



Consensus in Psychiatric Emergencies Using the Delphi Technique

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Objective This study aimed to elicit expert consensus on the necessary components of a seclusion room module required to accommodate and manage psychiatric emergency patients requiring both medical and surgical interventions in infectious disease situations.

Methods A two-round Delphi survey was conducted among 38 medical professionals, architects, and spatial design experts. The survey assessed the effectiveness, feasibility, and urgency of spatial scales, spatial organization, and movement system domains related to the necessary elements of a seclusion room.

Results In the spatial scale domain, items such as “sufficient width to comply with disability standards (wheelchair accessible)” and “larger space should be provided for patients with a large range of motion or requiring special medical procedures” emerged as priorities. In the movement system domain, priorities included “anticipating situations where stable patients need to be pushed on a stretcher cart from both sides, necessitating a wider passage.” In the spatial organization domain, priorities included “installing interior elements (wall images, media panels, etc.) that aid patient stability, although a separate area for patients’ activities reflecting psychiatric characteristics is not necessary.”

Conclusion Expert consensus was achieved regarding the spatial scales, spatial organization, and movement system domains related to the necessary elements of a seclusion room for psychiatric emergency patients.

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Keywords Delphi technique; Portable seclusion module; Psychiatric emergency situation.

INTRODUCTION

The global spread of the coronavirus disease-2019 (COVID-19) has significantly impacted our society, revealing shortages in isolation ward facilities for psychiatric emergency patients.^{1,2} The initial spread of COVID-19 in South Korea began with a cluster outbreak in hospitals where patients with chronic psychiatric disorders were undergoing inpatient treatment,

resulting in higher mortality rates than the national average.^{3,4} In infectious disease situations, such as COVID-19, psychiatric medical facilities must play dual roles in infection isolation and psychiatric treatment. However, according to Health Insurance Review and Assessment Service statistics, as of March 2022, protective rooms accounted for only 0.6% of psychiatric beds.⁵ Furthermore, post-COVID-19 spatial constraints in psychiatric hospitals pose difficulties in terms of the use of treatment spaces tailored to the specificity of psychiatric conditions or non-psychiatric illness treatments, such as infectious diseases.

The number of patients requiring medical and surgical emergency interventions, such as psychiatric emergency patients and self-harm/suicide patients, has increased by 24% over the past 5 years.^{6,7} Psychiatric patients have more than three times higher rates of comorbidities with chronic diseases such as cardiovascular diseases, diabetes, metabolic syn-

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drome, and obesity compared with the general population.^{8,9}

Therefore, spatial configurations and operational methods that satisfy the diverse conditions in medical settings are required. One possible solution to meet these needs is the rapid deployment of portable seclusion modules that are adaptable to changing circumstances.¹⁰ A module is a collection of units, which represent an independent minimal space that performs a single function. The seclusion room module referred to in this study signifies a collection of units that fulfill specific roles, such as protective, isolation, and stabilization rooms for psychiatric patients. Specifically, this study proposes a seclusion room module capable of effectively accommodating and managing psychiatric emergency patients requiring both medical and surgical interventions in infectious disease situations. The objective was to provide integrated functions, including basic physical treatments; psychiatric symptom management, including self-harm risk management; and isolation measures of the infectious disease response within the proposed space. However, research on spatial configurations encompassing all three functions remains scarce, and the development of an effective seclusion room module requires the consideration of various specialized fields related to space and design, psychiatric symptoms, and infection risk.

This study aimed to elicit expert consensus regarding the necessary components of a stabilization room module required to accommodate and manage psychiatric emergency patients requiring both medical and surgical interventions in infectious disease situations using the Delphi technique.

