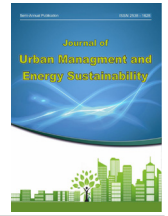


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ORIGINAL RESEARCH PAPER

Analytical framework in designing the landscape of psychiatric hospital (Case study: Razi Therapeutic Psychiatric Center)

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ABSTRACT

Psychiatric hospitals are forgotten elements in cities, that are considered as a dark part of the city, and even the connection with the hospital and its patients, is seen as taboo. The design of hospitals is significant in general, but the design of a mental hospital is especially crucial due to the prevailing attitudes of society towards hospitals and the fear of the presence of patients. Patients with mental illness have been exiled behind the walls of the hospital for years, and they are far from their normal daily lives. During the day, they do not see a view other than the hard concrete walls of the hospital. In this article, in order to achieve a framework for designing the landscape of mental hospitals, the methodology involved qualitative methods by using the descriptive phenomenological research method and a semi-structured in-depth interview with patients. Then, a focus group consisting of the hospital's medical staff discussed the topic of the research. To analyse the interview texts, we used Colaizzi's seven-step method, which led to the formation of 164 codes, 31 subthemes, and 9 main themes shaping the main framework. The results and findings of this research report indicate that social and cultural aspects of the design of the mental hospital environment are essential and effective in the patient's treatment process. For future studies, utilization of an interdisciplinary team consisting of social scientists, engineers, architects, and building scientists may serve to facilitate the production of research that enhances comprehension within the respective domain.

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1. Introduction

The perceptions and feelings of those forced into hospitalization were impacted by hospital being hidden behind walls and high fences. In both physical and psychological terms, hospitals clearly define their boundaries and demarcate “patients” from society (Neducin, Krkljes and Kurtovic-Folic 2010). Patients may be admitted to the hospital after being diagnosed with a mental health disorder. They must be provided with physiological and psychological support at this stage to ensure their safety and comfort, as well as to allow them to perform their normal life tasks. The atmosphere of the hospital is a far cry from normal life, and people are often separated from family and friends and enter an excluded environment. This can result in a reduction in quality of life and the possibility of harming themselves or others. In psychiatric hospitals, the physical environment is important in the treatment of patients suffering from mental disorders, and since such facilities serve a specific group of patients, the design should reflect their characteristics (Ergun and Isik 2018). In psychiatric hospitals, the needs of patients are met with a wider variety than a healthy person. Each individual has a diverse world of unique needs, which are not easily discovered and met. In addition, these people have a much lower ability to adjust to changes in their living conditions than normal individuals. This creates a unique design challenge. It is recommended that the residence environment for these people be close to their normal living conditions (Ebad 2011).

The design and planning of treatment units in recent decades has revealed fundamental relationships between physical environment factors and mental health (Iyendo, Uwajeh and Ikenna 2016). It is essential that the designer and users of the psychiatric hospital landscape understand the new therapeutic perspective before designing the landscape. Otherwise, the gap between design, constructor and user will persist (Tafahomi and Nadi 2022). Despite the fact that the hospital buildings and external areas maintain their integrity and continuity, they have contributed to the hospital's transformation into “a city within a city” with its own pattern and design. It should be noted that the characteristics

relevant for the qualitative assessment of any public space can also be applied to these spaces, as they are an integral part of the urban landscape. In contrast to other public spaces, they are distinguished by their physical characteristics, which are established by specific contents, functional units, and communication lines. These must be designed, planned, and constructed according to the strict guidelines of modern medicine, planning, and design. Among the largest and most complex public institutions are hospitals, which include buildings and the surrounding spaces. Hospitals are generally perceived as unpleasant parts of the city, which is why they are separated from the rest of the urban fabric, since they are used only in emergency situations (Neducin, Krkljes and Kurtovic-Folic 2010).

This 100-year-old psychiatric hospital is also one of the biggest training and treatment centres in the Middle east. It is located in the southeast of Tehran and is Iran's oldest psychiatric hospital. With approximately 80 hectares of forest inside the hospital complex, this hospital has high potential, since most hospitals are limited in terms of green spaces. Since the hospital plays an imperative role in accelerating the process of improvement and satisfaction of patients and even clients and companions, and there are no adequate design elements in the area and special binding measures, it is necessary to design and adapt the hospital area and space to accommodate a group of patients unable to return to their communities for any reason and who must stay permanently in the hospital. In the eyes of newly arrived patients and their companions, a proper environment in the hospital signifies the proper functioning of the institution.

