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**Environmental Physical Assessment in Mental Health Services for
Adolescents: Using Mixed-Method Analysis**

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Abstract

One of the effective elements of the social program is providing a conducive environment and adequate and suitable infrastructure that can influence the target group's behaviour. This study examines the provision of physical facilities for mental health services. This study surveyed 400 respondents and interviewed seven adolescents. Findings indicated that infrastructure facilities and a conducive environment influence the service's behaviour and effectiveness. This study will increase awareness of the importance of environmental conservation and social care, encourage individuals and organisations to adopt sustainable and socially responsible practices and enhance environmental laws and regulations.

Keywords: Physical Environmental; Mental Health Services; Adolescent; Environment Behavior

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1.0 Introduction

Mental health issues in Malaysia are becoming increasingly serious in the community. Based on the National Health and Morbidity Survey (2019), a total of 424,000 adolescents were found to suffer from mental health problems such as depression, anxiety and sadness, especially in the era of the COVID-19 pandemic that began in early March 2020. Due to the issue of adolescent mental health becoming important and the government's intention through the Mental Health Policy and the Adolescent Health Policy, which is to ensure good well-being of life, social service planners at the government and NGO levels have drawn up and implemented many programs and social services in the form of awareness and the importance of health (Hezzrin et al., 2024; Norsuhaily et al., 2020).

Mental health services is a form of a diverse range of diagnostic, therapeutic, and rehabilitative therapies to address mental health issues and enhance mental well-being. An important factor in ensuring the effectiveness and efficiency of mental health care is a conducive environment and appropriate physical facilities that meet their needs. Furthermore, the environmental factor has an impact on social interaction. It is considered a vital component in creating a stimulating environment among persons living in a building, enhancing both their physical and psychological health (Hezzrin et al., 2024; Ahmed & Al Ali, 2023; Mohd Syaiful Nizam et al., 2023).

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Planners and developers of the services frequently use a 'feeling of place' as a desirable objective when formulating plans to enhance the quality of life for inhabitants within a community (Ahmed & Al Ali, 2023). When planning and developing facilities for social services, factors such as building designs and locations must be considered to ensure the efficient and successful delivery of these services (Hezzrin et al., 2024). Nevertheless, prior research examining this matter, especially for adolescent mental health services in Malaysia, is scarce. Several studies prioritise the condition, neglecting the service system and the execution of services, particularly for physical infrastructure and environmental behaviour. Thus, it is crucial to investigate the design of these services, which entails the construction of physical infrastructure due to the growing demand for mental health care in the community. These research objectives are to examine respondents' satisfaction level towards the provision of mental health services facilities and analyse the extent to which environmental variables and physical amenities influence behaviour and the effectiveness of the recovery process.

2.0 Literature Review

The design of mental health facilities can enhance human connections, which is crucial for mental health therapy. It may contribute to fulfilling clients' fundamental requirements for protection, security, self-esteem, and the cultivation of interpersonal and social skills (Willis, 1980). Patterson and Williams (2005) explore the association between place dependency, place satisfaction, and pro-environmental conduct. Research has also demonstrated that the physical environment can directly and indirectly impact mental health due to its specific attributes (Marzukhi et al., 2020).

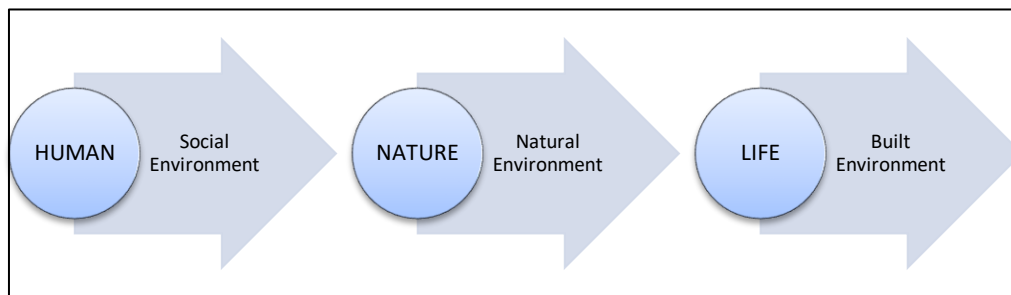


Fig. 1: Function of Ecology Planning
Source: Adaptation from Çelikyay (2016)