METHODS

Data collection

The expert panel participating in the Delphi process comprised 10 specialists from the fields of psychiatry, emergency medicine, internal medicine, and surgery, 10 nurses, and 20 experts in architecture and spatial design. Individual inquiries regarding participation were conducted via telephone or email. Surveys were administered via email to the 40 experts who volunteered to participate. Two experts—one psychiatrist and one architect—did not respond to the survey, resulting in a 38-member panel. The survey was conducted in two rounds in October 2023. At least two rounds of investigation are needed for content validity assessment; therefore, sufficient stability was deemed to have been achieved after two rounds.¹¹ The study design was approved by the Institutional Review Board of the Hanyang University Guri Hospital (IRB no. 2024-05-019), and informed consent was obtained from all participants prior to the research.

Statistical treatment

Descriptive statistics were used to summarize the respondents' general characteristics, with frequencies and percentages presented as summary statistics for each variable. Stability is a metric that analyzes whether the difference in responses between panels within a round is sufficiently small to indicate a high degree of consistency and determine whether additional rounds should be conducted. If it is less than 0.5, the stability is sufficiently high such that additional rounds are not needed. If it is between 0.5 and 0.8, it is considered relatively stable.¹² However, if it is above 0.8, it is not sufficiently stable, and additional rounds must be conducted. Content validity is a quantitative metric used to narrow the differences among multiple panels and converge on a shared opinion.¹¹ The minimum allowable value is determined by the number of survey participants. As the number of valid responses per question varied from 36 to 38 depending on the number of non-responses, only questions with values of 0.327, 0.322, and 0.318 for questions answered by 36, 37, and 38 participants, respectively, were considered to have content validity. The validity comprises convergence and consensus.¹³ Convergence has a value of 0 when opinions converge on a point, and the value increases as the deviation increases. Therefore, a value of 0.5 or less is considered positive. Consensus has a value of 1 when there is complete agreement based on the first and third quartile values, and it decreases as the deviation between opinions increases. A consensus score of 0.75 or higher indicates strong agreement. These metrics can be used as decision-making guides. The calculation of the above-mentioned parameters can be found elsewhere.¹¹⁻¹³ All data were processed using STATA/MP 17.0 (StataCorp, College Station, TX, USA) and Microsoft Office Excel[®] (Microsoft Corp., Redmond, WA, USA), and statistical significance was tested at the two-sided 5% level.

RESULTS

Demographic characteristics

The respondents' general characteristics are listed in Table 1. The average age of the nine physician respondents was 43.4 years; all of them had a graduate degree or higher, and five (55.6%) held faculty positions. The average age of the 10 respondents in the nurse group was 39.1 years old; nine (90.0%) had a bachelor's degree, and one (10.0%) had a graduate degree or higher. The average age of the 19 respondents in the architecture and spatial design professionals group was 40.0 years old; 14 (73.7%) had a bachelor's degree, 5 (26.3%) had a graduate degree or higher, 11 (57.9%) were employed by a school, and 8 (42.1%) were employed by an architectural firm.

Table 1. General characteristics of the Delphi panelists

Survey participant organization	Frequency
Doctor	
Department of Mental Health Medicine	4
Department of Emergency Medicine	2
Department of Internal Medicine (infection)	1
Department of Surgical Medicine	2
Medical staff	
Nurse	10
Space and architecture	
Major in architecture	14
Major in spatial design	5

Final round analysis results

The reliability distributions of the 25 general survey items, excluding those that solicited additional comments, ranged from 0.16 to 0.54, indicating a generally acceptable level of stability. The results showed that there was an agreement between the panels on 27.8% (5/18) of the spatial scale indicators, 12.1% (4/33) of the movement system indicators, and 29.2% (7/24) of the spatial organization indicators. The results of the final round of the Delphi survey response analysis are shown in Table 2.

