



A New Agenda for Optimizing Roles and Infrastructure in a Mental Health Service Model for South Korea

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Objective As the demand for community mental health services continues to grow, the need for well-equipped and organized services has become apparent. This study aimed to optimize the roles and infrastructure of mental health services, by establishing, among other initiatives, standardized operating models.

Methods The study was conducted in multiple phases from May 12, 2021, to December 29, 2021. Stakeholders within South Korea and metropolitan mental health welfare centers were targeted, but addiction management support centers, including officials, patients, and their families, were integrated as well. A literature review and survey, focus group interviews, a Delphi survey, and expert consultation contributed to comprehensive revisions and improvements of the mental health service model.

Results The proposed model for community mental health welfare centers emphasizes the expansion of personnel and infrastructure, with a focus on severe mental illnesses and suicide prevention. The model for metropolitan mental health welfare centers delineates essential tasks in areas such as project planning and establishment, community research, and education about severe mental illnesses. The establishment of a 24-hour emergency intervention center was a crucial feature. In the integrated addiction support center model, the need to promote addiction management is defined as an essential task and the establishment of national governance for addiction policies is recommended.

Conclusion This study proposed standard operating models for three types of mental health service centers. To meet the increasing need for community care, robust mental health service delivery systems are of primary importance.

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INTRODUCTION

Within the South Korean population, the prolonged coronavirus disease-2019 (COVID-19) pandemic along with other incidents, including the Itaewon crowd crush tragedy and the Cheongju Osong underground tunnel floods, have led to a dramatic increase in depression and anxiety symptoms and, thus, to a higher demand for community mental health services.^{1,2} In line with the global trend of deinstitutionalization and decentralization of patients with mental illnesses, efforts are being made within South Korea to develop a system for integrated community care as well as psychiatric emergency services. At the same time, there is a growing need for psychological support tailored to different age groups, interventions for substance abuse and digital addiction, and various other community-level mental health services. However, their limited capacity has led to a decline in service quality and an erosion of professionalism. Experts also recommend proactive preparation for the risk of an increase in suicide, due to ongoing trauma related to a possible resurgence of COVID-19 and the occurrence of other disasters, and improving the quality of provided services.

South Korea currently operates 244 community mental health welfare centers, 17 metropolitan mental health welfare centers, and 58 integrated addiction management support centers.³ Mental health promotion facilities include 2,109 medical institutions, 351 mental rehabilitation facilities, and 59 mental care facilities.³ Mental health welfare centers and integrated addiction management support centers are key organizations in mental health services. Their mission is to serve as a “public mental health promotion institution aimed at providing integrated and continuous services for residents’ mental health issues based on the community,” in accordance with the Mental Health Promotion and Welfare Services Support Act as well as the Law on Suicide Prevention. These centers are focused on the integrated prevention and treatment of mental disorders at the community level, the establishment of an addiction management and rehabilitation system, and the creation of a mental-health-friendly environment to promote the mental well-being of the population.

Since the 1970s, mental health service systems worldwide have been shifting from inpatient-centered to community-based approaches.⁴⁻⁶ Notable examples include the Assertive Community Treatment model in the United States, where multidisciplinary teams provide 24-hour highly intensive case management to reduce hospitalization rates, and cost-effective care models in the United Kingdom, such as the community mental health teams and the Care Programme Approaches.^{4,5} This examination of mental health services in several countries highlights some of the issues confronting South Ko-

rea’s mental health services: fragmented service delivery, inadequate infrastructure, and a lack of distinctively defined roles for service providers. In response to the global trend of deinstitutionalization and decentralization of psychiatric patients, there has been a notable increase in demand for integrated community care as well as psychiatric emergency services.

In South Korea, aligning with recent policies such as the “Mental Health Welfare Basic Plan (2021–2025),”⁷ which emphasize a shift from treatment to rehabilitation to individual with mental illness to prevention, early detection, and social integration, and the “National Health Promotion Comprehensive Plan (HP2030),”⁸ which prioritizes community mental health services, there is an urgent need for concrete plans to promote community-based mental health services. As of November 2022, 269 community mental health welfare centers had been established nationwide, such that the policy paradigm now needs to shift from infrastructure development to strengthening the fundamentals enabling service provision.

The aim of this study was to develop a proposal for a demand-driven, medium- to long-term mental health service delivery system, considering the increasing demand for mental health services. The research involved examining domestic and international circumstances, conducting service demand surveys, and analyzing expert opinions, to formulate standardized operation models for each institution that define their specific roles and enhance the infrastructure supporting service providers.

METHODS

Literature review and survey

Issues related to the mental health service delivery system were addressed in a thorough review of previous domestic and international research. The problems thus identified in South Korea included the duplication of tasks at different centers within the system and a discontinuity in the mental healthcare delivery system. To standardize mental health services, survey questionnaires were developed and reviewed. The questionnaires were structured with common and specific items for community centers, metropolitan centers, and addiction centers (Supplementary Table 1). The survey was conducted online in two phases, from August 23, 2021, to September 1, 2021, and from October 21, 2021, to November 6, 2021. Those surveyed were directors or deputy directors of community, metropolitan, and addiction centers (107, 16, and 48 individuals, respectively) and 50 patients and 46 family members, recruited through the Korean Mental Health Family Association and relevant patient organizations. Statistical analyses consisted of a frequency analysis, chi-squared test, t-test, and one-way analysis of variance.