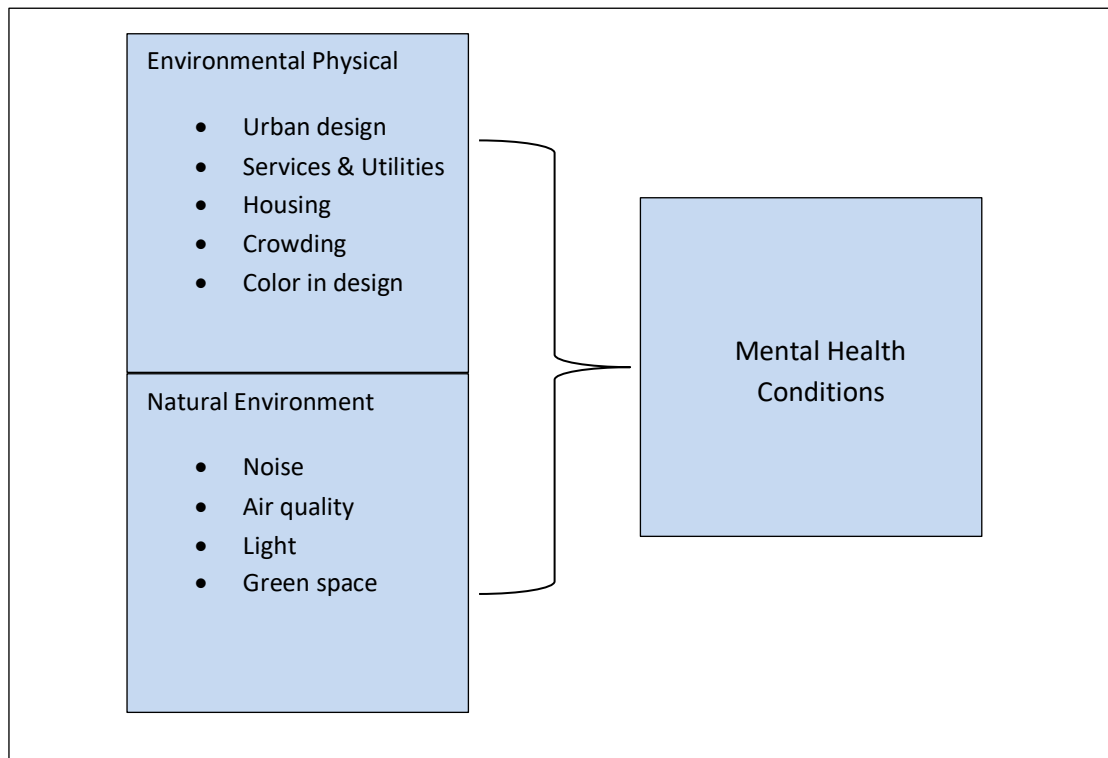


Fig. 2: Association between physical environment and mental health conditions
Source: Marzukhi et al., (2020); Wilson et al., (2023); Weber et al., (2022); Willis (1980)

Willis (1980) studied six Indiana community mental health facilities in 1977 and 1978. The study involved six administrators of the facilities who completed a comprehensive questionnaire that specifically examined the impacts of different architectural characteristics. Willis (1980) conducted official interviews with each administrator and thoroughly explored the facilities through an in-depth tour. Approximately 20 additional staff members were interviewed informally. The data derived most frequently concerning convenience and interior designing built for the client. The study provided design recommendations for mental health facilities in various sections, including reception and admission areas, corridors and stairwells, therapists' offices, inpatient rooms, and dayrooms. She also stated the client's concern was the colour, visual patterns, light, and the choice of materials and finishes. The results of this finding are also in line with Pourhadigavabari and Mahmoudi's (2013) study, which is the external and internal factors of the infrastructure of health care services that should be considered in the planning of design and implementation of the local hospital and one of the colour and its effect.