Through offering a framework and guideline geared toward improving the design of psychiatric hospitals and the elements present in those areas or addressing factors affecting mental states, this study provides insight into the special conditions and needs of patients. Razi Psychiatry Training and Treatment Centre (Amin Abad) was the subject of the study. After assessing the current situation in the hospital area, some data were collected from patients through an in-depth semi-structured interview and the formation of

a focus group of medical staff members. In order to estimate the reliability of the interviews and research findings, the triangulation method was used. Then, Colaizzi's seven-step method was used to analyse the collected data. In the end, a comprehensive framework that incorporates the criteria of environmental design effects and mental health is proposed, taking into account the difficulty of designing such spaces.

2. Theoretical framework

Recent studies have shown evidence of the effects of landscape on the mental health and users of the space (Curtis et al. 2007, Evans, Crooks and Kingsbury 2009, Neducin, Krkljes and Kurtovic-Folic 2010, Setola and Borgianni 2013, Tafahomi and Nadi 2022, Ward Thompson 2011, Wood et al. 2015) and health geography has been studied in this field in order to understand how place influences health and well-being. Health geography refers to values and inequalities, especially those based on space and place. It deals with the perception and evaluation of the role of space and place in health outcomes (Curtis et al. 2020, Pearce et al. 2018). Access to landscape not only improves mental health (Eastoe 2016, Jarrott and Gigliotti 2010), but the qualities of space have a positive effect on increasing people's social well-being (Egoz and De Nardi 2017). Also, these researches have formed the concept of therapeutic perspective (Kearns and Gesler 1998), which is a central theoretical concept in the field of health geography (Moon, Kearns and Joseph 2006), which deals with understanding how the

environment affects mental health (Williams 2017).

The spaces that develop the idea of the therapeutic landscape are often medical environments for the treatment and care of severe mental illnesses, and often the lived experience of these patients is shaped by the influence of infrastructure and interactions (Curtis et al. 2007, Gesler 1992, Wood et al. 2015). Hospital design, and especially the social dimensions of place, and well-being, can benefit from the geographical perspectives of health that include the therapeutic landscape (Gesler and Kearns 2005, Kearns and Gesler 1998).

The therapeutic landscape in designing hospitals emphasizes the impact of social, physical and symbolic characteristics on the health and well-being of people (Gesler 2003, Williams 2017) and it is increasingly in the intersection of Aesthetic, therapeutic and natural characteristics (Evans, Crooks and Kingsbury 2009) and that observing nature can help the healing process has been proven (Ulrich 1984). Also, the therapeutic landscapes provide benefits, functions and activities for patients, medical staff and clients, which leads to the improvement of physical, mental and social activities through proper design (Tafahomi and Nadi 2022).

Since therapy is a social activity, the social dimension is particularly beneficial in therapy. From the therapist's standpoint, the concept of community therapy is predicated on the formation of an appropriate social relationship between individuals (Golestani and Zahedan 2017,



Figure 1: Razi Educational and Therapeutic Psychiatric Center

Setola and Borgianni 2013). An article published by (Setola & Borgianni, 2013) examined how to improve patient-staff relationships by arranging the spatial elements of the hospital. Based on the findings of this study, spatial arrangement has been demonstrated to be beneficial to patients with social problems in their recovery process, and spatial arrangements are used to increase the interaction between treatment staff and patients in order to solve these disorders.

The therapeutic landscape includes both green and blue landscapes. Both are related to the process of improving mental health and the quality of treatment. This is true for hospitals, but also in urban spaces (Jansen et al. 2017), and (Tafahomi & Nadi, 2022) have stated that the spaces of hospitals that do not include green and blue therapeutic views have caused a decrease in the activity of patients in the open spaces of the wards, which lack variety of colours, smells and materials. The findings of another research in the field of environmental arts in the hospital area as an approach to implement the concept

of therapeutic landscape and its application in therapeutic spaces show that the presence of natural elements in the hospital helps to improve the health of both mentally ill patients and the medical staff (Evans et al., 2009).

Hospital spaces should include different types of activities and experiences because experiences play a key role in design that should be closely related to the specific needs of users. (Ulrich 1999) and (Wood et al. 2015) have stated that the patients experiences and memories change their understanding of the therapeutic landscape and also patients past experiences can affect the well-being and feelings of the landscape changes. In the same research, it has been stated that history is important in the design of hospitals and patients often show strong positive and negative emotional reactions to spaces related to their past experiences.

