Investigation of Hospital Waiting Areas for Children's Wellbeing Through Components of Interior Design in Northern Cyprus and Kuwait

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ABSTRACT

This study aims to investigate the impact of interior design components such as colour, material, light, and furniture on the well-being of children in hospital waiting areas. The research focuses on children's perception of space and their sense of belonging and safety within these spaces. The study also explores how different components of interior space, including colour, artificial lighting, materials, textures, furniture and fixtures options, can influence a child's well-being in these settings.

This study will conduct case studies in selected children's hospitals in Northern Cyprus and Kuwait. The case studies in these two distinct regions were chosen to understand the influence of cultural and regional differences on the effectiveness of interior design components. Northern Cyprus faces challenges in providing quality healthcare, especially for children, while Kuwait's healthcare sector has seen significant growth. The study will compare the psychological effects and spatial findings in paediatric hospitals in these two countries. The research is limited to five hospitals in each country for diverse and comparative research.

The recommendations provided in this study are based on general developmental theories and may not necessarily apply to all children. Every child is unique and may have their individual preferences and needs that may not be fully addressed by the design recommendations provided in this study. Therefore, it is important to consider the specific needs of each child and their family when designing waiting room sections. The findings of this research are intended to guide designers in creating more child-

friendly hospital spaces, thereby enhancing the well-being of children during their hospital visits.

Keywords: hospital interior space, waiting area, well-being, interior design components, sense of belonging.

ÖZ

Bu çalışma, hastane bekleme alanlarındaki renk, malzeme, ışık ve mobilya gibi iç tasarım bileşenlerinin çocukların refahı üzerindeki etkisini araştırmayı amaçlamaktadır. Araştırma, çocukların mekân algısına, bu mekânlara ait olma ve güvenlik duygularına odaklanıyor. Çalışma aynı zamanda renk, yapay aydınlatma, malzeme, doku, mobilya ve demirbaş seçenekleri de dahil olmak üzere iç mekanın farklı bileşenlerinin bu ortamlarda çocuğun refahını nasıl etkileyebileceğini araştırıyor. Bu çalışma, aşağıdaki gibi iç tasarım bileşenlerinin etkisini araştırmayı amaçlamaktadır: hastane bekleme alanlarındaki çocukların refahı üzerinde renk, malzeme, ışık ve mobilya. Araştırma, çocukların mekân algısına, bu mekânlara ait olma ve güvenlik duygularına odaklanıyor. Çalışma aynı zamanda renk, yapay aydınlatma, malzemeler, dokular, mobilya ve demirbaş seçenekleri dahil olmak üzere iç mekanın farklı bileşenlerinin bu ortamlarda çocuğun refahını nasıl etkileyebileceğini de araştırıyor.

Bu çalışmada Kuzey Kıbrıs ve Kuveyt'teki seçilmiş çocuk hastanelerinde vaka çalışmaları yapılacaktır. Bu iki farklı bölgedeki örnek olay çalışmaları, kültürel ve bölgesel farklılıkların iç tasarım bileşenlerinin etkinliği üzerindeki etkisini anlamak için seçilmiştir. Kuzey Kıbrıs, özellikle çocuklara kaliteli sağlık hizmeti sağlama konusunda zorluklarla karşı karşıyayken, Kuveyt'in sağlık sektörü önemli bir büyüme kaydetti. Çalışmada bu iki ülkedeki çocuk hastanelerindeki psikolojik etkiler ve mekânsal bulgular karşılaştırılacaktır. Araştırma, çeşitli ve karşılaştırmalı araştırmalar için her ülkedeki beş hastane ile sınırlıdır.

Bu çalışmada sunulan öneriler genel gelişim teorilerine dayanmaktadır ve tüm çocuklar için geçerli olmayabilir. Her çocuk benzersizdir ve bu çalışmada sunulan tasarım önerilerinin tam olarak karşılayamadığı bireysel tercihleri ve ihtiyaçları olabilir. Bu nedenle bekleme odası bölümleri tasarlanırken her çocuğun ve ailesinin özel ihtiyaçlarının dikkate alınması önemlidir. Bu araştırmanın bulgularının, tasarımcılara daha çocuk dostu hastane alanları yaratma konusunda rehberlik etmesi ve böylece çocukların hastane ziyaretleri sırasında refahını artırması amaçlanıyor.

Anahtar Kelimeler: hastane iç mekanı, bekleme alanı, iyilik hali, iç tasarım bileşenleri, aidiyet duygusu.

DEDICATION

To My Family

ACKNOWLEDGMENT

I would like to take this opportunity to express my deepest appreciation to my thesis supervisor, Assist.Prof.Dr. Ahenk Yılgın Damgacı. Her unwavering support, guidance, and mentorship have been instrumental in helping me complete this thesis. Without her invaluable assistance, this achievement would not have been possible.

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To my supervisor, friends, and family, I say thank you from the bottom of my heart. Your support and encouragement have been a vital part of my success, and I could not have achieved this without you.

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Chapter 1

INTRODUCTION

The subject of this study is the impact of interior design components on children's well-being in hospital waiting areas, particularly in Northern Cyprus where there is a notable research gap. Background information on this topic, along with the research questions, aims, methodology, and limitations of the study, will be discussed in detail in the subsequent sections, providing a comprehensive overview of the study.

1.1 Background

When designing a child-friendly waiting room section in hospitals, it is important to consider the developmental needs and preferences of children of different ages. According to child psychologists, children's cognitive and emotional development varies depending on their age, and they may have different reactions to stimuli and environmental factors (Bailey, 2023). For example, young children may be more sensitive to loud noises and bright colours, while older children may prefer more interactive and engaging activities. The elements of color, lighting, materials, textures, furniture, and fixtures are recognized as fundamental components of interior design. This is supported by various sources such as "The Interior Design Reference & Specification Book" (O'Shea, Grimley & Love, 2013).

This research is significant as it addresses the need for age-appropriate design in hospital waiting rooms, which can greatly enhance the comfort and well-being of

children during their hospital visits. It also highlights the importance of the physical environment of hospitals in shaping these experiences.

Therefore, it is important to design waiting room sections that are age-appropriate and can accommodate the developmental needs of children (Schriefer, 2022). For example, younger children may benefit from areas with soft play equipment and toys, while older children may prefer areas with games, books, and technology (Children's Hospital of Philadelphia, 2021).

In addition to considering the developmental needs of children, it is also important to consider cultural and socio-economic factors. According to a study by the National Centre for Biotechnology Information, cultural and socio-economic factors can significantly impact the well-being and satisfaction of paediatric patients and their families in hospital waiting rooms. Therefore, it is essential to design waiting room sections that are culturally sensitive and can accommodate the diverse needs and preferences of patients and their families (Oppenheim & Rehill, 2020).

The first person/persons that children interact with after their families from infancy are doctors and therefore hospitals in a spatial sense. It has been stated and observed by various sources that there is a fear, albeit indirectly, from the doctor, examination, or compulsive developmental needs such as needles in children. Precisely in this context, the waiting rooms/spaces of the hospital are a potential transition space to overcome or trigger this fear (Taber, Leyva, & Persoskie, 2015).

It is important that waiting areas, which are a bridge or a transition zone between the outside and the examination area and even between the family and the doctor, are well designed for children; It gives rise to the importance of the space design of the waiting areas and the importance of choosing the right material, the right light and the right colour (Zraati, 2013). These components contribute to the overall physical environment of hospitals and can significantly influence a child's experience.

The use of colour, light, and materials in the design of interiors for children's hospitals can have a significant impact on the psychological well-being of young patients. It is important for these spaces to be welcoming, comfortable, and visually stimulating, as this can help to alleviate anxiety and promote healing. This underscores the role of the physical environment of hospitals in supporting the health and well-being of its youngest patients.

Colour, light, and materials are powerful tools in interior design as they can influence the mood, behaviour, and cognition of users. Different colours and light conditions can affect visual perception, arousal level, and emotional state. For example, blue and green colours have been shown to have a calming effect, while red and yellow can be stimulating (Herdean, 2022). Materials can also influence haptic perception, thermal comfort, and acoustics. For example, textured materials can provide a sense of tactile stimulation, while smooth materials can have a calming effect. In addition to considering the visual aspects of the design, it is also important to consider the functionality of the space (European Committee for Standardization, 2007). The layout of the space should be logical and efficient, with clear circulation patterns and easy access to necessary equipment and supplies. The space should also be flexible and

adaptable, allowing for different configurations and activities depending on the needs and preferences of the users (Reisinger, Knoll, & Kovacic, 2021).

Despite the importance of these considerations in the physical environment of hospitals, there is a notable research gap, especially in Northern Cyprus where there are not many studies done about the consideration of children in hospital waiting areas. This research aims to fill that gap and contribute to the existing body of knowledge on this topic. The findings of this research will provide valuable insights for designers, helping them to better understand the components of interior design and their impact on children's well-being, thereby contributing to the creation of more child-friendly hospital spaces.