Focus group interviews

The research team developed focus group interview (FGI) questions based on the literature review (Supplementary Table 2). Among the 25 respondents, 12 were deputy directors or high-ranking staff from community mental health welfare centers, 7 were from metropolitan mental health welfare centers, and 6 were from integrated addiction management support centers (Supplementary Table 3). The FGI interviews followed a structured sequence of introductory questions, transitional questions, main questions, and concluding questions, posed in a non-face-to-face format via the Zoom video conferencing system. The interviews were conducted by academic experts with specialized qualifications as mental health professionals, including the skills needed for quantitative and qualitative research design and analysis. The aim of the interviews was to elicit participants' opinions, experiences, and perspectives and thereby generate in-depth discussion on the classification and prioritization of mental health service delivery systems, the establishment of specific roles within the system, infrastructure expansion, and the application of collaborative models. Interview data were analyzed in four stages (transcript, coding, mapping and categorization, and themes), following the methodology of Ryan and Bernard.⁹

Delphi survey

Based on the FGI results, the research team developed questionnaire items for the first round of the Delphi survey. These items assessed the appropriateness and importance of improvements in the mental health service delivery system and role establishment. The items were rated on a 10-point Likert scale. A panel of experts from academia and the fields of psychology, social work, and nursing as well as from various centers were recruited to achieve a balanced representation. The survey was conducted in two rounds, from October 14, 2021, to November 2, 2021, using an email-based method to solicit responses. The survey involved 10 participants from community mental health welfare centers, 10 from metropolitan mental health welfare centers, 10 from integrated addiction management support centers, and 6 stakeholders from related organizations. After the second round, as consensus criteria were met for each item, no further additional surveys were conducted (Supplementary Table 4). The SPSS program (IBM Corp., Armonk, NY, USA) was used to calculate consensus, convergence, agreement, and stability based on the expert panel's ratings. Agreement was assumed to have been reached if the agreement rate was >0.7 for each item. Response consistency and stability were assessed using the coefficient of variation, with values <0.5 indicating that additional questions were not required.

Expert consultation

The results of the analysis were reviewed, and revisory suggestions were gathered through expert consultation. The 15 experts represented the fields of mental health, addiction, and policy evaluation and were recruited to ensure fairness and representativeness. Consultations occurred either online or in a written format.

The investigation and analysis were conducted through the five procedures described above. A schematic diagram and the research progress schedule are presented in Figures 1 and 2, respectively. All study procedures were approved by the Institutional Review Board of Soonchunhyang Hospital and adhered to the latest version of the Declaration of Helsinki and principles of Good Clinical Practice (approval number: 2020-12-062). The informed consent requirement was waived because only de-identified data were collected. All analyses were performed using IBM SPSS 28.0 for Windows (IBM Corp.).

RESULTS

This study compared the mental health service delivery systems in several developed countries, such as the United States, Europe, and Japan, with those of South Korea. Key areas requiring improvement were identified and the issue of functional redundancy was analyzed through the questionnaire, FGI, Delphi survey, and expert consultations. Based on the results, the following suggestions for improvement were developed for each center and then applied in standard operating models and collaborative models. The research, including the surveys, was conceived in terms of mandatory/optional projects. However, as there were opinions from the field that the term "optional project" might convey a meaning of "not necessary," in what follows the term "mandatory/localized specialization" is used.

Community mental health welfare centers

Reorganization of community mental health welfare centers

Categorization of the mandatory projects and localized specialization projects of the community centers (Table 1) was proposed. Redundant projects from the previous model were categorized under the same category, simplifying the major categories. According to the analysis results, even though the target of mental health services has expanded from patients with severe mental illness to the general population, the former as well as suicide prevention are still prioritized by the centers. Early identification and intervention were also highlighted as essential components along the continuum of emphasis on severe mental illness and suicide. In the management of pa-