Meanwhile, Wilson et al. (2023) studied promoting mental health recovery by design, which is physical, procedural, and relational security in the built mental health environment. A qualitative descriptive study was conducted, utilising focus groups and in-depth interviews to collect data. The study included 38 current inpatients, carers, and 27 staff members from a single regional inpatient mental health hospital. The interviews and focus groups conducted with patients, carers, and mental health practitioners unveiled three primary themes that align with the existing body of literature. According to Wilson et al. (2023), three themes were the design of rooms should prioritise physical security for theme 1. Theme 2: Strategic planning to facilitate interactions between people and systems will enhance relational security. Lastly, theme 3: Enhancing service reliability should encourage the implementation of procedural safeguards. This interview study highlighted the importance of safety in designing physical facilities at mental health centres. This shows the need for security to guarantee the safety of patients and staff at the centre.

Weber et al. (2022) systematically reviewed the physical and socio-physical environment of inpatient mental health care facilities. The study focused on several aspects, such as design characteristics, ambient circumstances, and privacy, and included all empirical study designs. The findings indicate limited evidence suggesting the influence of the physical healthcare environment on patients' mental health, well-being, and recovery results. (Weber et al., 2022). Most literature reviews are in the form of qualitative data, namely interviews and content analysis. Therefore, a research gap exists in this particular area. In this study, the researcher focused on a mixed method, namely quantitative data (score mean) and interviews for qualitative data.

This research framework can be used as a guide for social planners to build and provide mental health care facilities and physical facilities. In ecological planning, there must be three elements: the social environment, the natural environment and the built environment (fig 2). Through the framework of a previous study by (Marzukhi et al., 2020; Wilson et al., 2023; Weber et al., 2022; Willis 1980), the physical environment and the natural environment become the factors in the mental health condition of an individual (Fig 1).

3.0 Methodology

This study applies the pragmatism paradigm. This paradigm analyses in-depth and emphasises developing shared understandings to develop shared lines of human attitude and behaviour issues (Creswell & Creswell, 2022). A sequential exploratory design was used for a quantitative and qualitative mixed methods study. It was conducted in the Malaysian Peninsular, which involved four zones: East Zone (Terengganu), West Zone (Selangor), North Zone (Pulau Pinang) and South Zone (Johor). The study sample was 400 adolescents for a quantitative survey of 100 respondents for each Zone, and seven (7) adolescents who had received mental health services were interviewed. It used a purposive technique for sampling. The research tool utilised in this study was a designed questionnaire survey known as the Integration Evaluation of Mental Health Program (IEMHP) and a semi-structured interview session using an interview protocol in a collection data process. During the survey data collection process, the researcher prepares a field study application approval letter from the Ministry of Higher Education. The informant must also complete a consent form to participate in the interview study session.

The research analysis was descriptive analysis and thematically qualitative. SPSS and ATLAS TI Version 23 software were used for the descriptive data and interview data analysis. Before conducting the interviews, consent was gained from the informants by distributing a consent form.

4.0 Finding and Discussion

4.1 Quantitative Analysis

This part offers the results of data analysis related to the mean, standard deviation and indicator level regarding their level of satisfaction with the physical environment of mental health services (Table 1).

Table 1. Mean, Standard Devian and Indicator Level of Environmental Physical for Mental Health Services

Item	Mean	Standard Deviation	Indicator Level
1. Mental health services held in a physical environment in a comfortable condition	4.22	1.03	High
2. The desk provided during the mental health services is sufficient	4.14	1.09	High
3. The seats provided during the mental health services are sufficient	4.17	1.06	High

4. The learning materials provided during the mental health services are sufficient	4.03	1.14	High
5. The tables provided during the services are appropriate	4.07	1.13	High
6. The seats provided during the mental health services are appropriate	4.12	1.11	High
7. The learning materials provided during the mental health services are appropriate	4.08	1.16	High
8. The location of the mental health services's location, making it difficult for participants to participate.	3.57	1.39	Moderate
9. The physical environment of mental health services provided save financial costs	3.92	1.17	High
	3.19	1.35	Moderate

Source: Authors

The study showed a total mean and standard deviation was 3.19 ± 1.35 . This showed the impact of the physical environment was at a moderate level. The mean of the highest item was "Mental health services held in a physical environment in a comfortable condition", as shown in item 1. That was 4.22 ± 1.033 (High). Meanwhile, the lowest indicator level was item 8. That was "The mental health services' location, making it difficult for participants to participate (3.57 ± 1.39). However, this study was truncated with qualitative data to increase the reliability of the study data.