1.2 Structure of Thesis

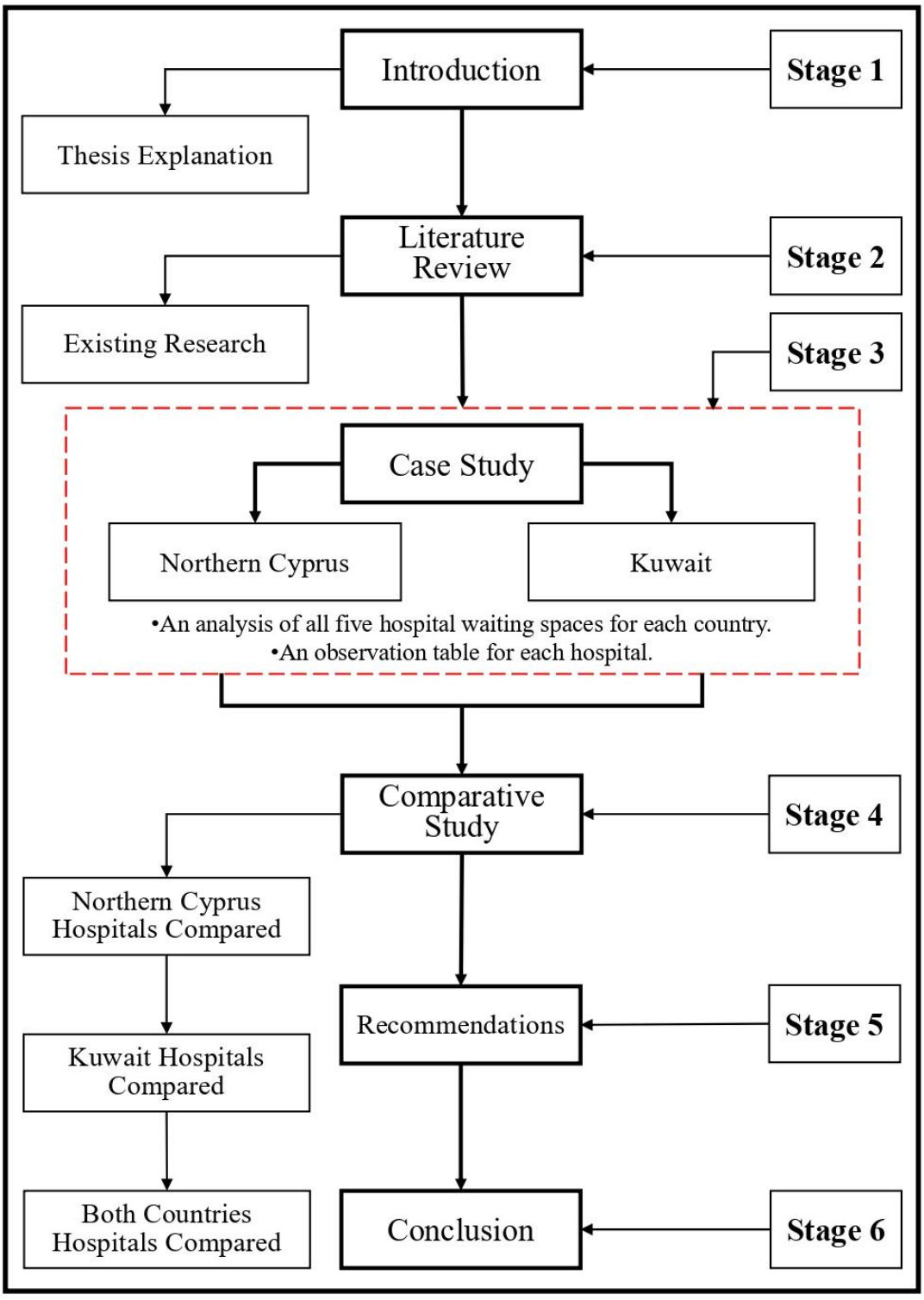


Figure 1: Structure of The Thesis

1.3 Problem Definition

The physical environment of hospitals, particularly the interior design of children's hospitals, is an important aspect that must be considered when creating spaces for them. The design of paediatric waiting spaces is an important aspect of creating a positive and welcoming environment for children and their families. According to HDR (2019), a global architecture and engineering firm, “designing for young patients means inspiring confidence, encouraging playfulness and offering hope”. The waiting space, as part of the physical environment of hospitals, can influence children’s psychological well-being, sense of belonging, and safety. Baron-Cohen (2002) emphasizes that children's unique way of perceiving and interpreting the world is due to their limited cognitive, emotional, and physical capabilities.

The problem this research addresses is that waiting rooms in hospitals are generally designed for adults without considering the needs of children. This causes children to feel uncomfortable, negatively affects their well-being, and may prevent them from feeling a sense of belonging or safety in these spaces (Krishnamurthy, 2019). Designing a waiting room that is engaging for children must use the interior design components such as colour, furniture and fixtures, texture, light, materials which are part of well-being in a space; and which affect the sense of belonging and safety.

1.4 Aims of the Thesis

The objective of this research is to explore the significance of creating a child-oriented environment in the physical environment of hospitals, particularly in the design of children’s hospital waiting spaces. The focus of this study is to determine the Well-being in interior of hospitals waiting spaces with providing the right combination of colour, light, and materials to ensure that children's psychological and emotional needs

are met a s sense of belonging and safety. The study will contribute to the growing body of research that emphasizes the importance of designing healthcare spaces that are sensitive to the unique developmental stages of children.

The goal of this research is to provide designers with practical recommendations for creating child-friendly spaces that enhance the overall quality of care and improve patient outcomes. By taking a child-centred approach to design, designers can create environments that not only meet the functional requirements of healthcare spaces but also contribute to the emotional and psychological needs of children. By gaining a better understanding of how children perceive and interact with their physical environments, designers can create spaces that promote healing, reduce anxiety, and enhance the overall experience of care for both children and their families.

1.5 Questions for the research

To achieve the aim, the research will address the following question:

1) What are the current interior design components and how can we use them to design hospital waiting areas in consideration of children?

Here are some sub-questions that this research aims to achieve in the research:

2) What is the sense of belonging, wellbeing and safety in consideration of a child and how can we design a space that promotes them?

1.6 Methodology of the Thesis

This thesis will conduct a comparative case study of children's hospitals in North Cyprus and Kuwait. Ten hospitals and hospitals will be included in the study, with five in each country, selected based on inclusion and exclusion criteria (see figures 2 & 3) using a purposive sampling method. The study will involve observation and analysis

of interior design components using standardized statistical techniques and a review of existing literature. Quantitative methods will be used to analyse the data collected. The methodology employed will provide a comprehensive approach to examining child-oriented design in healthcare spaces and will contribute to the current understanding of this topic (see figure 2).

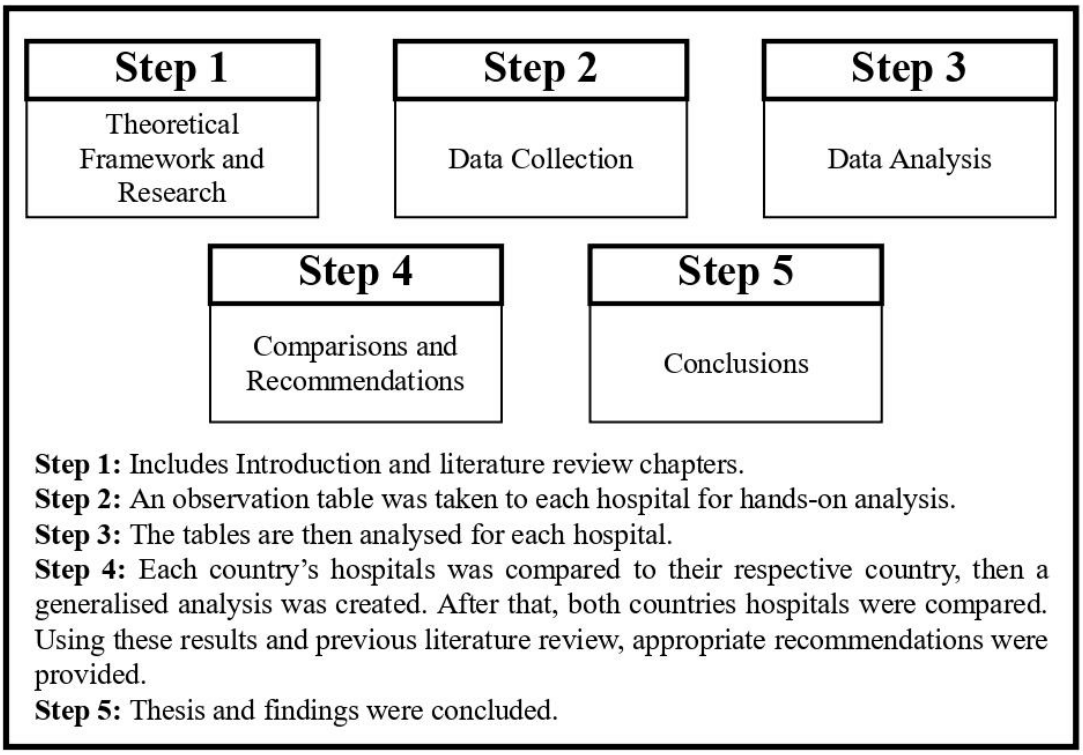


Figure 2: Research Method of Thesis

1.7 Limitation of Study

This study conducts a comparative analysis of the psychological impacts and spatial arrangements in the waiting areas of paediatric hospitals in Northern Cyprus and Kuwait. However, it is crucial to acknowledge the limitations of this study. The first limitation is the exclusive focus on the children's section within hospital waiting areas. Despite the presence of numerous public hospitals, they are not included in this study. The reason for this exclusion is that private hospitals have the autonomy to design their

waiting areas, which is not always the case with public hospitals. Waiting areas in hospitals serve as communal spaces utilized by a diverse group of individuals. Therefore, within the scope of this thesis, a comparative study is chosen as the most suitable approach. Lastly, this study is limited to the design of waiting room sections and does not consider other factors that may influence the well-being of paediatric patients (See Figures 3 & 4).

