: 50-58

Introduction

South Korea is a country in the southern portion of the Korean Peninsula in East Asia and its official name is the Republic of Korea. The area of South Korea is 100,412.6 km², the population of South Korea has 52 million (51,781,000).

South Korea has exhibited consistent improvement in the overall health status according to the health data of the Organization for Economic Co-operation and Development (OECD). Life expectancy at birth in South Korea was 82.7 years in 2017 (79.7 years for males, 85.7 years for females), whereas the average life expectancy among OECD countries was 80.7 years (77.7 years for males, 83.1 years for females). Conversely, South Korea has ranked relatively

low in mental health status. South Korea had the highest suicide-related mortality rate among the member countries; mortality from suicide per 100,000 people in 2017 was 23.0, whereas the overall average for OECD countries was 11.2 [1].

In the 2018 Global Burden of Disease Study, 1,693 years lived with disability (YLD) were attributed to mental and behavioral diseases (MBDs) per 100,000 persons in South Korea, which was lower than that of the OECD average of 1,879 YLD per 100,000 persons [2]. But more years of life lost (YLL) to MBDs in South Korea (1.8 per 100,000 persons) was lost in 2013 compared to that of the OECD average (0.9 per

^{1*}Corresponding author. Keumam Dong 634-18, Jeonju 561-712, Republic of Korea.
E-mail: Young-Chul Chung <chungyc@jbnu.ac.kr>

Received: Apr 29, 2021 revised: May 1, 2021 accepted: May 2, 2021
date published: Jun 22, 2021

Access this article online

Quick Response Code:



Website:
www.e-tjp.org

DOI:
10.4103/tpsy.tpsy_22_21

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Chung YC, Park S, Roh S, Lee B, Lee Y, Rami FZ, et al. Mental health services and research and development in South Korea. *Taiwan J Psychiatry* 2021;35:50-8.

© 2021 *Taiwanese Journal of Psychiatry* (Taipei) | Published by Wolters Kluwer - Medknow




















100,000 persons) [3]. These numbers indicate that the burden of premature death from mental and behavioral disorders in South Korea is greater than the average burden among OECD countries.

Furthermore, the higher age–sex-standardized ratio of excess mortality due to mental illness in South Korea compared with the average ratio among the 11 OECD countries indicates that patients diagnosed with schizophrenia or bipolar disorder are at greater risk of mortality. More psychiatric care beds and the average length of stay for patients with schizophrenia and mood disorders existed in South Korea, compared with those of the OECD averages (Table 1). The National Center for Mental Health (NCMH) in South Korea has published annual national mental health statistics since 2018. The statistics are used to understand the level of domestic mental health compared

with international indices of mental health produced by the OECD and World Health Organization (WHO), to establish evidence-based national policies and service plans based on the analysis of people's mental health status, and as indices to evaluate the quality of mental health services and the outcomes of mental health projects. In 2019 [4], 14 indices for mental health were selected. Among them, the usage rate of mental health services was 22.2%, the involuntary admission rate was 32.1%, and there were 17.6 mental health professionals per 100,000 people (Table 2).

Taken together, these statistics are closely associated with the structure of mental health service system, prevalence of mental disorders, health insurance system, admission system, and research and development (R and D) budget for mental health in Korea. Therefore, to better understand

Table 1. Comparison of mental health indicators for South Korea with the Organization for Economic Co-operation and Development average

Indicator	Value for South Korea and the average for all OECD countries ■ South Korea ■ OECD		South Korea's rank
Life expectancy (years)		82.7	5
Perceived health status (%) (good or very good)		80.7	36
Suicide rates§ (per 100,000 persons)		29.5	1
Burden of MBDs (per 100,000 persons)		68.0	
YLLs		23.0	7
YLDs		11.2	26
DALYs		1693.3	26
Excess mortality (age–sex-standardized ratio)		1879.2	
Schizophrenia		1695.1	4
Bipolar disorder		1883.2	2
Psychiatric care beds (per 1,000 population)		4.40	3
Average length of stay in hospitals (days)		4.20	
Schizophrenia		2.90	1
Mood (affective) disorders		1.31	1
		0.68	
		237.8	
		48.9	
		60.2	
		25.1	

MBD, mental and behavioral disease; YLLs, years of life lost; YLDs, years lived with disability; DALYs, disability-adjusted life years; OECD, Organization for Economic Co-operation and Development

Table 2. Fourteen indexes of mental health in Korea compared to the number of Organization of the Petroleum Exporting Countries average