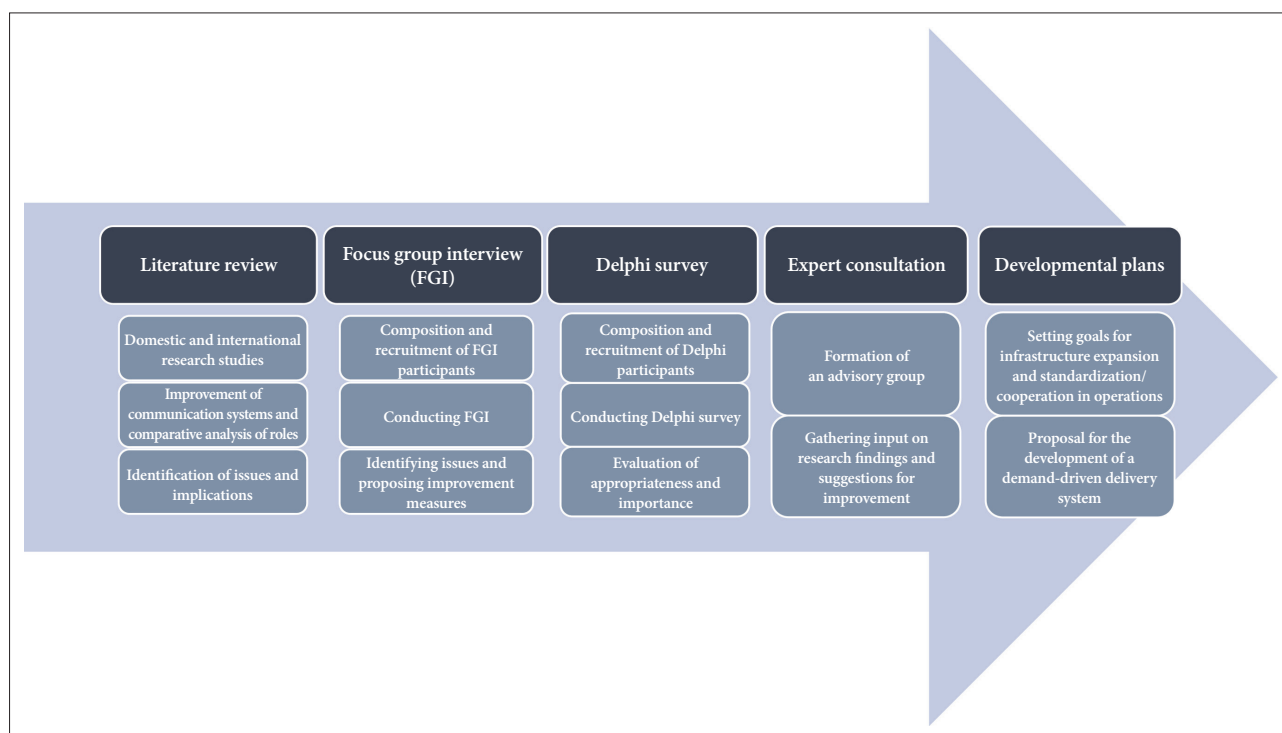


Figure 1. A new agenda for optimizing roles and infrastructures in mental health service model in South Korea.