List of Hospitals in Kuwait

City/Town	Hospital Name	Chosen	Reason for Rejection
SALMIYA	International Hospital		No Cameras Allowed
	Al-Seef Hospital	✓	-
	Applo Hospital		No Cameras Allowed
	New Mowasat Hospital	✓	-
SABAH AL-SALEM	Kuwait Hospital		No Cameras Allowed
	Wara Hospital	✓	-
	Taiba Hospital	✓	-
AL-MAHBOULA	Al Salam Al Ahmadi Hospital		No Cameras Allowed
	Alia International Hospital	✓	-

Figure 3: List of Hospitals in Kuwait

List of Hospitals in Northern Cyprus

City/Town	Hospital Name	Chosen	Reason for Rejection
GAZIMAĞUSA	Kunter Trust Hospital		No Children Section
	Cyprus Central Hospital	✓	-
	Yaşam Hospital	✓	-
LEFKOŞA	Cyprus Life Hospital		No Children Section
	Özel Başkent Hastanesi		No Response
	Etik Hastanesi	✓	-
	British IVF Hospital		No Response
	Elite Hospital	✓	-
GIRNE	Kamiloğlu Hospital		No Children Section
	Medicalport Tunççevik Hospital	✓	-
	Private Kyrenia Hospital		No Response
	Kolan British Hospital Kyrenia		Closed Down

Figure 4: List of Hospitals in Northern Cyprus

Chapter 2

CHILD PERCEPTION OF SPACE

This part of the study focuses on the child's perception of space, particularly their sense of belonging, well-being, and safety in hospital waiting areas. It explores how interior design components such as colour, lighting, materials, textures, furniture, and fixtures can influence these aspects. These interior design components will be briefly explained at a surface level, providing a basic understanding of their role and impact in the design process.

2.1 Sense of Belonging

A child's sense of belonging is a fundamental aspect of their overall well-being and development. It refers to the feeling of being accepted and valued within a certain context, such as a family, peer group, school, or community. This sense of belonging can significantly influence a child's self-esteem, identity formation, and emotional security (Hadley & De Gioia, 2008). Children who feel a sense of belonging are happier, more relaxed, and have fewer behavioural problems than others. They are more likely to engage in positive social interactions, show empathy towards others, and exhibit prosocial behaviour. Furthermore, a keen sense of belonging can foster resilience, enabling children to better cope with challenges and adversity (see figure 3) (Woodhead, 2008).

However, cultivating a sense of belonging requires conscious effort and consideration. It involves creating an environment that respects and acknowledges the child's unique

qualities and contributions. This includes providing opportunities for meaningful participation, promoting positive relationships, and ensuring that the child feels safe and supported (Denise, 2019).

In the context of school settings, teachers and educators play a crucial role in fostering a sense of belonging among students. They can do this by creating a positive and inclusive classroom culture, implementing teaching strategies that cater to diverse learning needs, and establishing strong relationships with each student (Fultz, 2023). Moreover, a sense of belonging can also be fostered through the physical environment. For instance, child-friendly spaces that are designed with children's needs and preferences in mind can make them feel more comfortable and secure (Denise, 2019). This includes the use of appropriate furniture and fixtures, as well as colour schemes that are appealing and soothing to children (Space Team, 2022).

In addition, activities and programs that allow children to express themselves and engage with others can also enhance their sense of belonging. These could include arts and crafts, sports, music, and other forms of creative expression. Such activities not only provide children with a platform to display their talents and interests, but also promote social interaction and collaboration (Dobbins, 2018).

Furthermore, family involvement is another key factor in promoting a child's sense of belonging. Parents and caregivers who are actively involved in their child's life and show interest in their activities can help reinforce the child's sense of being valued. This can be achieved through regular communication, spending quality time together, and showing appreciation for the child's efforts and achievements. For example, in figure 4, A group of kids are engaging and participating in an activity together in a safe

space. The use of bright pastel colours, the design of the steps with various climbing options and moving the boulders with their physical strength help enhance the sense of belonging in kids (see figure 5).

Figure 5: Assemble's Brutalist Playground at RIBA (URL 1)

In summary, a child's sense of belonging is a vital component of their emotional and social development. By fostering this sense of belonging, we can help children thrive and reach their full potential. It is a collective responsibility that involves parents, educators, community members, and the children themselves. Through concerted efforts, we can create environments and experiences that truly cater to children's needs and help them feel a genuine sense of belonging (Tappe, Glanz, Sallis, Zhou, & Saelens, 2013).

2.2 Well-being in Interior Space

The concept of well-being in interior space is a multifaceted topic that encompasses various aspects of design, psychology, and human behaviour. It involves creating

spaces that not only look aesthetically pleasing but also promote health, happiness, and productivity (Kopec, 2017). One of the key aspects of well-being in interior space is the use of colour. Colours can have a profound impact on our mood and emotions. For example, warm colours like red and orange can stimulate and energize, while cool colours like blue and green can soothe and relax. Therefore, choosing the right colours can help create an environment that promotes well-being (Grigoriou, 2019).

Another important factor is the layout of the space. A well-designed layout can promote circulation, reduce congestion, and create a sense of order and balance. Take Maple Street School Preschool as an example, they use warm coloured wood material in most parts and the simple layout of the design enhances the well-being. Natural lighting and soft felt atmosphere help children achieve a sense of belonging (see figure 6). This can enhance the functionality of the space and make it more comfortable and enjoyable to use. Furniture selection also plays a crucial role in promoting well-being (Tawil, et al., 2021). Furniture should be comfortable, durable, and appropriately sized. It should also be arranged in a way that promotes interaction and communication. Furthermore, the use of natural materials can add warmth and texture to the space, creating a more inviting and comfortable environment (Colenberg, Jylhä, & Arkesteijn, 2020).

Incorporating components of nature, such as plants or natural light, can also enhance well-being. Studies have shown that exposure to nature can reduce stress, improve mood, and boost productivity. Therefore, incorporating components of nature into interior spaces can have a positive impact on well-being. Well-being in interior space involves an integrated approach that considers various aspects of design, from the choice of colours and layout to the selection of furniture and the incorporation of

natural components. By considering these factors, designers can create spaces that not only look good but also promote health, happiness, and productivity (Colenberg, & Jylhä, 2022).

Figure 6: Maple Street School Preschool / Barker Associates Architecture Office + 4Mativ Design Studio (URL 11)

2.3 Safety of Child in Space

Ensuring the safety of children in hospital waiting rooms is a critical aspect of healthcare. The first consideration is cleanliness and hygiene. Children's hospitals

should maintain high standards of cleanliness to prevent the spread of germs. This includes regular cleaning of toys, chairs, tables, and other surfaces that children may touch (Peters, et al., 2018). Another important aspect is the provision of a safe play area. A designated play area can keep children occupied while they wait. This area should be monitored and filled with safe, age-appropriate toys. Sharp objects, small parts that can be swallowed, or toys that can pinch fingers should be avoided (Rauch, et al., 2020).

Supervision is also crucial. Children should never be left unattended in the waiting room. Hospitals can ensure this by having staff members always present or by implementing a policy that requires parents or guardians to stay with their children (Hagen, et al., 2017). This can be seen in the Lego Play Pond (see figure 7) where the circular design of the seating, encourages interacting with others as well as the ball pit design allows the child to feel safe.

Figure 7: Lego Play Pond / HAO DesignCircular (URL 2)

Staff should also be trained to manage emergencies that may occur in the waiting room, such as choking, allergic reactions, or injuries from falls. First aid kits and emergency equipment should be readily available (Remick, et al., 2018).