Category index	2019 (%) of the number OPEC average
Mental health status	
1. Experience rate of depression	11.2
2. High-risk drinking rate	14.7
3. Lifetime prevalence of mental illness	25.4
4. Suicide mortality rate per 100,000 population (persons)	26.6
Mental health prevention and early intervention	
5. Mental health service utilization rate	22.2
6. Beneficiary rate of community mental health promotion education	4.9
Mental illness treatment	
7. Number of people receiving treatment for mental illness per 100,000 population (persons)	4,518
8. Involuntary hospitalization rate	21.1
9. Percentage of patients with severe mental illness who visit outpatient clinics within 1 month after discharge	65.7
10. Percentage of patients with severe mental illness who are re-hospitalized within 1 month after discharge	16.8
11. Annual hospital stay for psychiatric institutions (median), days	21
Mental health support system	
12. Community mental health budget per capita (amount in ₩)	5,389
13. Number of mental health professionals per 100,000 population (persons)	17.6
14. Number of registered mentally ill patients per case manager (persons)	34.2

OPEC includes 22 countries, i.e., Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, The Netherlands, Norway, Russia, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States of America.

US\$1.00 = 1,119 South Korean won (₩) as of May 3, 2021.

OPEC, Organization of the Petroleum Exporting Countries

the Korean mental health system and future challenges, the above four factors are to be reviewed with some critical issues highlighted.

Mental Health Service System

Mental health promotion services in Korea include the treatment of illnesses in medical institutions, community-based psychosocial rehabilitation, and housing, occupational, and economic support. Specifically, treatments in medical facilities refer to medical examinations, treatment, and rehabilitation conducted by national/public and private psychiatric medical institutions. Community-based services refer to the management of chronically ill patients and education for the general public for the purpose of promoting mental health and social rehabilitation services (e.g., housing support, day rehabilitation, Figure 1). According to the 2018 Mental Health Statistics [5], the number of psychiatric medical centers between 2001 and 2018 was increased 2.03-fold from 822 to 1,670, the number of community rehabilitation centers was increased 5.43-fold from 121 to 657, and the number of psychiatric nursing homes was increased 1.07-fold from 55 to 59. Psychiatric medical centers at the end of 2018 included 144 mental hospitals (18 national/public, 126 private), 378 hospitals with a mental health unit (202 general hospitals, 176 hospitals), and 1,148 psychiatric clinics. In addition, at the end of 2018, community rehabilitation centers included 348 social rehabilitation facilities, 259 mental health centers (16 regional, 243 local), and 50 community addiction management centers (Table 3). Furthermore, as of

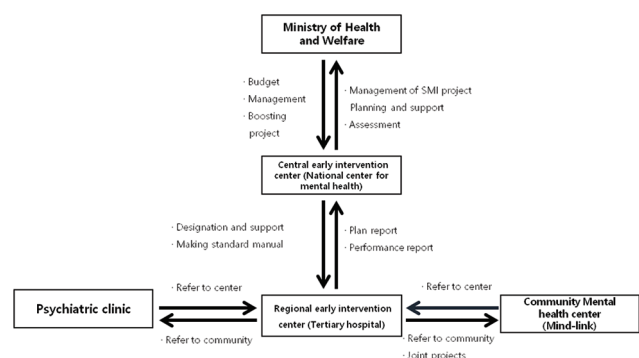


Figure 1. A proposed model of early intervention center providing intensive interventions to the individuals with early stage of psychosis.

2019, there are 42 suicide prevention centers (7 independent and 35 affiliated) and four trauma centers in Korea.

The actual number of patients admitted to psychiatric medical centers during 2019 was 138,882. The diagnoses in those patients were schizophrenia, substance use disorders, and bipolar disorder, in descending order. The median length of hospital stay was 31 days; 51,427 patients remained in the hospital for less than 1 month and 30,207 between 1 and 3 months. A total of 4,425 patients visited hospitals, and 26,515 patients used community-based rehabilitation services (18,635, 3,253, and 4,627 patients visited mental health welfare centers, addiction management centers, and social rehabilitation facilities, respectively). Among the registered users of community-based rehabilitation services, the highest proportion comprised individuals with

Table 3. Number of mental health facilities across the nation

Classification	2001 (A)	2005	2010	2018 (B)	B/A
Psychiatric medical center					
Mental hospital					
National/public	17	18	18	18	1.06
Private	57	63	127	126	2.21
Mental health unit in hospital					
General hospital	154	168	165	202	1.31
Hospital	53	81	136	176	3.32
Psychiatric clinic	541	718	827	1,148	2.12
Subtotal	822	1,048	1,273	1,670	2.03
Community rehabilitation center					
Social rehabilitation facility	66	138	230	348	5.27
Mental health welfare center					
Regional	—	—	—	16	N/A
Local	46	62	157	235	5.11
Community addiction management center	9	20	41	50	5.55
Subtotal	121	220	428	649	5.36
Psychiatric nursing home	55	56	59	59	1.07
Total	998	1,324	1,760	2,378	2.38