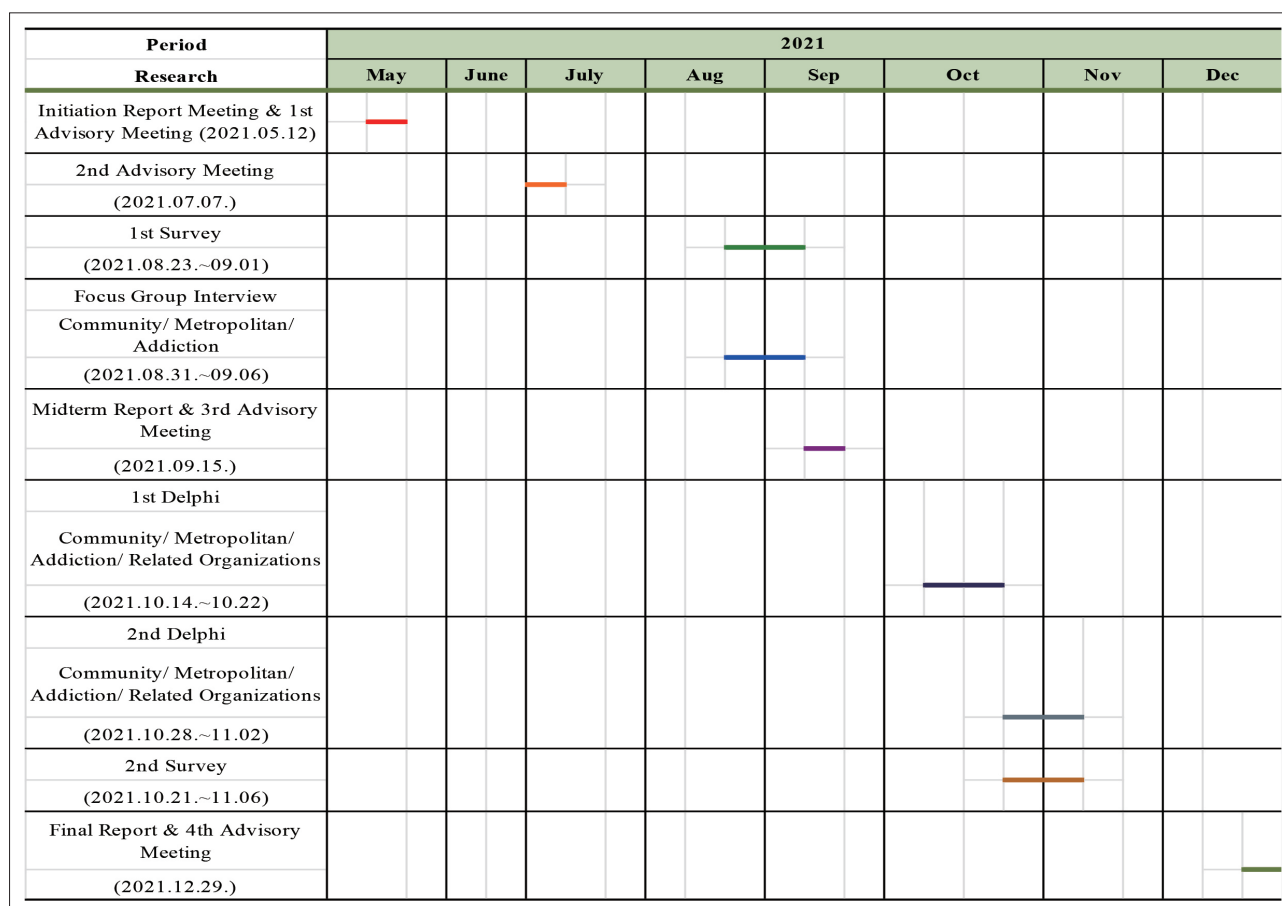


Figure 2. The research progress schedule.

Table 1. Categorization and infrastructure estimation for mandatory and localized specialization projects in community mental health welfare centers

Project domain	Classification	Details	Target and content	Minimum workforce based on population size (FTE)		
				<200,000	210,000–400,000	>400,000
Severe mental illness management project	Mandatory	Management of severe cases	Identification and registration case management services for individuals with severe mental disorders, clinical group therapy coordination, and case management for individuals with mental health disorders.			
		Early mental health registration management	Intervention and case management for individuals with initial onset disorders (15–30 years old) and in the prodromal stage of psychosis.			
		Support for unregistered individuals	Evaluation counseling to promote the registration of unregistered individuals, and clinical group treatment coordination.			
		Support of the mental health assessment committee	Interview assessment support for inpatient extension claimants, community linkage and case management for patients subject to discharge orders, and intensive case management for outpatient treatment order recipients.			
		Financial support for treatment	Support for treatment expenses, including administrative hospitalization, emergency admission, outpatient treatment, and early psychosis intervention, among others.			
		Rehabilitation services	Day rehabilitation, vocational rehabilitation, customized employment support, housing assistance, and independent support for mentally challenged individuals in blind spots. - Operation based on the status of local community resources: if local resources are lacking, direct implementation of the necessary services is recommended, along with infrastructure installation.	-	-	-
Mental health promotion project	Mandatory	Advocacy and human rights enhancement	Training for peer support for individuals and families			
		Management of mental health risks throughout life	Early detection of mental health risks at different life stages, including children, adolescents, adults, middle-aged and older individuals, vulnerable populations, and those affected by disasters. Early identification and screening of individuals in the precursor stages of mental health disorders.	4	8	12
		Mental health counseling and education	Counseling and education on mental health for the general public.			
		Psychological support for disaster victims	Disaster site crisis response and on-site counseling.	-	-	-
Mental health environment enhancement project	Mandatory	Establishment of a network collaboration system	Establishment of an early detection request system for relevant local community agencies, and construction of a crisis intervention system; collaboration with fire departments, police, and suicide prevention networks.			
		Promotion and campaign (awareness improvement)	Education and counseling to improve awareness and knowledge among the general population.			
		One-time education and counseling				
	Localized specialization		For networks, as each unit project deals with them separately, personnel is not separately calculated.	-	-	-

Table 1. Categorization and infrastructure estimation for mandatory and localized specialization projects in community mental health welfare centers (continued)

Project domain	Classification	Details	Target and content	Minimum workforce based on population size (FTE)		
				<200,000	210,000–400,000	>400,000
Suicide prevention project	Mandatory	Management of high-risk individuals for suicide	Identifying, counseling, and coordinating treatment for individuals at risk of suicide.	3	9	13
		Suicide crisis response	Case management Crisis intervention and case management for individuals with a history of suicide attempts. For individuals who have attempted suicide, management in emergency rooms and post-care.			
		Support for bereaved families	Counseling, case management, support groups for suicide survivors, and coordination with psychological autopsy.			
	Localized specialization	Awareness improvement	Selective group-based suicide prevention education, training of life guardians, and commemorative events on Suicide Prevention Day for targeted groups.	-	-	-
		Risk factor management	Community-based prevention of suicide through carbon monoxide poisoning; distribution and monitoring of pesticide safety storage boxes.			
The management of addiction	Localized specialization	Early intervention for initial addicts	Early detection and intervention for individuals at risk of addiction.	-	-	-
		Case management Education	Case management for individuals and families affected by addiction. Education for individuals and families affected by addiction.			
Community-based crisis intervention		In the absence of an Integrated Addiction Management Support Center and without additional budgetary support: activate the referral coordination system, conduct situational assessments, facilitate treatment coordination and monitoring				
		In the presence of an Integrated Addiction Management Support Center with additional budgetary support: activate the referral coordination system, conduct situational assessments, facilitate treatment coordination and monitoring, implement case management				
	Mandatory	Emergency intervention for mental health patients	Emergency response, assessment counseling, and support for hospitalization coordination.	2	4	8
	Mandatory	Planning and evaluation, performance management, personnel management, budget management, etc.	Project planning and evaluation, performance reporting, education for capacity building, supervision, and financial accounting management.	3	5	7
Administrative affairs	Localized specialization	Diagnosis for community mental health	Diagnosing mental health issues in the region and conducting a survey on the demand for mental health services.	-	-	-
				17	40	63
Total workforce						
FTE, full-time equivalent						