The waiting room should be a comfortable environment for children. This includes having child-sized furniture, soothing colours on the walls, and a quiet atmosphere. Finally, signage and information should be clear and easily understandable, guiding children and their parents to where they need to go and explaining any rules or procedures in the waiting room (Wensley, et al., 2017). The design of the waiting room can also contribute to safety. This includes avoiding furniture with sharp edges, using non-slip flooring, and ensuring that any fixtures and fittings are securely attached and cannot be easily pulled down (Amato, et al., 2021). (see figure 8).

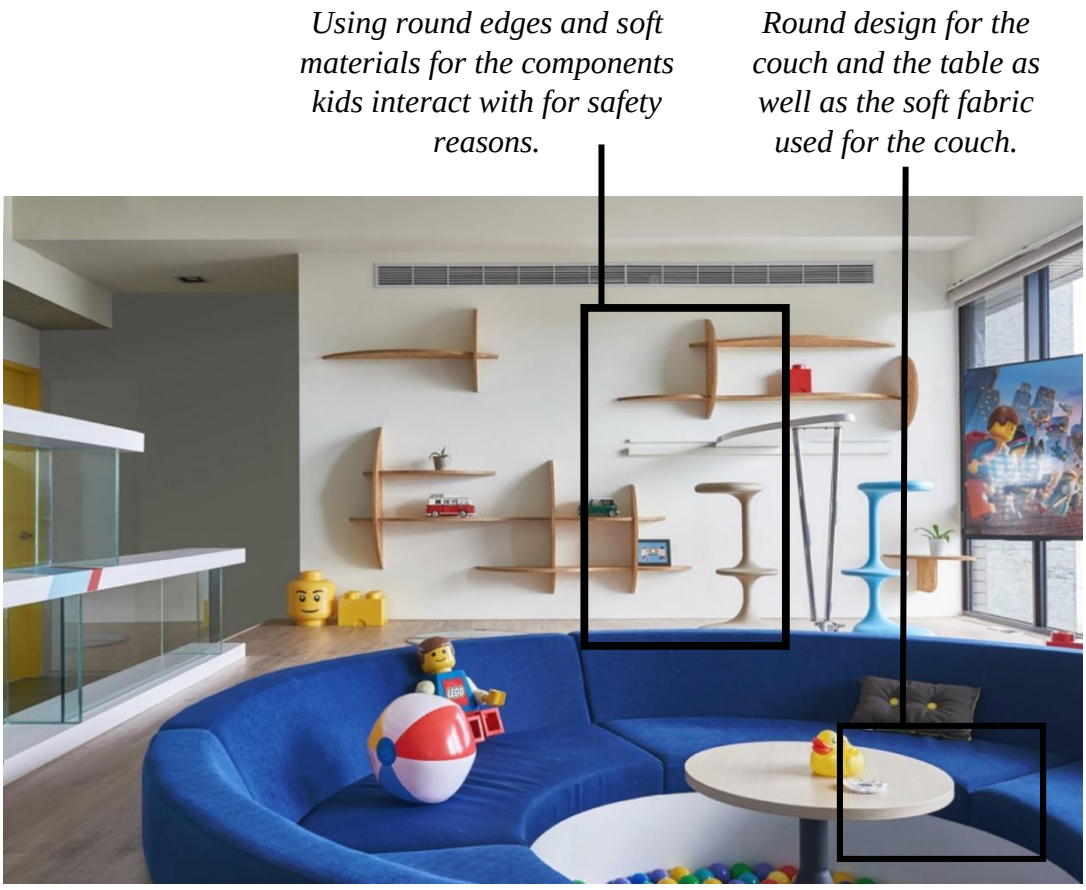


Figure 8: The Lego Play Pond / HAO Design (URL 2)

Providing distractions such as books, games, and TV programs can help to reduce anxiety. These distractions can serve to occupy a child's mind, diverting their attention away from the stress of being in a hospital. For example, a well-stocked bookshelf with a variety of children's books can provide both entertainment and educational value. Games, whether they are board games or video games, can provide a fun distraction and even offer opportunities for social interaction with other children. TV programs, particularly those that are educational or age-appropriate, can also serve as a useful distraction (Qi, Yan, Lau, & Tao, 2021). Infection control is a key aspect of maintaining safety in children's hospital waiting rooms. This includes providing hand sanitizers at key points and encouraging their use. Regular disinfection of high-touch surfaces such as door handles, elevator buttons, and digital devices is also crucial. Staff should be trained in infection control procedures and there should be clear protocols for dealing with any outbreaks of infectious diseases (Bender, et al., 2015).

2.4 Child Perception

Children have a unique way of perceiving and interpreting the world due to their limited cognitive, emotional, and physical capabilities (Baron-Cohen, 2002). These limitations shape their perceptions of interior spaces differently from adults. For example, children's visual and spatial perception differs from that of adults, and their ability to navigate their environment is still developing (Mehta, 2021). The design of interior spaces for children should, therefore, consider these differences in perception. According to Mehta (2021), the design of interior spaces for children should be based on the principles of child-centeredness, developmental appropriateness, safety, and accessibility.

Furthermore, research has shown that children are more sensitive to the emotional and social cues of the environment and may be more affected by sensory stimuli such as colours, lights, and sounds (Gifford, 2014). As such, it is important to consider the psychological impact of the physical environment on children. Studies have shown that colours, lighting, and materials can have a significant impact on children's emotional and cognitive states. For instance, certain colours can evoke different emotions in children, and lighting can affect their mood and perception of space (Angelaki, Triantafyllidis, & Besenecker, 2022). Materials such as fabrics, textures, and acoustics can also influence children's perception and behaviour in interior spaces (Carmona, Tiesdell, & Heath, 2003).

Moreover, children have different developmental stages, which may require diverse types of stimulation and support at different ages. The design of interior spaces for children should, therefore, consider the child's age, gender, and individual characteristics, as well as the child's stage of development and learning needs. For instance, young children may require more sensory stimulation, while older children may need more privacy and autonomy (Anderson & Pempek, 2005).

2.4.1 Colour

Colour perception is an essential aspect of how we perceive the world around us. However, research has shown that children and adults perceive colours differently (see figure 9) where with an increase in age, blue light is filtered by the lens, but hue perception is not affected. Figure: Observed hues (dashed lines) = hues perceived by people older than 60 years of age; predicted hues (solid lines) = based on the lens model. These differences in perception can have significant implications for how we design spaces and objects for children and adults.

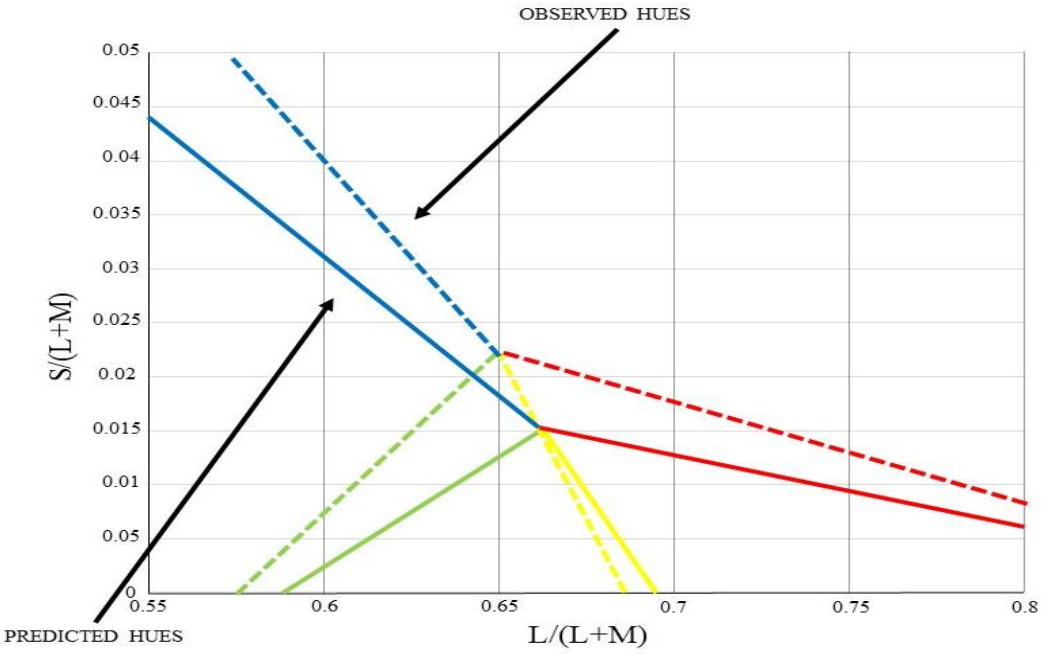


Figure 9: Colour Vision Across the Life Space: Perception & Brain Imaging (URL 3)

One significant difference in colour perception between children and adults is that children tend to have a narrower range of colour vocabulary. According to research, children typically use basic colour terms such as red, blue, green, yellow, black, and white until around the age of six (Lingard & Homer, 2018). In contrast, adults use more complex colour terms, such as aquamarine, maroon, and turquoise, to describe colours. This difference in vocabulary can result in miscommunication when designing spaces or objects for children, as they may not be able to accurately describe the colour they prefer.