N/A, not applicable

serious mental illnesses (SMIs). Notably, the ratio of the number of persons registered for community-based services to the number of patients treated in psychiatric medical centers was 0.14, 0.05, and 0.04 for schizophrenia spectrum disorders (SSDs) and delusional disorder, bipolar disorder, and major depressive disorder, respectively [4]. These numbers indicate that most patients treated in hospitals or clinics are not referred to community-based services and there is a significant gap between the two services. Possible explanations for this gap are that psychiatrists may not be actively explaining or emphasizing the need for community-based services, patients and their caregivers may not want to be referred or be exposed to others, and the quality of the services and facilities offered by community rehabilitation centers may not be adequately tailored to individual needs at different stages of illness.

Another critical issue in the mental health delivery system in Korea is a lack of interaction among psychiatric medical centers. Referral between general hospitals, mental hospitals, and private clinics is not actively done except due to a medical emergency, issues associated with medical certificates, or patient preference. This is because referral between general hospitals and private clinics is not usually indicated based on what is considered an SMI but for other reasons, and specialized standards for staging SMIs (early stage vs. chronic stage) have not been clearly established between general hospitals and mental hospitals. These circumstances present a serious issue to individuals requiring urgent intervention, such as those with a first episode or early stage of SMI, especially schizophrenia. To implement referral systems for SMI, a new and innovative model has been proposed [6]. A core idea was to set up an early intervention center in the tertiary teaching hospital in each province where individuals with first-episode or early-stage SMI can receive comprehensive multidisciplinary psychosocial interventions (Figure 1). Unfortunately, this model is not being

implemented due to conflicts of interest among psychiatric medical centers.

Human Resources in Mental Health Services

Human resources in mental health services in Korea include psychiatrists, mental health professionals, and nonprofessionals. The latter two categories consist of nurses, social workers, and psychologists (occupational therapist was included as mental health professionals in the revised Mental Health Promotion and Welfare Act in 2020 which will be effective from March 2022). Mental health nurses and social workers are required to have at least 1 year of training after they are certified as a nurse or have graduated with a social work degree (www.kpmhna.or.kr/sub2/2_1.php; www.kamhsw.or.kr/sub). In addition, to become clinical psychologists, individuals should have a master's degree in clinical psychology and at least 3 years of training (www.kcp.or.kr/sub02_5_1.asp?menuCategory=2).

Regarding employment status, the number of full-time employees in psychiatric health facilities nationwide was 23,348 at the end of 2019 (Table 4). Regarding facilities, 17,670 people worked full time in psychiatric medical centers, accounting for 76% of the total workforce, followed by 2,930 (13%) people in community rehabilitation facilities, and 1,302 (5.6%) people in social rehabilitation facilities. Community rehabilitation facilities have no full-time psychiatrists or psychiatric residents. Notably, psychiatrists work part time at community rehabilitation facilities (at least 16 h per week), and psychiatric residents are assigned as part of the training curriculum. A pilot project of hospital-based case management is currently being tested. Depending on the outcome, the case managers working in hospitals could be a new human resource in mental health services. The number of psychiatrists per

Table 4. Human resource by facilities and regions^a (Unit: Person)

Classification	Human resource total	Professionals	Psychiatrist	Mental health professional				Psychiatric resident	Nonprofessionals and others
				Total	Nurse	Social workers	Clinical psychologist		
Total	23,348	9,096	3,511	5,585	2,257	2,633	695	541	13,711
Psychiatric medical center	17,670	6,264	3,511	2,753	1,407	796	550	541	10,865
General hospital mental health unit	3,253	1,300	672	628	305	91	232	449	1,504
Hospital mental health unit	6,963	2,215	933	1,282	699	453	130	62	4,686
Psychiatric clinic	2,983	946	339	607	337	225	45	29	2,008
National	473	241	26	215	189	14	12	22	210
Public	77	27	11	16	6	9		0	50
Private	2,433	678	302	376	142	202	32	7	1,748
Psychiatric clinic	4,471	1,803	1,567	236	66	27	143		2,667
Psychiatric nursing home	1,152	190	0	190	124	62	4	0	962
Social rehabilitation facility	1,302	719	0	719	152	529	38	0	583
Mental health welfare center	2,930	1,745	0	1,745	535	1,113	97	0	1,185
Regional	311	232	0	232	52	166	14	0	79
Local	2,619	1,513	0	1,513	483	947	83	0	566
Community addiction management center	222	138	0	138	35	97	6	0	84
Suicide prevention center ^b	72	40	0	40	4	36	0	0	29

^aSome values are not disclosed due to personal identification issues.