tients with severe mental illness, severe case management, early mental health registration management, support for unregistered individuals, support for the mental health assessment committee, and financial support for treatment were considered essential, with rehabilitation services, advocacy, and human rights advocacy occurring selectively, depending on the community resources. In the area of suicide prevention, high-risk group management, suicide crisis response, and bereavement support were singled out. In the field of mental health promotion, especially for children and adolescents, a focus on early detection of high-risk groups throughout their life rather than case management was recommended, to enable the rapid provision of medical services of these individuals. It was also suggested that these services be provided by the organizations delivering child welfare services. Building a network collaboration system that supports mental health environment improvement projects was unanimously recognized as a critical part of this project but, since it is dealt with in various individual unit projects, there was no need to categorize it as a separate project. Reflecting the disparity in the scale of mental health infrastructure between metropolitan and local communities, a few projects, including those directed at rehabilitation services, human rights advocacy, and addiction management, were categorized as localized specializations, in which alternative interventions should be provided. The comparative survey of roles by center type showed that urban centers tend to attach greater importance to children and adolescent projects than do rural centers, while the latter tend to prioritize intense rehabilitation services.

Infrastructure expansion for community mental health welfare centers

The infrastructure expansion plans for the community centers are presented in Table 1. Since the management of severe mental illness is considered the most important factor in the centers, it can be used to estimate overall manpower. Generally, 1% of the population is estimated to have severe mental illness, and the current registration management rate of mental patients is reported to be 20%.¹⁰ According to this study, an appropriate workload ratio for case management is 1:25; thus, if the current registration rate is reflected, 8 case managers are needed per 100,000 people ($100,000 \times 0.01 \times 0.2 \times 0.25$). In addition, for every four team members, a team leader can be assigned.³ Therefore, without considering the middle manager, who is not involved in case management, a minimum of 10 staff members is required per 100,000 people. However, as the agreement rate on the necessity of the project increases, infrastructure expansion will become essential. This implies that manpower should be supplemented based primarily on mandatory projects until it reaches an appropriate level. The most

urgent area in need of expansion is the management of severe mental illness, with the minimum workforce size depending on population size (full-time equivalent): with $\leq 200,000$, 210,000–400,000, and $>400,000$ requiring staff sizes of 5, 14, and 23, respectively.

Classification of community center projects by local government type

Comprehensive financial analysis reports of local governments were used to classify the community center projects into five types, based on the physical environment (administrative area), social environment (financial conditions), political environment, and educational environment. Organizations were classified by local government type, to propose roles for these organizations and to evaluate the results of their operations. However, a conclusive decision on this issue has not yet been reached.

Metropolitan mental health welfare centers

Reorganization and expansion of the infrastructure of metropolitan mental health welfare centers

The proposed reclassification and infrastructure expansion plans for mandatory and localized specialization projects for metropolitan centers are shown in Table 2. The models include the following items.

Project planning and establishment

In line with national policy objectives, the development of project plans that reflect the uniqueness and issues of metropolitan areas is essential. This requires at least one skilled professional.

Community diagnosis and research surveys

Conducting essential activities such as the compilation of mental health statistics, the analysis of community surveys, and the management of the mental health information system requires a team of at least three skilled professionals and one unskilled professional.

Severe mental illness management

Essential activities include providing training and content development for local practitioners managing severe mental illnesses. Early psychosis management, human rights advocacy, rehabilitation, and independent support tailored to the local context are also necessary. Given the importance of severe mental illness management, at least two skilled professionals and one unskilled professional should be involved.

Table 2. Reclassification and infrastructure estimation for mandatory and localized specialization projects in metropolitan mental health welfare centers

Project domain	Classification	Details	Target and content	Skilled	Unskilled
Project planning and establishment	Mandatory	Establishment of mental health and suicide prevention programs at the metropolitan level	Comprehensive Plan for National Mental Health - The 2nd Mental Health Welfare Basic Plan (draft), a reflection of the mental health and suicide prevention plans of metropolitan cities and provinces.	1	0
Community diagnosis and research surveys	Mandatory	Mental health statistics	Utilization of national big data for mental health indicators and statistical analysis.	3	1
		Analysis of community surveys	Conducting a metropolitan-level survey reflecting the demands of local communities.		
		Management of the Mental Health Information System	Registration and usage of community services, understanding the performance situation, and management.		
	Localized specialization	Effectiveness study of community programs	Analysis of program effectiveness through comparative studies (excluding simple satisfaction surveys).	-	-
Severe mental illness management	Mandatory	Severe mental illness management	Capacity-building education for practitioners (considering the prevalence and resources of addiction issues in the region).	2	1
	Localized specialization		Family education, including instructor training and capacity enhancement.	-	-
	Localized specialization	Early psychosis management	Operation of an early intervention center for high-risk individuals/ patients with early psychosis, ages 15–34.	-	-
		Human rights advocacy	Advocacy programs, support for hospitalization procedures		
Mental health promotion	Mandatory	Support for rehabilitation, and independence	Peer support training for vocational rehabilitation.	2	2
	Localized specialization	Identification of high-risk groups and mental health promotion for the general population	Remote (website, chatbot, etc.) self-assessment, counseling, and referral.	-	-
		Identification of high-risk groups and mental health promotion for the general population	Face-to-face (mobile counseling centers, etc.) self-assessment, counseling, and referral.	-	-
		Lifecycle mental health management	Lifecycle education and content production (selective approach reflecting regional characteristics)		
		COVID-19 psychological support	Remote (text, phone, etc.) psychological support for patients with confirmed disease, recovered individuals, and self-isolators.		
Creating a mental health environment (network)	Mandatory	Networking	Representative and practitioner meetings/conferences with relevant agencies, MOU signing, and committee operation.	3	2
		Perception improvement	Metropolitan-level mental health/suicide prevention events and promotions (conducted face-to-face/online, periodically/ occasionally depending on the situation and conditions).		
	Localized specialization	Human rights education	Targeting mental health promotion facility workers.	-	-
		Practitioner support	Capacity-building programs for burnout prevention and psychological recovery for practitioners.		
			Practitioner case conferences and consultations.		