Another difference in colour perception between children and adults is their preference for certain colours. Research has shown that young children prefer bright, bold colours such as red, yellow, and green (Franklin et al., 2005). In contrast, adults tend to prefer muted, softer colours such as beige and pastels (Franklin et al., 2005). This difference in preference can have significant implications for designing spaces and objects that

are appealing to both children and adults. For example, when designing a shared space, such as a waiting room in a hospital, designers must consider the preferences of both children and adults to create a welcoming and visually appealing environment for all.

Furthermore, children's colour perception develops differently from adults. Research has shown that children's colour perception and discrimination skills continue to develop until around the age of ten (Bornstein, 2016). This means that children may perceive colours differently than adults due to differences in their visual processing abilities. For example, a child may have difficulty distinguishing between shades of green, which an adult may easily differentiate. This difference in perception can have implications for designing spaces and objects for children, as the colours used may appear different to them than to adults.

Another factor that influences how children perceive colour is cultural context. Different cultures associate colours with different meanings and emotions. For example, in Western cultures, white is associated with purity and innocence, while in some Eastern cultures, it is associated with mourning and death (Bornstein, 2016). This cultural context can influence how children and adults perceive and react to different colours.

Children and adults perceive colours differently due to differences in vocabulary, preference, visual processing abilities, and cultural context. Understanding these differences is essential when designing spaces and objects for both children and adults. By considering these differences, designers can create visually appealing and welcoming environments that promote positive emotional states and well-being in both children and adults.

Colour theory plays a crucial role in designing a child-friendly waiting room section in hospitals. Children are particularly sensitive to colours, and studies have shown that colours can significantly impact their emotional states and well-being (Qi, Yan, Lau, & Tao, 2021).

The cultural associations of different colours must also be considered when designing a child-friendly waiting room section in hospitals. In some cultures, certain colours may be associated with negative emotions, such as white being associated with death and mourning. Thus, cultural sensitivity is essential when selecting colours for a hospital waiting room section, as it can significantly impact the emotional well-being of patients and their families (Bosch, et al., 2012).

Creating a child-friendly waiting room section in hospitals requires careful consideration of several design components, with colour selection being one of the most crucial aspects. Colours have a significant impact on individuals' psychological and emotional states, and this is especially true for children, who are more sensitive to their surroundings. Therefore, choosing the right colours for a waiting room section can help create a soothing and welcoming environment for children, reducing anxiety and promoting positive emotional states (Bosch, 2012).

When it comes to colour selection, blue and green are two of the most popular choices for hospital waiting room sections. Blue is associated with calmness, serenity, and trust, making it an ideal colour for creating a relaxing and calming environment. Studies have shown that blue can lower blood pressure and heart rate, which is why it is commonly used in healthcare environments. Green, on the other hand, is associated with nature and renewal and has been found to reduce stress levels in individuals.

Therefore, incorporating shades of blue and green in the waiting room section's colour palette can help create a soothing and calming environment for children (Bosch, 2012).

While blue and green are often used in healthcare environments, incorporating bright and cheerful colours like yellow and orange can also help create a welcoming and uplifting atmosphere. Renown's Children's Emergency Waiting Room is a great example of this, where the use of bright and contrasting colours, mixing blue and purple hues which are soothing and calming with more energizing and welcoming colours like orange and yellow creates a balance in atmosphere enhancing well-being in children. As well as using playful and vibrant designs and patterns to emphasize certain playing areas simulating children's imagination. (see figure 10)

Figure 10: Renown's Children's Emergency Waiting Room in Reno NV (URL 12)

Yellow is associated with happiness and optimism, and studies have shown that it can promote a sense of well-being in children. Orange is often used in combination with yellow to create a lively and energetic environment. However, it is essential to use these colours in moderation, as excessive use of bright colours can lead to overstimulation in children (Kumoğlu, Olguntürk, 2020).

Apart from the psychological effects of colours, it is also crucial to consider the overall visual appeal of the waiting room section. Using a harmonious colour palette that creates a cohesive and inviting environment can help create a warm and welcoming space for children. Using contrasting colours in a complementary way can also make the waiting room section more engaging for children, making them feel more at ease in what can often be a stressful and daunting environment. The use of patterns and textures can also be incorporated to create visual interest and contrast, making the space more engaging for children (Tofle, et al., 2004). Therefore, selecting the right colours for a child-friendly waiting room section in hospitals is essential for creating a soothing, welcoming, and visually appealing environment. Understanding the psychological effects of different colours and their cultural associations is crucial in creating an atmosphere that promotes positive emotional states and well-being in children. Incorporating a harmonious colour palette and using patterns and textures can help create a visually interesting and engaging environment that can help reduce anxiety and promote relaxation for paediatric patients and their families (Ghamari, & Amor, 2016).

2.4.2 Lighting

Lighting is a fundamental aspect of designing a child-friendly waiting room section in hospitals. A well-lit space is essential for children, particularly those with visual impairments (Huang, & Chou, 2021). According to a report by the American Academy of Paediatrics, adequate lighting is essential for reading, writing, and other activities that require visual acuity, and it can also help improve children's mood and behaviour (Bukorovic, et al., 2019).

Lighting is a critical aspect of designing a child-friendly waiting room section in hospitals. Natural light is ideal, but artificial lighting that mimics natural light can also

help create a calm and inviting atmosphere. Lighting should be designed to prevent glare and shadows, cater to individual preferences and needs, promote healthy circadian rhythms, and highlight key areas to encourage engagement. Coloured lighting or lighting with changing intensities can be used to create a more engaging and interactive environment for children. By considering these factors, designers can create waiting room sections that promote well-being, reduce stress, and improve patients' experiences (Birch, Curtis, & James, 2007).

Children perceive lighting differently than adults due to their developing visual systems. Children have larger pupils and shorter eyeballs, which makes their eyes more sensitive to light than adults (Fields, 2023). As a result, children can experience discomfort and even headaches when exposed to bright or harsh lighting conditions. Conversely, dim lighting can make it difficult for children to see and navigate their surroundings, leading to safety concerns.

Moreover, children have a different circadian rhythm than adults. Their bodies are more sensitive to the effects of blue light, which can suppress melatonin production and make it difficult for them to fall asleep at night (Harvard Health Publishing, 2020). In contrast, adults are more sensitive to warm and dim lighting that promotes relaxation and sleep.

In addition to physical differences, children also have different emotional and psychological responses to lighting. Research has shown that children respond positively to warm and inviting lighting that creates a cozy and comforting environment (Shreve, Twardosz, & Weddle, 1983). On the other hand, adults often

prefer bright and cool lighting that enhances their alertness and productivity (Thompson & Thompson, 2008).

When designing interior lighting for a space that is used by both children and adults, it is essential to consider the needs and preferences of both groups. A lighting design that works well for adults may not be appropriate for children, and vice versa. A balanced lighting scheme that meets the needs of both groups can be achieved by using a combination of ambient, task, and accent lighting. Ambient lighting provides overall illumination and sets the tone for the space. Using warm and soft lighting can create a relaxing and inviting atmosphere that is beneficial for both children and adults (Avoirinterior, 2023). (See figure 11) as an example, hidden warm LED lights in the moulding was used in the kindergarten and nursery for task lighting and emphasizing the interacting wall helps the children calm down.

Figure 11: OB Kindergarten and Nursery/HIBINOSEKKEI+Youji no Shiro (URL 4)

Task lighting, on the other hand, provides focused and localized lighting that is essential for specific activities such as reading or playing games (Puisis, 2022). Children may require brighter task lighting than adults due to their developing visual systems. As we age, we require light to conduct everyday tasks (see figure 12) where extra bright white light was used in the play area which energizes the children while they play.