Spatial scale domain

Regarding restroom size, considering the characteristics of people with mental illness, when evaluating “Is the current restroom adequate in size?”, the effectiveness of the item “It should be wide enough to meet the size standards for people with disabilities (needing wheelchair access)” was 4.0 ± 0.8 , its feasibility was 3.7 ± 0.9 , and its urgency was 3.3 ± 0.9 . The content validity of the effectiveness and feasibility indicators was above the threshold, indicating consensus among the panelists; however, the content validity for the urgency indicator was below the threshold, indicating disagreement among the panelists. In the evaluation of “Is the restroom adequate in size to handle a crisis/emergency?”, the item “Safety devices such as side bars should be installed” was prioritized more highly than other items in the effectiveness (3.8 ± 1.1), feasibility (3.9 ± 0.8), and urgency (3.3 ± 1.1) metrics. Content validity was above the threshold for effectiveness and feasibility, indicating consensus among the panelists, but it was below the urgency threshold, indicating disagreement among the panelists. In the evaluation of “Is the size of the space appropriate considering the patient’s safety in case of compulsion and pressure?”, the item “The space should be larger in case of patients with a large behavioral radius or special medical needs” was higher than other items in effectiveness (3.7 ± 0.9), feasibility (3.1 ± 0.9), and urgency (3.1 ± 0.9). Content validity was above

the threshold for effectiveness, indicating consensus among the panelists, but it was below the threshold for feasibility and urgency, indicating disagreement among the panelists.

Movement system domain

In the evaluation of “Regarding the connectivity of each area according to the scenario flow, is the movement reasonable in each area of the anteroom, patient room, and restroom?”, the item “When going from the ward to the restroom, the narrow part due to the emergency cart and the MAYO stand should be improved” was prioritized over other items in the effectiveness (3.8 ± 0.8), feasibility (3.4 ± 0.9), and urgency (3.4 ± 1.0) indicators. Content validity was above the threshold for the effectiveness indicator, indicating consensus among the panelists, but it was below the threshold for the feasibility and urgency indicators, indicating disagreement among the panelists. Regarding the direction of the restroom door opening, in the evaluation of the item “Do you consider it appropriate to use swinging doors (opening towards the room side) instead of automatic sliding doors for restroom doors to optimize room space utilization?”, the option “Adopt automatic sliding doors” showed the highest priority compared with other items in terms of effectiveness (4.1 ± 0.8), feasibility (3.9 ± 0.9), and urgency (3.4 ± 1.0) indicators. While content validity exceeded the threshold for the effectiveness and feasibility indicators, indicating the convergence of opinions among panelists, it fell below the threshold in the urgency indicator, indicating disagreement among panelists. Regarding the adequacy of the width of the anteroom entrance, in the evaluation of the item “Is the width suitable for passing stretcher carts and mobile medical equipment?”, the option “Considering scenarios where patients in need of stability need to be pushed on a stretcher cart from both sides, the width should be expanded further” showed the highest priority compared with other items in terms of effectiveness (3.8 ± 0.9), feasibility (3.4 ± 1.0), and urgency (3.4 ± 1.0) indicators. While content validity exceeded the threshold for the effectiveness indicator, indicating the convergence of opinions among the panelists, it fell below the threshold in the feasibility and urgency indicators, indicating disagreement. In the evaluation of “Is the width of the main entrance suitable for considering the simultaneous entry of multiple individuals?”, the option “It should be expanded enough for two people to enter simultaneously” showed the highest priority compared with other items in terms of effectiveness (3.7 ± 1.0), feasibility (3.6 ± 0.8), and urgency (3.4 ± 1.0) indicators. While content validity exceeded the threshold for the effectiveness indicator, indicating the convergence of opinions among the panelists, it fell below the threshold for the feasibility and urgency indicators, indicating disagreement among the panelists.