^bOnly seven independent locations are included. Attached locations are included as regional or local mental health welfare centers

100,000 people in 2018 was lower in South Korea (8) than in other OECD countries (52, 18, and 13 in Switzerland, England, and Japan, respectively).

Prevalence of Mental Disorders in South Korea

Based on a survey of mental disorders, the annual prevalence of all mental disorders in 2016 was 11.9% in Korea. The most prevalent was anxiety disorder, following in order by alcohol use disorder, nicotine use disorder, mood disorders, and SSDs [7]. Notably, the prevalence was calculated using a survey of individuals living in the community. After adjusting for inpatients with SSDs, the total number of people with SSDs was 113,850 (Table 5). The annual incidence of SSDs calculated from National Health Insurance System (NHIS) data was 0.036% [8]. Although the prevalence of SSDs and mood disorders was lower, the proportion of medical expenses due to each disorder per year was 12.4% and 13%, respectively [9].

Suicide rates (per 100,000) were 10.7, 29.5, 23.0, and 26.9 in 1993, 2009, 2017, and 2019, respectively [1, 10]. After the peak in 2009, the suicide rate exhibited a decreasing trend but recently increased in 2019. An overall decrease in the suicide rate could be attributed to the implementation of a national suicide prevention program. The first step in the national suicide prevention program was the establishment of the first five-year National Strategy for Suicide Prevention in 2004. Thereafter, a suicide prevention program was introduced in 2005 at regional mental health centers, which are part of the public community infrastructure for mental health. Next, the second five-year National Strategy for Suicide Prevention was implemented in 2009. Based on this plan, a separate budget

was newly proposed and approved. In 2011, the Act for the Prevention of Suicide was passed, the Korea Suicide Prevention Center was established, and the sale of paraquat pesticides was prohibited. The Act for the Prevention of Suicide came into force in 2012, and the Korean gatekeeper training program for suicide prevention entitled “Watch, Listen and Talk” was introduced to the general population. In 2013, an emergency department-based management program for suicide-attempt survivors was implemented, and the Korea Suicide Prevention Center together with the Journalists Association of Korea announced recommendations for reporting on suicide for the media. In 2014, the government collaborated with religious organizations to increase the participation rates of the general population in the national suicide program. The Korea Psychological Autopsy Center was established to better understand the causes of deaths due to suicide.

National Burden of Mental Disorders in South Korea

Based on a 2012 Korean burden of disease study [11], unipolar depressive disorders accounted for the most disability-adjusted life years (DALYs), followed by schizophrenia, anxiety disorders, and bipolar affective disorders. Idiopathic intellectual disability, pervasive development disorders, and conduct disorders contributed to approximately 3.7% of the DALYs from mental and substance use disorders. The distribution of causes contributing to YLD was similar to that for DALYs but differed from that for YLL. For YLL to mental and substance use disorders, alcohol use disorders accounted for the majority (85.8%), followed by schizophrenia, drug use disorders, eating disorders, and other mental and behavioral disorders (Figure 2). More than 98% of the DALYs were

Table 5. Annual prevalence and estimated number of patients with mental disorders by major diagnoses^a

	Male		Female		Total	
	Prevalence (%)	Estimated number of patients (persons)	Prevalence (%)	Estimated number of patients (persons)	Prevalence (%)	Estimated number of patients (persons)
Alcohol use disorders	5.0	982,402	2.1	409,414	3.5	1,391,816
Nicotine use disorders	4.5	883,387	0.6	122,970	2.5	1,006,358
Drug use disorders	0.0 (<i>n</i> = 0)	0	0.0 (<i>n</i> = 0)	0	0.0 (<i>n</i> = 0)	0
Schizophrenia spectrum disorders						
Community	0.2	32,880	0.2	30,481	0.2	63,361
Adjusted for inpatients					0.28	50,489
Mood disorders	1.3	250,130	2.5	499,472	1.9	749,602
Anxiety disorders	3.8	752,765	7.5	1,495,239	5.7	2,248,004
Total of mental disorders	12.2	2,415,261	11.5	2,285,252	11.9	4,700,513

^aNumber of estimated patients that live in the community except for schizophrenia spectrum disorders