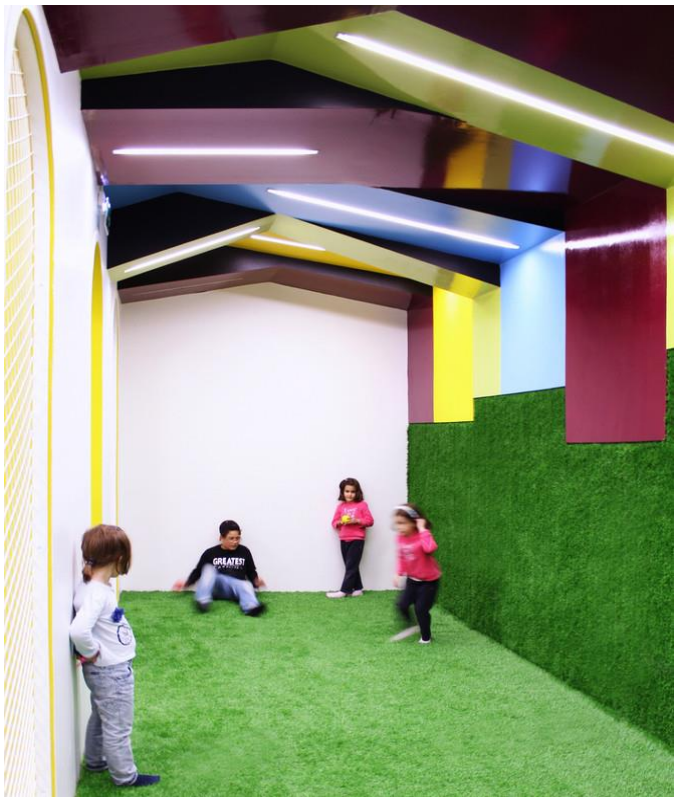


Figure 12: Kalorias - Children's Space / Estúdio AMATAM (URL 5)

But the need for more light increases dramatically for visually impaired people, who require up to five times lighter. Task lighting is often brighter than ambient lighting and is incredibly important for people with low vision, as it can help users with completing different activities or reading without straining their eyes (Willings, 2020). Finally, accent lighting can be used to create visual interest and highlight specific features of the space. Using colour-changing LED lights can be particularly engaging

for children and enhance their experience of the environment (Willings, 2020). Accordingly, children perceive interior lighting differently than adults due to their physical, emotional, and psychological differences. For example, in the Avenue Green Sheshan in Shanghai, bright white spotlights were used in interacting spaces for children while in the adults seating area, warm lighting was used to create a calmer and cozier atmosphere. (see figure 13)

Figure 13: Avenue Green Sheshan in Shanghai / ELTO Consultancy (URL 6)

Understanding these differences is crucial in creating an optimal lighting design that meets the needs of both age groups. A balanced lighting scheme that provides ambient, task, and accent lighting can create a comfortable and visually appealing environment for all users.

Natural light is ideal for waiting rooms, as it can create a calm and inviting atmosphere, and it has been shown to have positive effects on patients' well-being. Research

conducted by the University of Utah found that patients in hospital rooms with windows experienced less pain and used fewer painkillers than patients in rooms without windows. Furthermore, natural light is beneficial for regulating the circadian rhythm, which can help promote a sense of calmness and relaxation in children (van Oel, Mlihi, & Freeke, 2021).

If natural light is not available, artificial lighting can be used to mimic the effects of natural light. According to a study by the Lighting Research Centre at Rensselaer Polytechnic Institute, lighting that mimics the colour and intensity of natural light can improve mood, reduce stress, and increase productivity (Boyce, 2003). Additionally, adjustable, and dimmable lighting can help cater to individual preferences and needs, creating a sense of comfort and security.

It is essential to consider the circadian rhythms of children when designing lighting for a waiting room section in hospitals. The circadian rhythm is the body's natural 24-hour cycle that regulates sleep, wakefulness, and other physiological processes. Research conducted by Figueiro (2013), found that exposure to bright and blue-enriched light during the day can promote alertness and reduce drowsiness in children, while exposure to dim and warm light in the evening can help promote sleepiness and improve sleep quality. Therefore, lighting in waiting room sections should be designed to promote a healthy circadian rhythm and help regulate sleep patterns (Rea, et al., 2012).

Glare and shadows can cause discomfort and eye strain in children, particularly those with visual impairments. Therefore, lighting should be designed to prevent glare and shadows, and light fixtures should be positioned to minimize the risk of eye strain.

Additionally, lighting should be designed to highlight key areas, such as play areas or reading nooks, to draw children's attention and encourage engagement (Verschoren, et al., 2015).

It is also important to consider the types of lighting used in the waiting room sections. Coloured lighting or lighting with changing intensities can be used to create a more engaging and interactive environment for children. For example, interactive light installations can be used to create a more engaging and interactive waiting room section for children. Research conducted by the Journal of Architectural and Planning Research found that lighting can significantly impact the mood and well-being of patients and their families in hospital waiting rooms. The study also found that the use of coloured lighting can positively affect patients' mood and reduce anxiety (Zhang, Fort Mir, & Gimenez Mateu, 2022).

2.4.2.1 Natural Light

Natural light plays a crucial role in designing spaces for children, including waiting rooms in hospitals. For example, Montessori Hands-On Observation Area (see figure 14) use a full glass design façade to maximize nature indoors. It creates a calm and inviting atmosphere and has been shown to have positive effects on their well-being. Research conducted by the University of Utah found that patients in hospital rooms with windows experienced less pain and used fewer painkillers than patients in rooms without windows.

Figure 14: Montessori Hands-On Observation Area, Australia - Dimensional Murals (URL 13)

This is particularly important for children, who are more sensitive to their surroundings (Bukorovic, et al., 2019). Furthermore, natural light is beneficial for regulating the circadian rhythm, which can help promote a sense of calmness and relaxation in children. The circadian rhythm is the body's natural 24-hour cycle that regulates sleep, wakefulness, and other physiological processes. Exposure to bright and blue-enriched light during the day can promote alertness and reduce drowsiness in children, while exposure to dim and warm light in the evening can help promote sleepiness and improve sleep quality (Kumoğlu, Olguntürk, 2020).

In the absence of natural light, artificial lighting that mimics natural light can be used. Lighting should be designed to prevent glare and shadows, cater to individual preferences and needs, promote healthy circadian rhythms, and highlight key areas to encourage engagement. Coloured lighting or lighting with changing intensities can be used to create a more engaging and interactive environment for children. By considering these factors, designers can create waiting room sections that promote well-being, reduce stress, and improve patients' experiences (Kumoğlu, Olguntürk, 2020).

2.4.2.2 Artificial Light

Artificial lighting is a key component in the design of children's waiting spaces in hospitals. It not only illuminates the space but also contributes to the overall atmosphere, potentially reducing anxiety and improving the overall experience for the child. Research (2021) identified four first-level indicators and twenty-seven second-level indicators in four dimensions: functional layout (layout and area), flow organization, supporting facilities, and environmental details (physical and landscape environment). The study found that the waiting space in paediatric clinics currently fails to meet key patient needs in areas such as mother and infant rooms, children's play areas, and drinking water facilities. There are also widespread problems with the creation of natural environments, such as views of natural scenery from windows and indoor green plants (Qi, Yan, Lau, and Tao, 2021).

The appropriate level of lighting in hospital waiting rooms can significantly impact the overall atmosphere of the space. The right kind of lighting can create a calming and welcoming environment, which is particularly important in children's waiting spaces. Take ETKHO hospital engineering as an example, they use bright colours and maximum lighting achieved by using focused task LED lights emphasizing different

activities which are differentiated by using different patterns and materials. Also, the use of indoor plants and green colours creates a soothing atmosphere (see figure 15).

Figure 15: ETKHO Hospital Engineering (URL 14)

A well-lit space can help reduce anxiety and improve the overall experience for the child, making the wait less stressful and more comfortable (Huang and Chou, 2021). Light also plays a crucial role in human health and performance in healthcare settings. It is not just about visibility, but also about how light interacts with our biological systems (Lledó, 2019).

For instance, our circadian rhythms, which regulate our sleep-wake cycles, are influenced by light. Therefore, the use of human-centric lighting, which considers our biological needs and mimics the natural light/dark cycle, can support health and well-being in healthcare environments. This is particularly relevant in children's waiting spaces where maintaining a normal circadian rhythm can be challenging due to stress and unfamiliar surroundings (Lledó, 2019).

The circadian rhythm is a natural, internal process that regulates the sleep-wake cycle and repeats every 24 hours. It can be affected by environmental cues, like sunlight and temperature. Our body clocks control metabolism, contributing to the proper functioning of every organ in our bodies. The light/dark cycle is the main marker of our circadian rhythms. If we do not use the right light at the right moment our body clocks become disoriented and stop functioning correctly. This is particularly relevant in healthcare settings where patients' circadian systems can be disrupted using incorrect lighting. Many peer-reviewed research in healthcare buildings have demonstrated that access to daylight provides benefits such as reduction in the average length of hospital stay, quicker post-operative recovery, reduced ICU delirium, and reduced requirements for pain relief. In conclusion, the use of human-centric lighting in healthcare environments, which considers our biological needs and mimics the natural light/dark cycle to support health and well-being, is advocated (Anjali, 2006).

In short, the role of artificial lighting in children's waiting spaces in hospitals is multifaceted and plays a significant role in shaping the overall experience of the child. It is therefore crucial to consider the design and implementation of lighting in these spaces carefully.

2.4.3 Materials and Textures

The choice of materials and textures in a child-friendly waiting room section in hospitals is a critical aspect of the physical environment. The materials should be selected with durability, safety, and aesthetic appeal in mind, while textures can be used to create a multisensory experience for children (see figure 10). Natural and sustainable materials can contribute to a sense of well-being, while visually interesting and colourful materials can create a cheerful and engaging environment.

Children heavily rely on their sense of touch to understand their world. This is especially true in the physical environment of hospitals, where children are often anxious or scared (While, 2021). Different textures can provide a rich sensory experience that not only keeps children engaged but also distracts them from their anxieties. For instance, they learn what sticky, prickly, silky, and fluffy actually feel like against their skin. This tactile exploration is a crucial part of their cognitive development (Sørvoll, Øberg, Girolami, 2022).