Table 2. Results from final round of the Delphi survey

Item	Response*	Consensus	Convergence	Stability	Content validity
Section 1. Evaluation of spatial scale					
1-1. It should be wide enough to meet the size standards for people with disabilities (wheelchair access)					
Effectiveness	4.0±0.8	1.00	<0.01	0.20	0.737
Feasibility	3.7±0.9	0.75	0.50	0.25	0.368
Urgency	3.3±0.9	0.67	0.50	0.27	-0.158
2-1. Safety devices such as side bars should be installed					
Effectiveness	3.8±1.1	1.00	<0.01	0.30	0.579
Feasibility	3.9±0.8	1.00	<0.01	0.21	0.579
Urgency	3.3±1.1	0.71	0.50	0.33	<0.001
2-2. For CPR, the space should be further expanded assuming that several people enter and move the patient					
Effectiveness	3.4±1.0	0.75	0.50	0.30	0.053
Feasibility	3.0±1.1	0.33	1.00	0.37	-0.421
Urgency	3.1±1.0	0.67	0.50	0.33	-0.316
2-3. The space should be further expanded assuming that medical staff enter owing to falls in the bathroom					
Effectiveness	3.0±1.0	1.00	<0.01	0.32	-0.474
Feasibility	2.9±0.9	0.67	0.50	0.30	-0.579
Urgency	2.6±0.9	0.67	0.50	0.35	-0.684
3-1. Assuming the implementation of leg restraint, the space should be expanded further					
Effectiveness	3.3±1.0	0.67	0.50	0.31	-0.158
Feasibility	2.9±1.0	0.67	0.50	0.34	-0.474
Urgency	3.1±1.0	0.33	1.00	0.34	-0.421
3-2. The space should be larger in case of patients with a large behavioral radius or special medical needs					
Effectiveness	3.7±0.9	0.75	0.50	0.25	0.368
Feasibility	3.1±0.9	1.00	<0.01	0.30	-0.474
Urgency	3.1±0.9	1.00	<0.01	0.29	-0.474
Section 2. Evaluation of the movement system					
1-1. When going from the ward to the restroom, the narrow part due to the emergency cart and MAYO stand should be improved					
Effectiveness	3.8±0.8	0.75	0.50	0.22	0.421
Feasibility	3.4±0.9	0.75	0.50	0.27	0.053
Urgency	3.4±1.0	0.75	0.50	0.30	0.053
1-2. Movement according to the order of medical practice (bed movement, medical device movement, etc.) should be improved					
Effectiveness	3.2±0.9	0.67	0.50	0.28	-0.081
Feasibility	3.2±0.8	0.67	0.50	0.25	-0.189
Urgency	3.0±1.0	0.33	1.00	0.35	-0.297
2-1. Adopt automatic sliding doors					
Effectiveness	4.1±0.8	0.75	0.50	0.20	0.684
Feasibility	3.9±0.9	1.00	<0.01	0.23	0.579
Urgency	3.4±1.0	0.67	0.50	0.29	-0.053
2-2. Adopt a manual sliding door					
Effectiveness	3.1±1.0	0.33	1.00	0.34	-0.158
Feasibility	3.5±1.0	0.75	0.50	0.29	0.211
Urgency	2.9±1.0	0.33	1.00	0.33	-0.316
2-3. Adopt a door that opens toward the bathroom					
Effectiveness	1.7±0.8	0.50	0.50	0.49	-0.947
Feasibility	2.1±1.0	0.50	0.50	0.50	-0.842
Urgency	1.6±0.7	0.50	0.50	0.41	-1.000

Table 2. Results from final round of the Delphi survey (continued)