In general, the role of decision-making in spaces is very important because it is effective both in explaining decisions and in forming and strengthening individual identity and their position in society. Following that, in an article, the

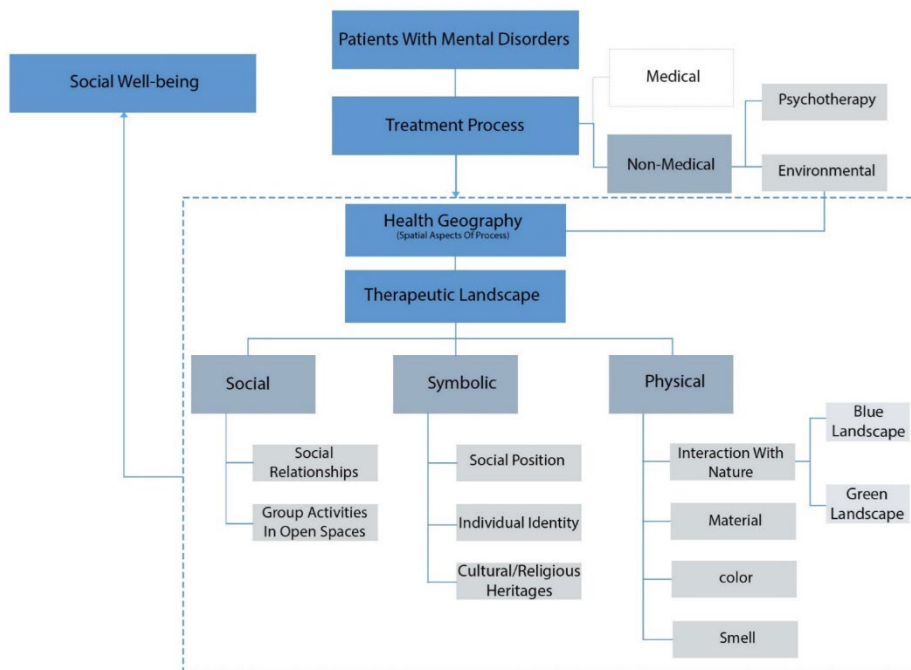


Figure 2: Theoretical framework and conceptual hierarchy

relationship between the therapist's view and the design of the hospital, especially the Psychiatric hospital and the effectiveness of this concept in the hospital design were investigated. This study was conducted based on in-depth interview with small groups to give the participants, who were the former patients, medical staff and personnel, opportunity to share their opinions and make decisions. (Curtis et al., 2007) and (Wood et al. 2013) address the degree of participation of the medical staff in the design of the hospital, and whether their experience in the hospital is the experience of a therapeutic landscape or not. In their research, the medical staff are considered as the central core in design decision-making. (Curtis et al., 2007) in their article has considered only the former patients who had a short treatment period in the hospital and were discharged, and (Wood et al., 2013) has taken into account only the medical staff in the hospital design process as the main core of participation.

In studying the related literature to the subject of this research, it was found that the background of research in this field has many gaps, one of which is the lack of attention to the social effects of space and the view of designers and architects on physical environments and the effects of their structural effects on the treatment process of the patients, which has been crucially important. Also, most newly established hospitals have been investigated in these studies, and the target population includes former patients who have completed their treatment and were discharged, or the medical staff, but little attention has been paid to the permanent patients, whose opinions, as residents of this small town, should be considered alongside those of the medical staff.

As a case study for the current study, there are a large number of patients in the Razi psychiatric hospital who are permanently hospitalized and are unable to live among ordinary people for a variety of reasons, including court cases, homelessness, and the severity of the disease, and the hospital is considered their home.

3. Materials and Methods

This study is a qualitative study in terms of its method and an applied study in terms of its purpose. Due to the primary purpose of this study, which is to provide a framework for designing

therapeutic landscapes within psychiatric hospitals, the descriptive phenomenological research method was selected. In phenomenology, events are analysed through the way actors perceive them in situations. Phenomenology focuses on the study of experience from an individual's perspective, putting emphasis on issues that are often overlooked by conventional methods of perception (Lester 1999). Descriptive phenomenology is a powerful way to understand subjective experience and gain insight into people's actions and motivations by questioning long-held assumptions and challenging conventional wisdom. It may contribute to the development of new theories, changes in policies, or changes in responses.