4.2 Qualitative Analysis

This study involved seven (7) adolescent patient informants in Peninsular Malaysia. The study's findings encompass the demographic attributes of the informants, which relate to the background information obtained about them, including their gender and age. Table 2 presents the demographic attributes of the adolescent participants interviewed regarding the accessibility of physical environment for mental health care. The informants' ages ranged from 21 to 22 years. Anuar (2001) defines late adolescence as the period that includes individuals aged 16 to 25.

Table 2. Demographic Profile of Informants

Informant	Gender	Age
1	Female	21
2	Male	21
3	Female	22
4	Female	22
5	Female	21
6	Female	21
7	Male	22

Source: Authors

Figure 3 depicts the three main themes regarding the availability of physical infrastructure for mental health services, as derived from interviews with adolescent participants. The main themes were derived from the semi-structured interviews. The following items are: 1) Appropriate physical environment, 2) Compatibility of building design, and 3) Appropriate location.

4.2.1 Theme 1: Appropriate physical environment

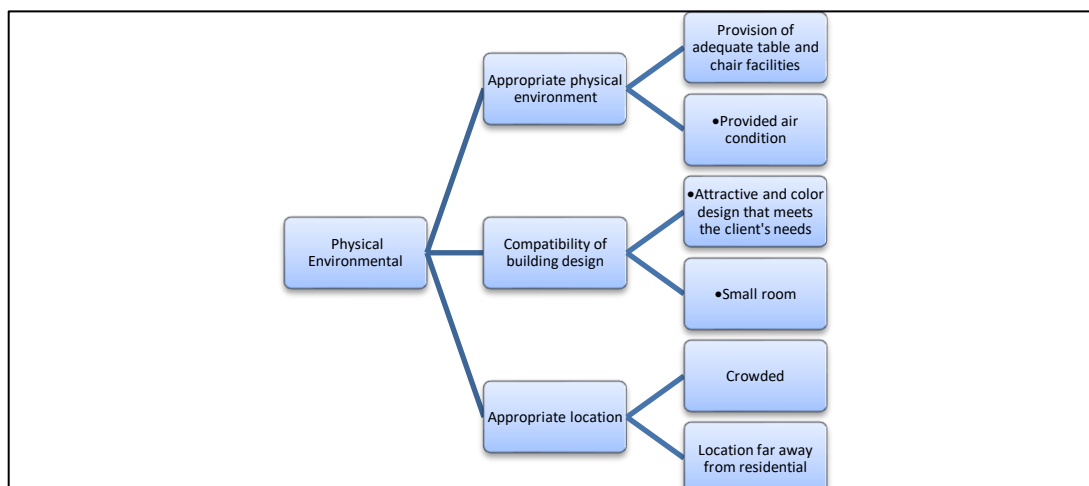


Fig. 3: Thematic and Sub-Thematic in Environmental Physical for Mental Health Services

Source: Authors

The seven informants were content with the provided physical amenities for the first theme. They confirmed that the built environment was appropriate, a secluded area with air conditioning and sufficient tables and chairs. Informant 2 stated that the recuperation area was enjoyable due to air-conditioning, which maintained a cool temperature. These ample facilities facilitate the process of mental health recovery. They are satisfied with the facilities provided. This study corroborates the findings of Hooper et al. (2023) and Willis (1980), which suggest that physical facilities' characteristics substantially influence clients' recovery.

"The amenities provided in this place instil a sense of comfort and relaxation in me. The temperature is not high. The coldness is a result of the air conditioning. The favourable conditions facilitated my healing process. The physical amenities, such as tables and chairs, for rehabilitation activities are abundant and offer a high level of comfort" (Informant 2).

This study showed that Willis (1980) requires design consideration for mental health facilities. The results stated that informants were satisfied with the physical facilities provided, which is seen as one factor in the effectiveness of mental health rehabilitation (Hezzrin et al., 2024; Ahmed et al., 2023 & Marzhuki et al., 2020). This study was also quite different from other studies' findings because it emphasised the appropriateness and adequacy of physical facilities such as tables and chairs for staff and rehabilitation clients. Providing these physical facilities is important because sufficient facilities and a comfortable environment comfort the client. Indirectly, they feel the atmosphere of an effective therapeutic environment.