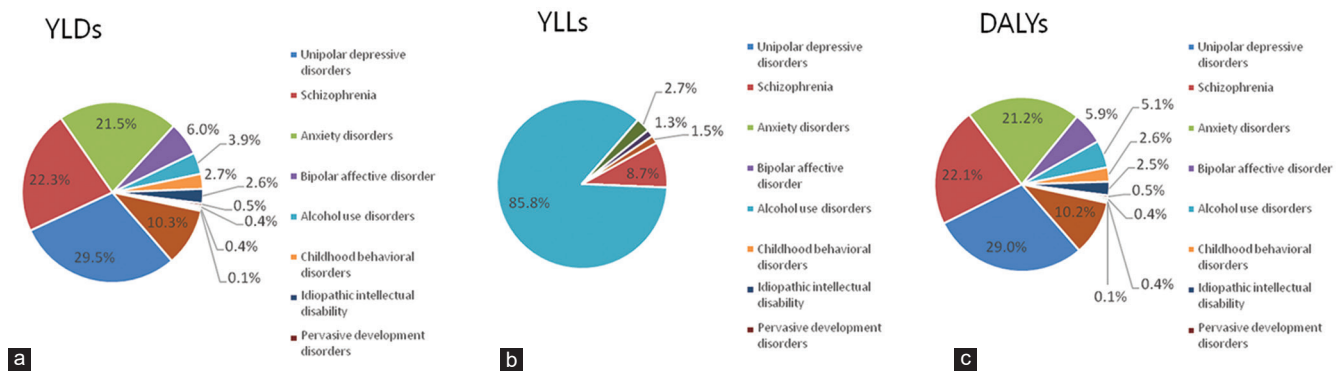


Figure 2. Proportion of YLDs, YLLs, and DALYs explained by each mental and substance use disorder group in Korea, 2012. (a) Proportion of YLDs. (b) Proportion of YLLs. (c) Proportion of DALYs. Courtesy of Lim *et al*, *Journal of Korean Medical Sciences* [11], copyrights 2016, reprinted with permission. YLDs, years lived with disability; YLLs, years of life lost; DALYs, disability-adjusted life years.

from YLD, indicating that subjects live with disabling mental disorders for a long period of time.

The age distribution associated with the DALYs for each mental and substance use disorder stratified by gender is shown in Figure 3. The burden associated with schizophrenia was increased abruptly in adolescence (10–20 years of age) and peaked in early adulthood (20–40 years of age). The burden associated with unipolar depressive disorders and anxiety disorders was increased more sharply at an early age (0–9 years) and peaked in middle adulthood (40–59 years of age); the increase was more significant in females than in males. Regarding alcohol use disorders, the largest burden occurred in males 40–59 years of age, and for childhood behavioral disorders, the largest burden occurred in males 10–19 years of age.

The burden of disease in females was greater than in males. But the burden in males less than 19 years of age was greater than in females of the same age. In childhood (0–9 years of age), the burden of mental and substance use disorders in females was less than half of that in males; however, in adolescence (10–19 years of age), the burden of mental and substance use disorders in females is increased sixfold, whereas the burden in males only is increased threefold.

In childhood, the leading cause of the burden of mental and substance use disorders is childhood behavioral disorders; however, the burden caused by childhood behavioral disorders is minimal in females. Therefore, in children and adolescents, the burden in males was greater than in females. These results can be used as a basis for selecting priority diseases and high-risk groups in the mental health area(s) that should be allocated the most resources.

Health Insurance System in South Korea

Korea has the NHIS, which is compulsory and required by Korean law. In general, Korean patients can go to any doctor or any medical institution, meaning there is no catchment area. Regarding medical aid, a referral is required to receive psychiatric service at tertiary general hospitals. For individuals with a type I disorder, there is no co-payment for medical aid; however, individuals with a type II disorder are required to pay 5% of the total medical cost. An important issue regarding medical aid reimbursement involves disparate treatment. Unlike the usual medical aid reimbursement, the extent of which varies depending on the amount of care received by the patient, the reimbursement for psychiatric treatment from