In this study, the field of study is the medical staff and patients of Razi Psychiatry Training Centre, which includes approximately 800 patients and 1200 personnel. The research data gathering method is a semi-structured, in-depth interview with patients, a focus group with medical staff, and objective observations by researchers for a total of 10 hours in the hospital landscape and wards. The sampling method is selective sampling, which involves the selection of patients who have an understanding of the topic so that they can provide accurate information to the researchers, and the research process does not interfere with their treatment process. In this process, theoretical concepts were developed, and at the conclusion 15 patients were interviewed. In addition, 15 members of the hospital's management and medical staff discussed the purpose of the study in the hospital's conference room for two hours with the researchers.

Using triangulation methods, researchers have been able to estimate the reliability of interviews and research findings. Triangulation refers to the use of multiple sources of data or approaches to analysis, in order to increase the validity of a study. Triangulation, which is used in research methods, aligns multiple perspectives and leads to a more comprehensive understanding of the target phenomenon (Salkind 2010).

Colaizzi's seven-step method was used to analyse the data. First, all of the interview transcripts with the participants were written down correctly and completely, and then they were

read over several times. In the next step, each of the extracted sentences and phrases related to the question and purpose of the study was saved in a separate file. This stage is known as the formulation of meanings. In the fourth stage, the concepts were formulated, linked to each other, and placed in a group of themes (the main themes). All these steps have been done through MaxQDA version 2020 software to increase the accuracy of the analysis.

3.1. General Profile of the Participants

It is significant to note that the statistical population of the study consists of 15 members of medical staff such as hospital manager, nurse manager, rehabilitation manager and paramedics and therapists, and 15 patients who have resided at the complex for more than a year, suffering from schizophrenia, bipolar disorder, and panic disorder.

4. Results

The current study used semi-structured in-depth interviews with patients as well as a focus group method with the medical staff at Razi Educational and Treatment Center to collect data. In the first stage of the interview, patients were asked "What kinds of spaces do you think the hospital needs that suit your interests?" and "What changes would you make to the hospital's premises and space?". Interviews proceeded based on the patient's responses, which varied from one to the next. In order to avoid causing discomfort or fear to the target patients, the researchers attempted to communicate with them prior to conducting the interview. As researchers conducted one-to-one interviews with patients in the hospital area, they carefully observed their choice of path, their reaction to various spaces, their speed of movement, and their choice of pause and sitting spaces. During the interview, a paramedic was accompanying the researchers to keep the situation under control and prevent any possible risks to the patients.

During the interviews with patients, the focus was on their way of life and how they spend their time. This included their experiences in the hospital and their interests. In order to determine the general framework for the study, it was necessary to understand their personalities, activities, colors, and spaces in which they enjoy being. At

this point, the researchers decided how to handle the interview based on the type of exposure and the reaction of the patients to the questions, and they completed the interview after obtaining the desired data. On average, each patient interview lasted 30 to 45 minutes, depending on their level of fatigue, boredom, and concentration.

As part of the second stage of data collection, 15 members of the medical staff, including hospital management, doctors, psychologists, supervisors, and paramedics, were asked to participate in a focus group on the topic of the research. It should be noted that this is the same group of staff that has spent considerable time with patients. They are familiar with their wishes, needs, and limitations, and the hospital's landscape as well. The researchers explained the topic of the research for an hour before asking the group for their perspectives. During the focus group meeting, the emphasis was on the physical and mental conditions of patients, as well as the activities and spaces that were useful for their treatment. It also included the many years of experience of the medical staff in communicating with mental patients. Furthermore, the concerns of the medical staff regarding very serious issues, including the confinement of spaces, safety, freedom of action, patient's right to choose, and key features for the design of spaces and areas used by psychiatric patients, were considered.

Following the interview with the patients, the medical staff focus group texts were incorporated into the analysis. Colaizzi's method was utilized for content analysis. The interview transcripts were examined several times by the researchers in order to gain a comprehensive understanding of them in the first stage.

After analyzing the interview transcripts, the second step involved categorizing them into key sentences pertaining to the research topic using MaxQDA version 2020 software. As part of the third stage, the meanings and concepts of each sentence were extracted and formulated; repetitive or out-of-study sentences were omitted. As a result of the fourth stage, the main themes were established by clustering the meanings and concepts that are related to each other. In table number 3, a summary of steps 1 to 4 is presented.