4.2.2 Theme 2: Compatibility of building design

Most (six) informants expressed contentment with the building's pleasant and aesthetically pleasing design, and the walls are decorated with attractive colours. This mental health rehabilitation service is also furnished with intriguing therapeutic instruments. This perspective is consistent with the study conducted by Treklevs et al. (2020), which suggests that individuals undergoing rehabilitation can gain advantages by incorporating innovative spatial design to promote the growth of imagination and creativity.

"I love the facilities here; the design is attractive and comfortable. This eased my recovery process. By providing other related tools or facilities. I am fond of the amenities available at this location, as the design is visually appealing and colourful and provides a comfortable environment." This facilitated my healing process" (Informant 2).

Nevertheless, certain individuals lack satisfaction with the sufficiency of the physical infrastructure for mental health care in their locality. Informants report that mental health facilities are characterised by restricted space, insufficient capacity, and reduced suitability. Informant 6 reports that the activity room has restricted dimensions and arrangement, which means it can only accommodate a maximum of two people: the client and the practitioner. Furthermore, additional clients were required to wait outside due to the compact area's restricted capacity and the presence of only one professional.

"Due to its modest size, the rehabilitation activity room has a limited capacity and cannot handle many individuals. I am simultaneously the sole client and practitioner" (Informant 6).

As Willis (1980) said, facility design is the behavioural element of the environment. According to Pourhadigavabari and Mahmoudi (2013), items should be considered when planning and implementing mental health services. One of them is colour and its effect. This finding is also in line with the findings of Wilson (2023), who stated that to promote effective mental health, one of them is to design attractive physical facilities with the characteristics of a therapeutic environment. Hoisington et al. (2019) suggest that improving the condition of the built environment can improve mental health outcomes.

4.2.3 Theme 3: Appropriate location

Furthermore, as reported by the study's informant, the mental health service facilities are deemed inadequate in terms of their location. Informants have reported the existence of mental health rehabilitation facilities that are situated at a considerable distance from their residences. While the service is available in the urban region, the establishment is in a bustling city and does not provide automobile parking facilities. This leads to a decrease in the motivation of informants to schedule further meetings with mental health practitioners.

"The mental health service centre is far from the residential area. If the facility or service area is situated within the city, it experiences high activity levels and lacks enough parking facilities for vehicles. As a result, I could not attend my appointment with the practitioner"(Informant 4).

This discovery illustrates that the availability of location or geographic factors also impacts the client's mental health recovery process. The placement of service facilities in remote areas poses difficulties in obtaining essential medical treatment. The existence of these service facilities in urban locations is also marked by significant traffic congestion, which reduces clients' motivation to attend therapy sessions.

5.0 Conclusion & Recommendations

The study examines how adolescent patients view and interpret their experiences within mental health services. This includes their feelings, thoughts, and attitudes towards the services they receive. The emphasis is on the facilities (such as buildings, rooms, and equipment) and mental health services' physical environment (such as the overall atmosphere and comfort). This study is crucial for assessing the extent to which the program's physical environment is adequately equipped to facilitate the individuals' rehabilitation process.

This implies that they require the provision of sufficient and suitable physical amenities to provide a good healthcare environment setting. The psychosocial aspects of adolescents undergoing the rehabilitation process are influenced by the physical environment design of the building, such as an attractive design with colour and the suitability of the rehabilitation area.

This study has limitations as it relies solely on the adolescent population who have previously experienced rehabilitation or are undergoing therapy. The researchers propose that future studies employ a larger cohort of respondents and informants to augment the trustworthiness of the findings.

However, it offers essential information for social planners in the healthcare environment field, policymakers, government entities, and relevant non-governmental organisations (NGOs) to improve adolescent mental health services. The results of this study also guide the alignment of these services with the overall objective of enhancing the welfare of persons, as specified in the Mental Health Policy of Malaysia.

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Paper Contribution to Related Field of Study

This paper contributes to the area by introducing novel methods for combining environmental and physical design with therapeutic environments. These approaches result in notable enhancements in both ecological sustainability and adolescent well-being.

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