Table 2. Reclassification and infrastructure estimation for mandatory and localized specialization projects in metropolitan mental health welfare centers (continued)

Project domain	Classification	Details	Target and content	Skilled	Unskilled
Disaster management	Mandatory	Establishment of a psychological support system in disaster situations	Formation of response committees at the metropolitan city/provincial level and situation monitoring.	1	0
	Localized specialization	Establishment of a psychological support system in disaster situations	Direct services (psychological support for victims, 24-hour disaster hotline counseling).	-	-
		Preparation for disasters during normal times	Capacity-building education for practitioners.		
Suicide prevention	Mandatory	Establishment of a basis for suicide prevention	Psychological autopsy, analysis of characteristics of suicide attempters, etc.	4	1
		Improvement of suicide-risk environments	Blocking harmful information, blocking harmful means, managing dangerous places, etc.		
		Support for bereaved families	Referral, education, counseling, support groups, etc.		
	Localized specialization	Support for bereaved families	One-stop services.	-	-
		Expansion of suicide prevention personnel	Gatekeeper training for suicide prevention		
		Enhancement of suicide response capabilities	Capacity-building education for local practitioners.		
Addiction	Mandatory	Establishment of an integrated addiction management system	Capacity-building education for practitioners, considering the characteristics and resources of addiction issues in the region.	2	2
Administration	Mandatory	Administration, accounting, and personnel affairs	Internal affairs, personnel management, evaluation, performance management, accounting, facility management, etc., within the center.	2	1
Total workforce for the project				20	10
Regional crisis intervention	Mandatory	Operation of a 24-hour emergency response system	Mental health counseling, on-site response, coordination with relevant agencies, and referrals.	8 (<1 million), 16 (1–5 million), 24 (>5 million)	For regions with an area of 7,000 km ² : 1.5 times the capacity.
					Detailed adjustments can be made considering the population density of the region.
	Localized specialization	Operation of a 24-hour emergency response system	Monitoring of clients referred to community mental health welfare centers during nights and holidays	-	-
	Localized specialization	Operation of emergency psychiatric beds	Securing and monitoring emergency psychiatric beds	-	-
Total emergency response workforce				8–36	
Total workforce				38–66	

COVID-19, coronavirus disease-2019; MOU, memorandum of understanding

Mental health promotion

To address the increased levels of depression, anxiety, and stress due, in part, to the COVID-19 pandemic, an on-line platform should be established that identifies high-risk groups, provides counseling, and offers a referral system for the general population in the community. This project requires two skilled and two unskilled professionals.

Creating a mental health environment

Networking is crucial for the smooth operation of key projects, severe mental illness rehabilitation facilities, and community mental health welfare centers. It requires an effective collaborative system comprising the relevant institutions, such as mental rehabilitation facilities, basic mental health welfare centers, police and fire departments, educational authorities, and mental health institutions. Perception improvement can be conducted in various formats, either face-to-face or remote and year-round or one-time only, depending on local conditions. In any case, the network support team should consist of at least three skilled and two unskilled professionals.

Disaster management

While disasters are infrequent, a readiness for immediate intervention and the ability to maintain continuous networking with relevant agencies, such as the National Trauma Center, are essential. At least one well-trained professional is necessary for this purpose.

Suicide prevention

The Metropolitan Suicide Prevention Center maintains a close working relationship with the Korean Foundation for Suicide Prevention. Their focus includes but is not limited to expanding suicide prevention personnel, supporting bereaved families, and improving the suicide risk environment. These tasks are best accomplished with at least four highly skilled professionals and one unskilled professional.

Addiction

That metropolitan centers handle addiction prevention and management in areas where integrated addiction management centers are not established is inappropriate. To enhance the capacity of local practitioners, both education and content development are necessary. For these tasks, at least four professionals, including two skilled professionals, are required.

Administration

Administration-related projects should be expanded beyond the existing mental health guidance to include administration, accounting, and personnel affairs. Two skilled professionals and one unskilled professional are required.