The themes discovered form the core of

Table 1. Steps 1–4 of Colaizzi's method

Themes	Formulated meanings	Significant statement	Index
Safety and freedom	When designing spaces, it's important to give patients the freedom to move and make sure they are safe.	The spaces should not be closed, even they should be designed in such a way that by using trees and green spaces and vegetation, the patient's vision is blinded to the walls of the hospital, even if it is necessary to use fences and walls, they should be placed at a distance so that they are not easily visible, and patients should not feel imprisoned and the fences should be covered with green space in the form of a green wall.	Male specialist 1 / Hospital manager
		It should be somewhere easy to roam, without the presence of paramedics such that we feel that someone is following us all the time. If it resembles the outside, no one wants to run away from here. It's even better than the outside if we could be free.	32 years old female patient 3, with bipolar disorder
		One of the children was disoriented, he fell to the ground, his nose was injured, but thanks God the paramedics came quickly, and nothing happened.	39 years old male patient 9, with Schizophrenia
		If there's water, we can sit by it and smoke cigarettes, if it's not too hot, we can even play volleyball. There's not enough room to sit, some people have to stand.	30 years old female patient 1, with Mental retardation
Inclusion	It's very important to make sure that the space is right for the age and health of the patients.	The designs should be flexible and it is possible to make minor changes to them and they should be diverse in terms of colour and shape.	Male specialist 12 / paramedic
		The spaces should be designed so that both younger staff and older patients can utilize them, preventing the patient from feeling constricted and confined.	Male specialist 1 / Hospital manager
		Most of the patients are old, they can't go far and they sit a lot, they get hurt and cry.	44 years old patient 7, with Schizophrenia
		The spaces should be such that younger as well as elderly patients have the ability to use them so that the patient does not feel restricted and closed and also have the right to choose the activity. It is worth mentioning that under the influence of the drugs they take, they have a low metabolism and even in mild weather, they feel cold quickly, therefore, beside the open spaces, some closed spaces that have the possibility of better heating should be provided.	Male specialist 5 / Rehabilitation manager
Using the five senses	Utilizing the five senses effectively improves patient's health.	From a psychological standpoint, gardening-like activities, such as vegetable gardening and fruit picking, are highly suitable and cause patient's environments to change.	Male specialist 14 / paramedic
		I like the atmosphere of youth and the old days; I wish it could be like those times, when they played old songs for us everywhere.	51 years old patient 10, with bipolar disorder
		I am a member of the hospital's musical ensemble. We enjoy going outdoor and composing for our friends and paramedics to view.	43 years old female patient 2, with Schizophrenia
Environmental Health	Ensuring environmental and space hygiene is effective in increasing patient attendance.	The hospital environment should be suitable in terms of air pollutants. For example, there is a cement factory road next to the hospital, which causes air pollution and noise pollution.	Male specialist 12, paramedic
		We once had a pool, but nobody wanted to swim in it because it was dirty and the water was green.	30 years old female patient 1, with Mental retardation

Analytical framework in designing the landscape of psychiatric hospital

Themes	Formulated meanings	Significant statement	Index
Social interactions	Patient's morale can be boosted by having social interactions and making new friends. These elements should be considered in the design of the areas and spaces.	Just as you and I talked for half an hour and came out of the ward, it was very good. God bless you!	52 years old patient 6, with bipolar disorder
		If they occasionally mixed the space between our ward and children's. I, who can never be a mother, would at least experience the sense of motherhood.	43 years old patient 11, with Schizophrenia
Nature	The incorporation of natural elements into the design of spaces is crucial.	Regarding the choosing of vegetation, it should also be the type that sheds leaves infrequently.	Male specialist 3/ Occupational therapy manager
		For other patients, interacting with animals and experiencing the feeling of being alive is important and they should interact with animals. For example, there should be a pond for fishing; seems like a good idea.	Male specialist 15 / paramedic
		In our ward, there is an aquarium, we go to look at fishes and feed them, after class we go and talk to the birds. A space has been prepared in the ward where there are flowers and plants. We water them and sit there and talk. The weather is nice.(delete)	40 years old patient 12, with Schizophrenia
Normal life	For patients, the space and design should resemble life outside of the hospital.	Patient's quality of life and its improvement are especially important because it prevents their deterioration.	Male specialist 4 / nurse manager
		These patients have lost their right to choose, even if we put 2 pairs of slippers in front of them, they cannot choose between them.	Male specialist 8 / nurse supervisor
		If one feels at ease and can live here, he doesn't want to run away. Well, because he feels at home.	30 years old female patient 1, with Mental retardation
Group activities	Group therapy outside of the wards is appealing to patients and beneficial to their treatment progress.	Mentally ill individuals require a normal life and to feel useful and participate in some activities.	Male specialist 7 / nurse supervisor
		Some patients are healthy, but because they are inactive, they eventually become ill and unable to move.	59 years old female patient 4, with bipolar disorder
		It is essential to engage patient's senses with light and fresh air in open spaces to aid in the treatment process.	Male specialist 6 / Gardener
Harmony	The design of the space should be consistent with cultural and historical considerations and should be memorable.	The new spaces must be compatible with the history and culture of the patient and the hospital.	Male specialist 11/ paramedic
		I enjoy going on pilgrimages; we went to Mashhad; I had a great time and I miss it.	47 years old male patient 5, with Schizophrenia
		For design, you have to consider, culture and history are very significant for patients with religious backgrounds. Thus, these patients are closer to God.	Female specialist 9 / paramedic