Interacting with various textures can also strengthen a child's motor skills. Actions like gripping, holding, squeezing, or poking textured objects help children strengthen their muscles and develop stronger hand-eye coordination. This is particularly important in a hospital setting, where children may be confined to a bed or a room for extended periods. Having access to a variety of textures can provide much-needed stimulation.Touch and texture also aid in language acquisition. As children explore different textures, parents and healthcare providers can use descriptive language to help them build their vocabulary. This can turn a potentially scary hospital visit into a learning experience (Ambridge, Lieven, 2011).

The way in which children perceive materials and textures can differ due to differences in cognitive and sensory development. The differences in perception can impact how individuals interact with their environment and how they process information. In this research, how children perceive materials and textures differently and how these perceptions can impact their experiences will be explored (Hewer, 2017). One of the primary differences in the way children perceive materials and textures is their level of sensitivity. Children tend to be more sensitive to textures, and as a result, they may be more likely to respond negatively to certain textures that adults may find tolerable

or even pleasant. As an example, in WeGrow, soft and smooth textures, wood and fabrics were used which results in a calmer reaction and interaction in kids. (see figure 16)

Figure 16: WeGrow / Bjarke Ingels Group (URL 7)

This sensitivity is due in part to the fact that children's skin is more delicate than adults, and therefore they may be more sensitive to rough or scratchy textures (Butcher & Pletcher, 2016).

Additionally, children's tactile perception is still developing, and they may not yet be able to distinguish between subtle differences in texture as adults do. Furthermore, children tend to explore their environment through touch more frequently than adults do. This means that they may be more likely to notice and interact with textures in their environment than adults. For example, a child may be drawn to touch the rough

bark on a tree, while an adult may be more interested in the tree's overall aesthetic appearance (Lederman & Klatzky, 2009).

Children's tendency to explore their environment through touch may also be due to their reliance on sensory input to learn and understand the world around them (McIlroy, 2022). In contrast, adults tend to perceive materials and textures more in terms of their aesthetic and functional qualities. For example, an adult may choose a leather couch for its luxurious feel and durability, while a child may be more interested in the couch's texture and may enjoy rubbing their hands on it. Adults may also be more concerned with how materials and textures interact with other components in their environment, such as the colour scheme or lighting (Frothingham, 2020).

Another factor that can impact how children and adults perceive materials and textures differently is their prior experiences. Children who have had positive experiences with certain textures may be more likely to seek them out in the future, while children who have had negative experiences may avoid them. Adults may also have preferences for certain textures based on their prior experiences, but they may be more likely to choose materials and textures that are functional and practical (Hertenstein et al., 2006).

The differences in perception between children and adults can have implications for a variety of settings, including educational environments, healthcare facilities, and public spaces. For example, when designing a child-friendly waiting room in a hospital, it is important to consider the textures and materials used in the space. Soft and comfortable materials may be more soothing for children, while adults may prefer more functional and practical materials (Dobbins, 2018). In educational settings, providing a variety of textures and materials for children to explore can promote

sensory development and help them better understand their environment. Children and adults perceive materials and textures differently due to differences in sensory and cognitive development, prior experiences, and their overall goals and preferences. Understanding these differences can help designers, educators, and healthcare professionals create environments that are engaging, functional, and accommodating to both children and adults (Liu, Lughofer, & Zeng, 2015).

Textures can be used to create a multisensory experience for children in a hospital waiting room, making it a more engaging and stimulating environment. The use of textures such as those found in sensory walls or tactile toys can provide a stimulating and engaging environment for children. Moreover, the use of natural materials, such as wood, can create a warm and inviting atmosphere in a children's waiting room. According to research by the Journal of Environmental Psychology, natural materials can help promote relaxation and positive emotional states in patients and their families. Using sustainable and eco-friendly materials can also contribute to a sense of well-being and promote a positive image for the hospital (Lamb, 2021).

In addition to selecting materials and textures that promote safety and comfort, it is crucial to consider the aesthetic appeal of the waiting room. Research conducted by the Journal of Health Design has demonstrated that a visually pleasing environment can enhance patients' satisfaction and overall experience. Therefore, the use of visually interesting and colourful materials can create a cheerful and engaging environment for children. The use of bright and bold colours can create a lively atmosphere and foster a positive outlook in children (Qi, Yan, Lau, & Tao, 2021).

When it comes to suitable textures for children in the physical environment of hospitals, it's important to provide a variety of textures that are safe and appropriate for their age and developmental stage (Sousa, 2017). Smooth materials like paper or polished stones can be soothing, while rough materials like tree bark or sandpaper provide a different kind of tactile stimulation (Reppe, et al., 2023). Squishy materials like play dough or marshmallows can be comforting, and fluffy materials like cotton balls or animal fur can provide a sense of warmth and security (Pierce, 2007). Therefore, the thoughtful selection and incorporation of different textures in the physical environment of hospitals can significantly enhance a child's hospital experience. It can aid in their cognitive development, improve their motor skills, and even support language acquisition. Most importantly, it can turn a potentially intimidating environment into a space of comfort, exploration, and learning (Heller, 2018).

In designing a child-friendly waiting room section in a hospital, materials and textures play a crucial role in the psychological and emotional well-being of paediatric patients and their families, according to research by the Journal of Environmental Psychology (Birch, Curtis, & James, 2007). Soft and comfortable materials, such as plush fabrics and carpets, can help create a cozy and welcoming environment, while tactile surfaces and interactive displays can help engage children and provide a sense of control over their environment. A combination of different materials and textures can be used to create a unique and memorable experience for children and their families (Ghosh, Afroze, & Sultana, 2021).

It is important to note that the selection and use of materials and textures in a children's waiting room should be carefully considered to ensure that they are safe and suitable

for the target age group. Additionally, regular cleaning and maintenance of the materials should be prioritized to ensure a hygienic and healthy environment for patients and their families. Overall, thoughtful consideration of materials and textures can play a significant role in creating a comfortable, engaging, and supportive environment for children in hospital waiting rooms (Alapieti, et al., 2020).

2.4.4 Furniture and Fixtures

Children's furniture and fixtures differ from those designed for adults in several ways. Furniture and fixtures designed for children are typically smaller in size, with lower seat heights and smaller dimensions to accommodate their smaller bodies. The materials used to create children's furniture and fixtures are also different, with more durable and non-toxic materials used to ensure safety (Migliani, 2020).

One of the significant differences in how children perceive furniture and fixtures compared to adults is the level of comfort. Children need to feel comfortable in their environment, and their furniture and fixtures must provide them with a sense of safety and security. For example, a child's chair should be comfortable, with a cushioned seat and backrest that provides support, but not so deep that their feet cannot touch the ground (Parvez et al., 2018).

Children are also more likely to prefer furniture and fixtures with vibrant colours and playful designs that reflect their personality and interests. They are attracted to furniture and fixtures with bright colours, patterns, and fun shapes, which stimulate their imagination and creativity. In contrast, adults tend to prefer furniture and fixtures with more subtle, muted colours and minimalist designs that reflect their taste and style (Parvez et al., 2018). The design of furniture and fixtures for children is also different, with a focus on safety and functionality (see figure 17).