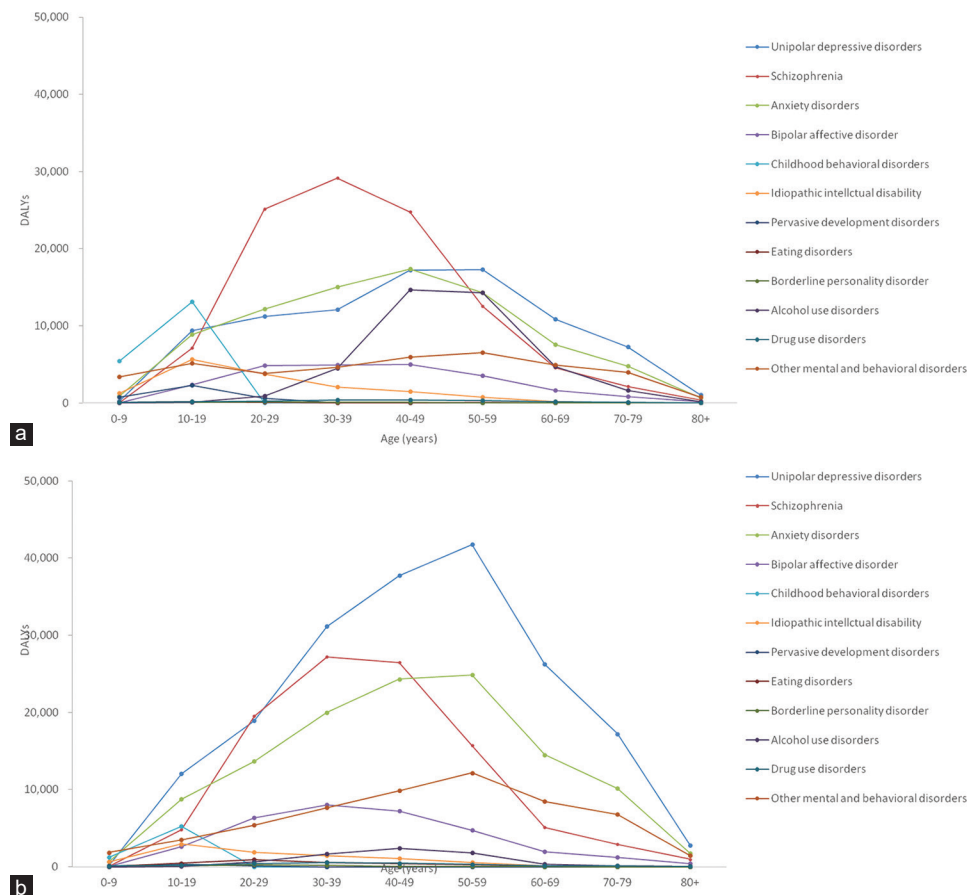


Figure 3. DALYs for each mental and substance use disorder in Korea, 2012, by age. (a) DALYs of each mental and substance use disorders for males. (b) DALYs of each mental and substance use disorders for females. Courtesy of Lim *et al.*, *Journal of Korean Medical Sciences* [11], copyrights 2016, reprinted with permission. DALYs, disability-adjusted life years.

medical aid is fixed as a *per diem* payment. For example, in the case of outpatient care, the medical aid reimbursement to psychiatric patients is approximately \$2.40 per day regardless of the type of treatment received. In 2017, a change in service fee reimbursements was adopted for medical aid, namely, psychiatrists were allowed to prescribe drugs freely based on medical diagnoses and not from a profitable intent. However, for long-acting injections (LAIs), patients are required to pay 10% of the total medical cost. Similarly, in 2015, the indications for LAI were broadened to include patients with first-episode psychosis. Previously, the cost was reimbursed only when proper medical records showing proof of readmission due to poor compliance were provided. In April 2021, the co-payment for LAIs was further reduced to 5%. Due to these two changes (broader range of indications and reduced co-payment), prescriptions of LAIs to individuals covered by the Medical Aid Program are expected to increase.

In Korea, individuals with serious illnesses (cancers), rare diseases, tuberculosis, and other diseases pay 10% of the total cost under a special-case system operating since 2005. In the field of psychiatry, since 2009, only individuals with diagnostic codes in the F20 category are eligible for the program regardless of insurance type. But the reality is that most patients with early-stage psychosis and their caregivers

do not want to be registered in the system for fear of possible future discrimination in their careers. Regarding individual psychotherapy, only three reimbursement levels available in 2018 based on the duration and type of care (i.e., supportive, intensive, or in-depth analytic), which have been expanded to include five levels based only on the duration of care: <10 min (about \$10.00), 10–20 min, 20–30 min, 30–40 min, and more than 40 min (about \$61.00). Individual therapy cannot be prescribed twice on the same day and no more than twice per week.

Admission System of Psychiatric Patients in South Korea

In May 2016, the Mental Health Promotion and Welfare Act was submitted to the National Assembly by the government and has been enacted and implemented since May 30, 2017 (www.elaw.klri.re.kr/kor_service/lawView.do?hseq=38925&lang=ENG). The main purpose of the revised act was to address the problems associated with involuntary admissions, including reducing the number of unnecessary admissions and protecting patient rights through ensuring self-determination and welfare services during treatment. Under the Mental Health Promotion and Welfare

Act, psychiatric admission is categorized into five types: voluntary admission, consented admission, involuntary admission by legal guardians, involuntary admission by administrative officials (mayor, governor, or head of district), and emergency admission. In addition to the four types of psychiatric admissions, a new category for consented admission was established, allowing admissions that only require the consent of the patient and one legal guardian if the patient desires. The Act also strengthened the requirements for involuntary admission by requiring a diagnosis from two psychiatrists from different institutions to allow a three-month hospitalization period, whereas previously, a diagnosis from only one psychiatrist was required for a six-month hospitalization. In addition, the Committee for Examination as to Legitimacy of Admission was established at the five national mental hospitals. For the extension of admissions, the Mental Health Deliberative Committee, established under the Mental Health Act of 1995, reviews requests for the extension of psychiatric admission by legal guardians or administrative officials after six months from the patient's first admission.