Table 2. Design framework, Main objective, themes and sub-themes

Main Goal	Themes	Sub-themes
Providing a framework for the design of the psychiatric hospital's spaces and landscape	Safety and freedom	<ol style="list-style-type: none"> 1. Green wall 2. Hospital entrance 3. Dimensions and scale of spaces 4. Split Level 5. Freedom of action 6. Floor material 7. Furniture
	Inclusion	<ol style="list-style-type: none"> 1. Distance 2. Services 3. Space flexibility 4. Weather conditions 5. Physical disability
	Utilizing the five senses	<ol style="list-style-type: none"> 1. Materials and colours 2. The effect of colours 3. Gardening 4. Nostalgia 5. Music
	Environmental Health	<ol style="list-style-type: none"> 1. Sound pollutants 2. Air pollutants
	Social interactions	<ol style="list-style-type: none"> 1. Meeting and Interacting with new people 2. Experience the feeling of motherhood
	Nature	<ol style="list-style-type: none"> 1. Vegetation 2. Interaction with animals
	Normal life	<ol style="list-style-type: none"> 1. Quality of life 2. The right to choose
	Group work	<ol style="list-style-type: none"> 1. Activity in open spaces 2. Recreation therapy 3. Sports
	Harmony	<ol style="list-style-type: none"> 1. History 2. Culture 3. Religious backgrounds

the research question and topic, and the main framework for designing the psychiatric hospital's landscape and premises.

This framework was put together from the interviews with patients and medical staff at Razi Psychiatric Hospital, with the goal of improving their health and the way they are treated. It shows the main focus and goal of the research. In addition, these themes have been evaluated using the triangulation technique and the repetition of each section, which provides a comprehensive response to the research question. This framework is the result of 20 pages of interview transcripts that have been transformed into 164 codes,

31 sub-themes, and nine major themes in the fourth, fifth and sixth step of Colaizzi's method. The medical staff approved this framework in a separate meeting during the seventh step of Colaizzi's method.

5. Discussions

In presenting this framework, it was attempted to be compatible with the needs, wishes, and treatment process of the patients and can increase patient admission in these spaces, so that both the patients, their families, and the medical staff can show a greater desire to be and live in the hospital. The most significant result of

this study is an explanation of the function of the social dimension in the treatment process. This is crucial because mental disorders in Iran are caused by social issues and problems; therefore, special consideration should be given to the social aspects when designing solutions. This issue has been one of the main demands of patients and medical staff in the interviews.

The majority of psychiatric hospitals feature a wide range of patients, from the young to the elderly, with a variety of diseases, therefore designed spaces and landscapes should be inclusive, appealing, and usable for all patients.

One of the most effective factors in the improvement of patients is communication with new people, which increases social interactions. Spaces should be designed to encourage group work to avoid patient isolation. Also, mixing the space used by children with the space used by women can provide patients with the experience of being in a family.

These patients, like other individuals, are interested in having a normal life and generally have the freedom to choose the recreation and relaxation spaces they want. The spaces should be built in a way that improves the quality of life of the patients and allows for simple modifications, so that the patient's desire to stay in the space is not lost or repetitive.

Many people with mental illnesses experience premature aging, the primary cause of which is inactivity. Spaces should facilitate walkability and improve patient mobility. Effective are daily workout spaces, health roadways, and green pathways.