Regional crisis intervention

The establishment and operation of a 24-hour emergency response system, including mental health counseling and on-site response, coordination with relevant agencies, referrals, and the required personnel, are determined based on population and area, adjusting for population density. A minimum of eight staff members is needed for round-the-clock operations.

Integrated addiction management support centers

Reorganizations and infrastructure estimation for integrated addiction management support centers

The project classification, role divisions, and infrastructure estimation plans for addiction centers are shown in Table 3. The model consists of the following items.

Addiction patient management

Addiction patient management has been integrated within existing family support projects, with registration and case management services considered as one key project and classified as mandatory regardless of staff numbers. Crisis intervention for registered individuals is included as a subtask within case management. Family support projects comprise services such as counseling for the families of addicts, family education, and programs, making them mandatory for centers with eight or more staff members.

Early detection and intervention for addiction issues

For early detection and intervention with regard to addiction issues, the subcategories of non-registered counseling and screening, brief intervention, and referral for treatment are classified as mandatory regardless of staff numbers. High-risk group early intervention is classified as mandatory for centers with eight or more staff members.

Creating an addiction awareness environment

This area consolidates addiction harm prevention and education projects with community safety network projects under a unified title, with the aim of creating an addiction awareness environment project consistent with mental health welfare centers. Education projects for addiction harm prevention, tailored to different stages of life, are integrated as life-cycle education projects and are mandatory for centers with eight or more staff members. Promotion and awareness improvement projects are mandatory for centers with 10 or more staff members. The survey results strongly suggested that these projects should be expanded at the national or public health department level.

Table 3. Project classification, role division, and infrastructure estimation for integrated addiction management support centers

Project domain	Details	Staffing criteria and role divisions				Project allocation	Minimum workforce based on population size (FTE)		
		≤5	≥6	≥8	≥10		<200,000	210,000–400,000	>400,000
Addiction patient management	1. Registration, and case management services	Mandatory	Mandatory	Mandatory	Mandatory	50%	≥4	≥8	≥12
	2. Rehabilitation program	Optional	Mandatory	Mandatory	Mandatory				
	3. Family support projects	Optional	Optional	Mandatory	Mandatory				
	4. Unregistered counseling	Mandatory	Mandatory	Mandatory	Mandatory	20%	≥1.5	≥3	≥5
Early detection and intervention for addiction issues	5. Screening brief intervention referral to treatment for addiction problems	Mandatory	Mandatory	Mandatory	Mandatory				
	6. High risk group early intervention	Optional	Optional	Mandatory	Mandatory				
Creating an addiction awareness environment	7. Preventive education on substance abuse issues	Optional	Optional	Mandatory	Mandatory	15%	≥1	≥3	≥4
	8. Promotion and awareness enhancement for prevention measures	Optional	Optional	Optional	Mandatory				
	9. Establishment of network collaboration system	Mandatory	Mandatory	Mandatory	Mandatory				
Planning and administrative tasks	10. Enhancement of staff competencies and case conferences	Mandatory	Mandatory	Mandatory	Mandatory	15%	≥1	≥1	≥2
	11. Business planning and evaluation	Mandatory	Mandatory	Mandatory	Mandatory				
	12. Human resource management	Mandatory	Mandatory	Mandatory	Mandatory				
	13. Performance management	Mandatory	Mandatory	Mandatory	Mandatory				
Localized specialization	14. Financial accounting management	Mandatory	Mandatory	Mandatory	Mandatory		0.5	1	1
	15. Optional projects considering regional characteristics: 1) Vocational rehabilitation program 2) Support program for active participation of individuals 3) Support for meetings of family members of addicts 4) Emergency intervention program for unregistered individuals 5) Management program for vulnerable groups such as the homeless 6) Youth addiction program 7) Counseling delegation program for judicial institutions 8) Community survey and research project on local conditions 9) Other projects required by local governments 10) Projects tailored to the characteristics of each region	Optional	Optional	Optional	Optional	-	Allocation based on specialized project budget		
Manpower estimation							8+∞	16+∞	24+∞
FTE, full-time equivalent									

Planning and administrative tasks

Administrative tasks related to each area of operation are incorporated as mandatory projects, as they are necessary for project implementation. The accounting work necessitates a separate staff member.

Regional specialization projects

These projects consist of optional projects that consider regional characteristics.

DISCUSSION

Community mental health welfare centers

Community mental health welfare centers are responsible for providing care for individuals with mental disorders in local communities in South Korea and their roles have expanded over time, such that there are now a total of 244 centers within the country.³ However, despite the increasing demand for mental health care, not only from individuals with severe mental illnesses but also from those with common mental illnesses, the budget allocated to mental health remains a mere 2.7% of the total health budget. Meeting the growing demand for local community mental health care will require a significant expansion of the workforce and infrastructure of community mental health welfare centers. The value of the present research is that it provides foundational information for the expansion of mental health infrastructure and program design in South Korea.