In the early 1990s, the proportion of voluntary admissions was less than 10% and that for involuntary admissions was more than 90% [12]. After the Mental Health Promotion and Welfare Act was implemented, the proportion of voluntarily admitted patients, including consented admission, increased from 35.6% in 2016 to 63.2% in 2017 and 67.0% in 2018. Conversely, the proportion of involuntarily admitted patients decreased from 64.3% in 2016 to 36.8% in 2017 and 33.0% in 2018 [13]. Despite these changes, the total number of psychiatric beds increased steadily until 2013, then decreased or remained at a similar level since then.

The Mental Health Research and Development System in South Korea

Since 2016, the Mental Health Research Institute (MHRI) has been established within the NCMH to conduct national mental health research. The MHRI consists of the Division of Research Planning and the Division of Mental Health. The institute has conducted several mental health research projects. A mental health technology development project was in progress until August 2019. The project topics included social problem solving, community mental health, mental disease diagnosis/treatment, and the development of R and D infrastructure including the establishment of mental disease cohorts and management performance metrics. Research on mental health problem solving has been conducted from 2019 to 2021. The current projects also include alcoholism/suicide prevention technology development, use of mental health cohorts, and the verification/standardization of mental health R and D outcomes. In addition, intramural research projects are being conducted in the MHRI, including basic biomedical research, translational research, and clinical research.

Mental health research in Korea can be divided into basic, translational, or developmental research in accordance with the Health Research Classification System in the UK. The first stage of translational research (T1) transfers findings from basic research to research on clinical drugs, medical instruments, diagnoses, and treatment. The second stage of translational research (T2) transfers research achievements to medical fields to improve health-care performance [14]. Investment in national mental health R and D between 2016 and 2019 can be categorized as follows: about 56.2% was allocated to basic research and mechanism studies, 18.1% to T1 studies (therapy and diagnosis improvement), 20.6% to T2 studies (policies on mental health services, disease management, and prevention, assessment and standardization of therapies), and 5.1% to others (e.g., humanities and social science research). Compared with the previous period (2008–2012) [15], the proportion of T2 studies was increased (from 5.8% in 2008–2012 to 20.6% in 2016–2019), and the proportion of T2 studies should be increased further to benefit from the progress in mental health research.

R and D budget information was obtained from the National Science and Technology Information Service, which showed that the total spent on mental health R and D was US\$15.0 million in 2016 and US\$16.2 million in 2019. Regarding the mental health R and D budget for each government department in 2016–2019, US\$8.3 million (52.4%) was allocated to the Ministry of Science and Technology, US\$5.7 million USD (36.1%) to the Ministry of Health and Welfare, US\$1.2 million (7.6%) to the Ministry of Education, US\$0.03 million USD (0.2%) to the Rural Development Administration, US\$0.27 million (1.7%) to the National Fire Agency, and US\$0.31 million (2.0%) to various ministries including the Food and Drug Agency. The research budget for each psychiatric disease in 2016 was US\$59,000 USD (15.8%) for developmental disorders, US\$14,000 (3.8%) for schizophrenia, US\$60,600 (16.3%) for mood disorders, 19,000 USD (5.1%) for suicide, US\$70,500 (18.9%) for addiction, US\$28,600 (7.7%) for anxiety disorders, and US\$12,300 (32.4%) for general mental disorders.

Korean Neuropsychiatric Association and Other Major Korean Psychiatric Societies

The Korean Neuropsychiatric Association is dedicated to improving the field of psychiatry, promoting national mental health, as well as fostering fellowship and enhancing the rights of a member. Major Korean psychiatric societies with foundation year are Korean Academy of Psychotherapists in 1974, Korean Society for Analytical Psychology in 1978, Korean Psychoanalytic Society in 1980, Korean Association for Clinical Art in 1982, Korean Academy of Child and Adolescent Psychiatry in 1983, Korean Association of Social Psychiatry in 1984, Korean Society of Biological Therapies in Psychiatry in 1985, Korean College of Neuropsychopharmacology

in 1985, Korean Society of Biological Psychiatry in 1985, Society of Korean Women Psychiatrists in 1986, Korean Society of Clinical Hypnosis in 1987, Korean Society for Human Sexuality in 1988, Korean Society of Sleep Research in 1990, Korean Society for Psychopathology and Psychiatric Classification in 1991, Korean Academy of Psychiatry and the Law in 1992, Korean Psychosomatic Society in 1992, Korean Academy of Sleep Medicine in 1993, Korean Association for Geriatric Psychiatry in 1994, Korean Academy of Addiction Psychiatry in 1996, Korean Academy of Adolescent Psychiatry in 1997, Korean Academy of Schizophrenia in 1999, Korean Society for Affective Disorders in 2001, and Korean Academy of Anxiety Disorders in 2004.