Item	Response*	Consensus	Convergence	Stability	Content validity
2-4. Adopt an door that opens toward the hospital room					
Effectiveness	2.0±0.8	0.50	0.50	0.41	-0.947
Feasibility	2.3±1.1	0.20	1.00	0.46	-0.737
Urgency	1.9±0.8	0.50	0.50	0.43	-0.947
2-5. Do not install toilet doors					
Effectiveness	1.8±0.9	0.50	0.50	0.49	-0.838
Feasibility	2.1±1.1	<0.01	1.00	0.54	-0.784
Urgency	1.5±0.6	<0.01	0.50	0.40	-1.000
3-1. Considering scenarios in which patients in need of stability need to be pushed on a stretcher cart from both sides, the width should be expanded further					
Effectiveness	3.8±0.9	0.75	0.50	0.24	0.474
Feasibility	3.4±1.0	0.75	0.50	0.29	0.263
Urgency	3.4±1.0	0.75	0.50	0.29	0.158
3-2. The width should be further extended, assuming that the device is required to enter and exit					
Effectiveness	3.6±1.0	0.75	0.50	0.27	0.316
Feasibility	3.3±1.0	0.75	0.50	0.29	0.053
Urgency	3.2±1.0	0.67	0.50	0.31	-0.053
4-1. It should be expanded enough for two people to enter simultaneously					
Effectiveness	3.7±1.0	0.75	0.50	0.26	0.421
Feasibility	3.6±0.8	0.75	0.50	0.22	0.263
Urgency	3.4±1.0	0.75	0.50	0.30	0.081
4-2. It should be expanded enough for three people to enter simultaneously					
Effectiveness	2.6±1.0	0.50	0.50	0.40	-0.676
Feasibility	2.4±0.9	0.50	0.50	0.38	-0.784
Urgency	2.2±1.0	<0.01	1.00	0.46	-0.838
Section 3. Evaluation of spatial organization					
1-1. A restroom complying with the legal standards for disabled restrooms (a wheelchair-turning radius of 1,400×1,400, unit: mm) is necessary					
Effectiveness	3.8±1.0	0.75	0.50	0.26	0.514
Feasibility	3.5±1.1	0.75	0.50	0.32	0.081
Urgency	3.5±1.0	0.75	0.50	0.29	0.135
1-2. It is not necessary to meet the legal standards for disabled restrooms, but a restroom suitable for the activities of disabled individuals is needed					
Effectiveness	4.0±1.0	0.75	0.50	0.26	0.568
Feasibility	3.9±1.0	1.00	<0.01	0.25	0.568
Urgency	3.6±0.9	0.75	0.50	0.27	0.297
2-1. Managed through the installation of motion sensors instead of observation windows					
Effectiveness	3.8±0.6	0.75	0.50	0.17	0.405
Feasibility	3.9±0.6	1.00	<0.01	0.16	0.568
Urgency	3.4±1.1	0.75	0.50	0.31	0.135
2-2. Managed through CCTV installation instead of an observation window					
Effectiveness	2.9±1.0	0.33	1.00	0.35	-0.405
Feasibility	2.6±1.1	0.33	1.00	0.44	-0.514
Urgency	2.2±1.1	<0.01	1.00	0.50	-0.676

Table 2. Results from final round of the Delphi survey (continued)

Item	Response*	Consensus	Convergence	Stability	Content validity
2-3. Install the observation window at eye level					
Effectiveness	3.5±1.0	0.75	0.50	0.28	0.135
Feasibility	3.5±1.1	0.75	0.50	0.30	0.081
Urgency	3.3±1.0	0.67	0.50	0.32	-0.135
2-4. Install the observation window at the bottom (foot)					
Effectiveness	2.4±1.1	<0.01	1.00	0.46	-0.730
Feasibility	2.8±1.3	0.67	0.50	0.46	-0.459
Urgency	2.1±0.8	<0.01	1.00	0.39	-0.946
3-1. Only a minimum of furniture (side table, chair) should be installed					
Effectiveness	3.4±1.3	0.50	1.00	0.39	0.243
Feasibility	3.6±1.3	0.75	0.50	0.35	0.243
Urgency	3.1±1.2	0.33	1.00	0.39	-0.297
3-2. There is no need for a separate area, but interior elements (wall images, media panels, etc.) that aid patient stability should be installed					
Effectiveness	4.2±1.0	0.75	0.50	0.23	0.730
Feasibility	4.0±0.9	1.00	<0.01	0.24	0.622
Urgency	3.5±0.9	0.75	0.50	0.27	0.027