Interacting with nature is one of the highly suggested activities by the medical team, and patients have also expressed interest in it. Interacting with flowers, plants, trees, and domestic animals has proven to be a beneficial method of accelerating and enhancing the healing process for patients.

In order to prevent the patients from feeling imprisoned by the walls or fences, the hospital's enclosure should be partially or completely covered with trees, bushes, and other vegetation. The hospital's entryway should be welcoming and inviting, dispelling society's perceptions of the institution. To be practical and functional for the hospital, the areas' scale and scope should be modest. An abundance of furniture is another

crucial factor, as it can relax exhausted patients or protect them from wind, rain, and sunlight.

On the other hand, one of the desires and needs is freedom and safety, which means that patient's physical health is also considered in space. In this regard, the split level should be minimized, the type of flooring should not cause slippage, and it should be able to absorb water so that the feet of patients who use slippers regularly do not become fatigued and slippery. Additionally, the edges should be rounded and curved to minimize injury in the event of a fall. The spaces should be located at an appropriate distance from the wards to encourage patient mobility. Important factors include the proximity to water closets and the placement of enclosed spaces next to open spaces so that patients and space users have the option to choose based on weather conditions.

Environmental hygiene is crucial for patients and has a significant impact on their desire and motivation to stay in the space. The placement of spaces should be such that they are not in the direction of the wind, so that less air pollution can enter the space. In addition to covering the harsh material of fences, green walls are also capable of concealing noise pollution.

The patient's five senses must be involved by the design. Using a variety of calming colours, wooden furniture, music, and distinctive features might be useful. In addition, allowing patients to alter the environment is very beneficial to their healing process, and fruit harvesting and gardening are excellent possibilities.

The design should take into consideration the culture and life history of the patients and the hospital. In this scenario, these patients will feel comfortable and at ease.

6. Conclusion

In addition, the psychiatric hospital is one of the few hospitals where patients stay permanently, because the hospital is considered as their home and has become an important part of their lives. These patients spend a significant amount of time at the hospital during the day, which raises the importance of the space and place's proper design within the hospital. The only part of the hospital that should not resemble a hospital is the space outside of the wards. These spaces are the

patient's recreation places and help release the mental pressure caused by the walls in the ward.

Due to the impact of the environment on the recovery process of the patients, the design of each of these spaces in the psychiatric hospital is vital and should resemble a normal life outside of the hospital, particularly for those patients who are permanently hospitalized.

Urban design, meantime, is a field of study that examines the features of a space in relation to its users and general conditions, and by analysing the problem, it develops a solution and offers it in the form of a framework and then an appropriate plan.

By examining the design of hospitals throughout time, it can be seen that the positive impact of outdoor spaces on the healing process of patients has been considered for a long time. However, this perspective has been primarily physical and aesthetic, and site selection has received the most consideration, while social, cultural, and emotional dimensions have been neglected. In the previous studies, patients were not given the right to choose, and this issue has led to disruption in the most basic matters of the patient's lives and has not met their spatial needs.

The current study seeks to fill existing gaps in the literature by providing an executive and practical framework for the design of hospital landscapes that is efficient and applicable in light of the hospital's financial and legal conditions, as well as the researchers' existing limitations.

In this regard, in the first stage, a comprehensive and complete understanding of the hospital area was established among the researchers, and after that, the potentials and limitations of the design were identified. In the second step, 15 patients with suitable conditions and a willingness to participate in the interview were selected and interviewed in depth, with a focus on their desires and needs in the hospital setting. Following that, 15 members of the hospital's medical staff were gathered to form a focus group and discussed for 2.5 hours about physical conditions and safety in the design.

Then, in the next step, the transcripts of the interviews with the patients and the medical staff were combined, and the 7-step Colaizzi method was selected for analysis based on the objectives and goals of the research.

The analysis of the interview transcripts resulted in a total of 164 codes, 31 sub-themes, and 9 main themes, which form the main framework for the design of the psychiatric hospital landscape. According to the current framework, social issues, freedom, the right to choose, social interactions, and inclusion are crucial in the process of treating patients, and it is recommended that they be incorporated and given special consideration in future hospital landscape designs.

7. Declaration of interest statement

We certify that the contributors' and conflicts of interest statements included in this paper are correct and have been approved by all co-authors. No conflict of interest exists.

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