The primary focus of community mental health welfare centers includes severe mental illness and suicide prevention. However, both may suffer from an excessive staff workload. It is therefore advisable to establish essential program components that are mandatory, regardless of the center's type, and then allow each local authority to implement specific additional programs according to its needs. Programs for patients with severe mental illness should account for approximately 30% of the overall workload, and suicide prevention programs for 20%. Therefore, infrastructure expansion should prioritize those areas. Environment improvements for mental health have been considered as optional programs, such that the responsibilities of specialized personnel in community mental health welfare centers have shifted toward providing specialized mental health services to high-risk groups. Addiction management programs are also considered optional, but the addiction support center infrastructure should be expanded. In terms of program classification based on local government types, the existing classification into urban, urban-rural hybrid, and rural types may not be sufficient to produce meaningful results. Additional research is needed to determine whether conditions can be established to allow for the indi-

vidualization of the roles of community mental health welfare centers based on the needs of local governments.

In conclusion, infrastructure expansion should primarily focus on essential programs until an adequate workforce is in place. Moreover, given the recent amendments to local government laws, population centers with >1 million people, such as Suwon and Goyang, may require additional community mental health welfare centers.

Metropolitan mental health welfare centers

Metropolitan mental health welfare centers fall under essential programs related to program planning and establishment, local community research and investigation, and education on severe mental disorders. In particular, the capacity to collect and analyze national big data that can be applied in the field of mental health welfare at the metropolitan level is crucial for local community research and investigation. Establishing a separate wage system would ensure the stable employment of statistics and data science experts. Additionally, the administrative domain requires the mandatory establishment and operation of labor-management councils in workplaces with more than 30 full-time employees. Therefore, most metropolitan centers are expected to face a significant burden in terms of personnel and labor management. A possible solution is the expansion of the definition and scope of "administration and accounting" in the existing mental health program guidelines to "administration, accounting, and labor management." Effective support for labor management is necessary, such as the deployment of dedicated labor management personnel and an enhancement of labor management capabilities. The establishment and operation of a 24-hour emergency response system have been strengthened primarily through the expansion of the existing 1577-0199 counseling service. However, in large local government areas (excluding Jeju Island), practical constraints often limit the provision of emergency intervention from a single location. This challenge might be resolved by erecting several centers that operate in conjunction with metropolitan centers, taking into account population and transportation factors. In recent years, most metropolitan centers have experienced a significant increase in staff. Along with the difficulty of securing labor costs, the increased workforce poses challenges related to workspace shortages and pressure. Addressing the issue of workspace availability requires close collaboration between the central government and local authorities.

Integrated addiction management support centers

Addiction has received much less attention than other mental disorders due to its reduced priority. Case management, a key function of integrated addiction management centers, is

of great importance in ensuring that services are provided to individuals with addiction and to their families. However, the current ratio of 45:1 for integrated addiction management center staff to the number of case management personnel greatly exceeds the recommended ratio of 25:1, according to internal data of the Korea Integrated Addiction Management Center Association.¹¹ Currently, only 0.67% of the total prevalence rate of substance abuse disorders is being managed in local community mental health institutions, with over 98% of cases being managed by integrated addiction management centers. Therefore, there is a need to strengthen the functions and infrastructure of integrated addiction management centers at the local community level.¹² Furthermore, the availability of addiction rehabilitation facilities could lead to an increase in demand-driven quantitative and qualitative service enhancements. Consequently, to ensure the proper execution of essential programs, integrated addiction management centers should be staffed with a minimum of 8–10 basic staff members^{13,14} who follow a prioritized deployment and establish a level of care system for the effective delivery of services. In regions with populations >200,000 but lacking integrated addiction management centers, the infrastructure should be enhanced by the establishment of new centers. Early detection and intervention services for high-risk groups should be expanded, but delivering increased services and support is challenging within the existing structure for managing addiction. Unregistered individuals facing addiction crises should undergo initial assessments and interventions based on the suspicion of substance use disorders (F10–F19) and engage in intervention services tailored to local characteristics. This will require both the development of links between integrated addiction management support centers and mental health welfare centers in the service delivery system, and regularly held meetings to allow discussion and coordination among relevant organizations. Lastly, building governance for national addiction policies is critical to achieving integrated and effective addiction management. This can be accomplished through an organization with the function of a headquarters, similar to the National Center for Addiction Management, and charged with integrating well-distributed addiction management authorities. This organization should be responsible for coordinating, managing, and negotiating the various laws and policies related to addiction prevention, treatment, and rehabilitation. It should also develop and implement a fundamental plan for national addiction policies, manage funds, and provide financial support.

Strengths and directions of future research

A strength of this study is its population-based approach. By covering centers of various sizes, specific feedback could

be collected from individuals working in them. Respondents are likely to prefer programs that they consider “meaningful” based on their insights into the importance, practicality, and effectiveness of those programs. Those insights may be influenced by factors such as the government’s prior commitment to the programs, individual values, anecdotal experiences, and knowledge gained during program implementation. Therefore, future research should include objective, quantitative evaluations of the effectiveness of individual mental health services, with the results then applied to establishing the roles and priorities of each service. Furthermore, infrastructure estimation should be supplemented by quality assessments as, even within the same mental health service category, there can be significant variations in the required staffing and budgets based on service quality.

Supplementary Materials

The Supplement is available with this article at <https://doi.org/10.30773/pi.2024.0189>.

Availability of Data and Material

The datasets generated or analyzed during the study are available from the corresponding author on reasonable request.

Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

Author Contributions

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