Values are presented as mean±standard deviation unless otherwise indicated. *range: 1 (disagree) to 5 (agree). CPR, cardiopulmonary resuscitation

Spatial organization domain

In the evaluation of “Should wheelchairs and similar aids be available for physically restricted psychiatric patients in the restroom?”, the option “It is not necessary to meet the legal standards for disabled restrooms, but a restroom suitable for activities of disabled individuals is needed” showed the highest priority compared with other items in terms of effectiveness (4.0±1.0), feasibility (3.9±1.0), and urgency (3.6±0.9) indicators. While content validity exceeded the threshold for the effectiveness and feasibility indicators, indicating convergence of opinions among the panelists, it fell below the threshold for the urgency indicator, indicating disagreement. In the evaluation of “Is it necessary to have a window (observation window) to observe the interior of the restroom for safety?”, the option “Manage through the installation of motion sensors instead of observation windows” showed the highest priority compared with other items in terms of effectiveness (3.8±0.6), feasibility (3.9±0.6), and urgency (3.4±1.1) indicators. While content validity exceeded the threshold for the effectiveness and feasibility indicators, indicating convergence of opinions among the panelists, it fell below the threshold for the urgency indicator, indicating disagreement. In the evaluation of “Is a separate area needed for activities reflecting the characteristics of psychiatric patients?”, the option “There is no need for a separate area, but installation of interior elements (wall images, media panels, etc.) that aid patient stability should be done” showed the highest priority compared with other items in terms of effectiveness (4.2±1.0), feasibility (4.0±

0.9), and urgency (3.5±0.9) indicators. While content validity exceeded the threshold for the effectiveness and feasibility indicators, indicating convergence of opinions among the panelists, it fell below the threshold for the urgency indicator, indicating disagreement.

DISCUSSION

This study used the Delphi technique to obtain consensus of expert opinions on the required elements of a seclusion module to accommodate and manage psychiatric emergency patients requiring medical and surgical care in infectious disease situations. We conducted the discussion in the following order of patient entry: anteroom, patient room, and resting room.

First, concerning the adequacy of the width of the entrance to the anteroom, the options “Considering scenarios where patients requiring stabilization need to be held from both sides and the stretcher cart pushed, the width should be expanded further” and “It should be expanded enough for two people to enter simultaneously” were prioritized. Considering these results, the width of the anteroom entrance should be expanded to make it possible for stretcher carts and two medical staff members to enter simultaneously.

Second, regarding the spatial dimensions of the ward, considering the characteristics of psychiatric patients, the options “Expanding the space further for patients who have a large range of movement or who need special medical procedures

is required” and “Improvement is needed in the cramped areas due to the emergency cart and MAYO stand when going to the restroom from the ward” were prioritized. Based on the above opinions, the space should be expanded to accommodate the use of medical devices, such as emergency carts and mobile X-ray machines, in the room. Additionally, multiple medical staff members are required when performing medical procedures in the room, such as compulsion and cardiopulmonary resuscitation (CPR). In particular, the space under the bed in the hospital room is considered particularly important, evidenced by participants’ detailed comments regarding how small this space is, which limits the available space for medical staff to move and handle medical devices. It also hinders multiple medical staff members from simultaneously performing medical procedures.

Third, concerning the allocation of a separate area for patients within the ward, the option “There is no need for a separate area, but installing interior elements (wall images, media panels, etc.) that aid patient stability should be done” was prioritized. As the seclusion room module is intended for psychiatric emergency patients, the allocation of areas and furniture for long-term hospitalization, such as in conventional wards, can be considered an additional concern. Based on the above comments, priority should be given to solutions that can be utilized in existing facilities without separate area allocation. In the future, we can consider introducing smart devices that are highly effective in stabilizing patients.