Conclusion

In the present study, the overall status of mental health services and R and D in Korea was investigated. Over the past 20 years, three key advancements can be summarized as follows: first, a significant growth in community rehabilitation facilities, especially mental health welfare centers and suicide prevention centers was observed; second, to better protect patient's rights, the criteria for involuntary admission have been strengthened significantly; and third, unequal treatment issues were addressed by implementing the "fee for service" change in the Medical Aid Program. Despite the significant changes, one remaining issue is the implementation of urgent interventions for individuals with early-stage psychosis. Furthermore, the mental health budget compared with the total health-care expenditure in Korea is still relatively low and only comprised 2.6% of the total expenditure as of 2014 [16]. Although mental and substance use disorders based on DALYs are ranked 4th, in priority for investment, they are only ranked 10th [17]. Brock Chisholm, the first director general of the WHO, stated that "without mental health there can be no true physical health," which supports the WHO proposition "no health without mental health." For the better integration of mental health into health and social policies as well as improved health system planning and delivery of mental health care, more vocal and stronger leadership is necessary.

Acknowledgment

The opinions expressed in this review are authors' personal opinions. They are unnecessarily reflecting on those of authors' affiliations or their professional associations.

Financial Support and Sponsorship

None.

Conflicts of Interest

Young-Chul Chung, a member of international advisory board of the *Taiwanese Journal of Psychiatry*, had no rôle in the peer review process or decision to publish this editorial. The other authors have no conflicts of interests to declare in writing this editorial.

References

1. Korea Suicide Prevention Center: *Suicide Statistics 2020*. Seoul, Korea: Suicide Prevention Center, 2020.
2. GBD 2017 DALYs and HALE Collaborators: Global, regional, and national disability-adjusted life-years (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2018; 392: 1859-922.
3. Murray CJL, Lopez AD: Measuring the global burden of disease. *N Engl J Med* 2013; 369: 448-57.
4. National Mental Health Commission: *Monitoring Mental Health and Suicide Prevention Reform: National Report 2019*. Sydney, Australia: National Mental Health Commission, 2019.
5. National Mental Health Commission: *Monitoring Mental Health and Suicide Prevention Reform: National Report 2018*. Sydney, Australia: National Mental Health Commission, 2018.
6. Chung YC, Kim Y, Kim ET, et al.: *The Necessity of Early Intervention Center for Severe Mental Illnesses in Youth and Proposal of Korean Models*. Sejong, Korea: Ministry of Health and Welfare, 2018.
7. Hong JP, Hahm BJ, Lee SH, et al.: *The Survey of Mental Disorders in Korea in 2016*. Seoul, Korea: Ministry of Health and Welfare, 2017.
8. Park J, Chung YC, An HJ: *Service Result Report on Analysis on the Utilization of Mental Health Service in Patients with Schizophrenia Spectrum Disorders at the Onset and during the Two Years after Initial Treatment*. Kwangju, Korea: Kwangju and Jeonju Mental Health Promotion Centers, 2015.
9. Health Insurance Review and Assessment Service, National Health Insurance Service. *National Health Insurance Statistic Yearbook*. Wonju, Korea: Health Insurance Review and Assessment Service, National Health Insurance Service, 2017.
10. Lee SU, Park JJ, Lee S, et al.: Changing trends in suicide rates in South Korea from 1993 to 2016: a descriptive study. *BMJ Open* 2018; 8: e023144.
11. Lim DH, Lee WK, Park HS: Disability-adjusted life years (DALYs) for mental and substance use disorders in the Korean burden of disease study 2012. *J Korean Med Sci* 2016; 31: 191-9.
12. Nam JJ, Han YJ, Choi JS: *Mental Health Status and Policy Challenges*. Seoul, Korea: Institute for Health and Social Affairs, 1994.
13. Go DS, Shin KC, Paik JW: A review of the system for mental disorders in South Korea. *Int J Environ Res Public Health* 2020; 17: 9159.
14. UK Clinical Research Collaboration. *UK Health Research Analysis 2006*. London, UK: UK Clinical Research Collaboration, 2012.
15. Roh SW, Lee SU, Soh MN, et al.: Mental health services and R & D in South Korea. *Int J Ment Health Syst* 2016; 10: 45.
16. Ministry of Health and Welfare: *An Overview of MOHW Budget and Fund Operation Plan 010*. Seoul, Korea: Ministry of Health and Welfare, 2014.
17. Korea Health Industry Development Institute: *Current State Analysis of Government Investment on Health Care R & D 2013-2017*. Cheong Ju, Korea: Korea Health Industry Development Institute, 2020.