Fourth, regarding the size of the restroom, the option “It should be wide enough to accommodate wheelchair access based on the standard dimensions for disabled individuals” was prioritized over “A restroom complying with the legal standards for disabled restrooms (a wheelchair-turning radius of 1,400×1,400, unit: mm) is necessary.” Considering the above opinions, although it may not be necessary to strictly adhere to the legal standards for disabled restrooms, restrooms should be expanded to make wheelchair access possible.

Fifth, regarding the restroom space while considering the characteristics of psychiatric patients, the option “Safety devices such as sidebars should be installed in the restroom” was prioritized, while space expansion in relation to crisis situations such as CPR or falls was not. Therefore, to configure the restroom space within the stabilization room, the installation of safety devices, such as sidebars, should be prioritized. However, designs that minimize self-harm or harm to others should also be considered, given that it is a space intended for psychiatric patients.

Sixth, concerning the direction of the restroom door opening, the option “Adopt automatic sliding doors” was prioritized. Sliding doors offer advantages over swing doors because they are easier to open and close in terms of securing an ac-

tivity space. Moreover, they facilitate opening and closing when moving with a pole or wheelchair. Therefore, to improve patient mobility and stability, automatic sliding doors should be adopted when configuring the restroom space within the seclusion room module.

Finally, regarding the need for a window (an observation window) in the restroom, the option “the installation of motion sensors instead of observation windows” was prioritized. Traditional management through observation windows requires medical personnel to move physically to a location for confirmation, thus making rapid responses during emergencies difficult. Additionally, the use of CCTV devices is considered an invasion of patient privacy. Therefore, the introduction of monitoring using smart technology, such as motion sensors, would allow for the immediate detection of abnormal patient behavior and prevent potential privacy breaches, thereby increasing utility.

This study has several limitations. First, the experts disagreed regarding the priorities of improvement measures in each category, and the results must be interpreted carefully. However, despite these disagreements, the derived results are valuable because they represent the average of the highest priorities among the measures evaluated by the expert panel. Additionally, while the study focuses on expert opinions, it may not fully capture the effectiveness of the theoretical designs in real-world applications. Furthermore, the emphasis was placed on structural and safety features, with less attention given to elements that promote patient autonomy and psychological comfort. However, we are also considering the use of interior elements (wall images, media panels, etc.) and other smart devices in an effort to create a sense of security. Second, the results of the Delphi study do not necessarily represent the opinions of all healthcare providers in the country, and the consensus among experts might not reflect broader stakeholder perspectives, potentially limiting the generalizability of the findings. Nonetheless, the fact that we sought input from a multidisciplinary group of experts to validate the effectiveness of the stabilization room module configuration ensured that the respondents all had expertise in the required areas.

This study drew expert consensus on the necessary elements of the seclusion room module for psychiatric emergency patients who need medical and surgical treatment in infectious disease situations such as COVID-19. The study tested the feasibility of the spatial scale, spatial organization, and movement system for the anteroom, patient room, and restroom areas of a seclusion module, and prioritized the required elements. The results are expected to help secure a space that can flexibly cope with various medical field situations, such as infectious diseases, mental emergencies, and psychiatric patients

requiring medical and surgical treatment.

Specifically, the study provides basic guidelines, including specific spatial recommendations that address three key factors: 1) space for patients with medical and surgical needs, 2) space for patients with psychiatric symptoms, and 3) space that can be utilized during infectious disease situations. This research can serve as a foundation for developing adaptability across different types of facilities or for crafting detailed strategies that accommodate varying resource levels. Future research could build upon these findings to develop more specific strategies tailored to different contexts. Moreover, the modular design allows for reassembly and deployment in response to changing conditions. Consequently, implementing these strategies is likely to be more effective, as the modules can be flexibly adapted to different circumstances, such as rapidly constructing and dismantling units during a pandemic, or repurposing certain spaces or functions during peacetime.

Availability of Data and Material

All data generated or analyzed during the study are included in this published article.

Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

Author Contributions

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