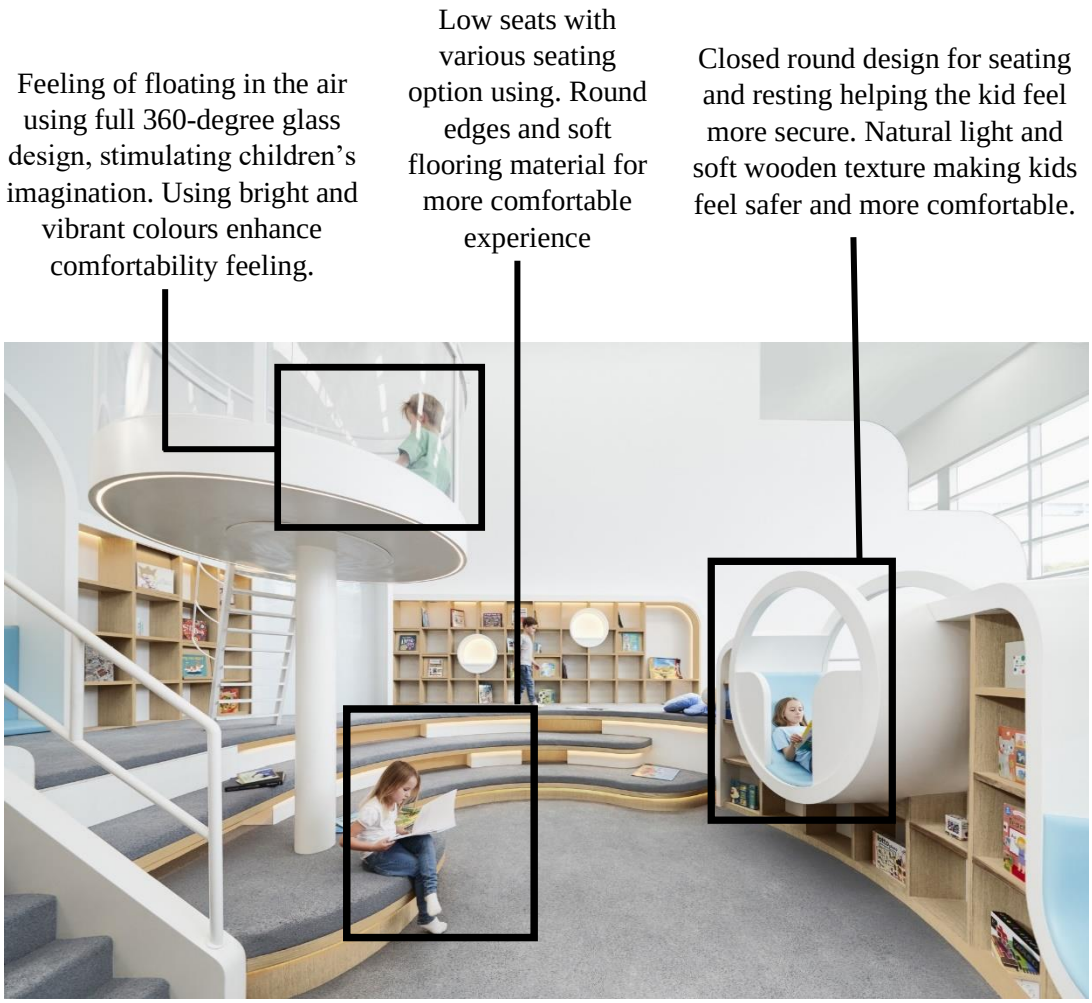


Figure 17: NUBO Kindergarten / PAL Design (URL 8)

For example, children's beds often feature safety rails to prevent falls and injuries, while desks and chairs have adjustable height options to accommodate their growth and development (McKenzie, 2021). On the other hand, adult furniture and fixtures focus on design aesthetics and functionality, with less emphasis on safety features (Bhamra, Lilley, & Tang, 2011).

Another key difference is the level of durability required for children's furniture and fixtures. Children are more active and prone to accidents, so their furniture and fixtures must be able to withstand wear and tear. Materials used in children's furniture and

fixtures are often non-toxic, hypoallergenic, and easy to clean, ensuring safety and hygiene (Han, et al., 2021).

Children's furniture and fixtures differ significantly from those designed for adults. The size, materials, and design are all tailored to accommodate their needs, interests, and safety. Children perceive furniture and fixtures differently from adults, with a focus on comfort, vibrant colours, playful designs, and functionality. Understanding these differences is essential in creating an environment that fosters the healthy development and well-being of children (Ye, Li, & Yang, 2021).

According to an article in Healthcare Design Magazine, the furniture used in a hospital waiting area should be durable, easy to clean, and comfortable for patients and their families (DiNardo, 2014). This applies to children's waiting areas as well, but there are additional factors to consider. Children's furniture and fixtures should be designed to accommodate their smaller size and provide a sense of safety and security (Morgan, 2015).

For example, child-sized chairs and tables can be used to create a comfortable and inviting environment for children in a waiting area. These chairs should have rounded edges and be made of materials that are easy to clean to ensure safety and hygiene. Additionally, a variety of seating options, such as bean bags or floor cushions, can be provided to cater to different age groups and preferences (González, 2020).

In a study published in the Journal of Environmental Psychology, researchers found that the presence of play equipment and toys in a waiting area can have a positive impact on children's psychological well-being. As such, children's waiting areas

should include toys, books, and other play equipment to keep children entertained and engaged while they wait (González, 2020).

Apart from this, the fixtures used in children's waiting areas should also be carefully selected. Child-friendly fixtures, such as colourful wall murals or themed décor, can help create a cheerful and engaging environment (Verschoren, et al., 2015). According to a study published in the Journal of Health Design, the use of visually interesting and colourful materials can enhance patients' satisfaction and overall experience (Qi, Yan, Lau, & Tao, 2021).

In conclusion, when designing a waiting area in hospitals, furniture and fixtures play an essential role. In children's waiting areas, the furniture should be designed to accommodate their smaller size, provide a sense of safety and security, and be easy to clean. Play equipment and toys should also be included to keep children entertained and engaged, while child-friendly fixtures can create a cheerful and engaging environment.

2.4.5 Entertainment

Entertainment is an essential part of our daily lives, and it plays an essential role in shaping our experiences and perceptions of the world around us. Children perceive entertainment differently, and this can be attributed to several factors, including developmental stages, cognitive abilities, and social and cultural factors. Children and adults have different developmental stages, and this influences their perception of entertainment (Cohen, 2001).

Children are still developing their cognitive abilities and have limited attention spans, so they tend to prefer entertainment that is short, simple, and engaging. For example,

children may prefer shows with bright colours, catchy tunes, and simple storylines (Anderson & Pempek, 2005). On the other hand, adults have more advanced cognitive abilities and longer attention spans, which enables them to appreciate entertainment that is more complex, such as dramas or documentaries (Cohen, 2001). As an example, Lucile Packard children's hospital Stanford has a waiting room that is designed based on adults and kid's needs. Using bright colours and soft textured materials and fabric to differentiate the play area for kids which is centralized and being perceived by their parents in a round system seating design enhances the feeling of safety. (see figure 18)

Figure 18: Lucile Packard Children's Hospital Stanford (URL 9)

Cognitive abilities also play a crucial role in how children perceive entertainment. Children's cognitive abilities are still developing, so they tend to perceive entertainment more literally. For example, children may take fictional stories or characters as real, which is why they tend to enjoy fantasy-based entertainment. Adults, on the other hand, have a more advanced understanding of reality and can

differentiate between what is real and what is not, which affects their perception of entertainment. This explains why adults tend to prefer entertainment that is more grounded, such as dramas or documentaries (Payir, et al., 2021).

Social and cultural factors also influence how children and adults perceive entertainment. Children are heavily influenced by their environment, and their entertainment preferences are often shaped by what is popular among their peers. Children tend to prefer entertainment that is familiar to them, such as characters they recognize from popular movies or TV shows. While adults are more likely to seek out entertainment that reflects their personal interests and values. For example, adults may prefer entertainment that aligns with their political views or religious beliefs (Huang, 2018).

Subsequently, children and adults perceive entertainment differently, and this can be attributed to several factors, including developmental stages, cognitive abilities, and social and cultural factors. Children prefer entertainment that is short, simple, and engaging, while adults prefer entertainment that is more complex and grounded. Children perceive entertainment more literally, while adults have a more advanced understanding of reality. Finally, children's entertainment preferences are often shaped by their environment, while adults seek out entertainment that aligns with their personal interests and values. Understanding these differences is essential in creating entertainment that caters to different age groups and demographics (Summers, 2013).

2.5 Child Ergonomics

The design of a child-friendly waiting room in hospitals requires careful consideration of the unique needs and preferences of young patients. This includes factors such as

sense of belonging, safety, and well-being, all of which are closely linked to the principles of ergonomics (HDR, 2019).

The design of child-friendly waiting rooms in hospitals requires a comprehensive approach that considers the unique needs and preferences of young patients. The principles of ergonomics provide a useful framework for creating environments that promote a sense of belonging, safety, and well-being (HDR, 2019). By incorporating these factors into the design process, hospitals can create waiting rooms that are welcoming, engaging, and supportive for paediatric patients and their families (Qi, Yan, Lau, & Tao, 2021).

2.5.1 Furniture and Fixtures

One of the most important aspects of ergonomics in the design of child-friendly waiting rooms is the layout. According to a study by Serrano and colleagues (2018), the layout of waiting rooms should be designed to promote circulation and avoid congestion. This can be achieved by creating clear pathways and separating different areas of the waiting room to prevent overcrowding. Additionally, the placement of furniture and equipment should be arranged to cater to the needs of children and their caregivers, such as providing comfortable seating options and accessible outlets for electronic devices (Sinha & Diacovo, 2020).

Another critical aspect of ergonomics in the design of child-friendly waiting rooms is the selection of furniture. Furniture should be chosen for its durability, safety, and ease of use. Soft and comfortable seating options, such as sofas and armchairs, can provide a cozy and inviting atmosphere for children and their families. Additionally, furniture should be designed with child safety in mind, such as selecting tables and chairs with rounded edges and non-toxic materials (Salvador, 2018).

Furthermore, the use of technology and interactive displays can also enhance the ergonomics of child-friendly waiting rooms. According to a study by the Journal of Architectural and Planning Research, technology such as touch screens and interactive displays can help engage and distract children in hospital waiting rooms. This can be particularly useful in alleviating anxiety and boredom in young patients, who may be nervous or restless while waiting for medical appointments (Ulrich, et al., 2005).

In addition to these factors, the choice of colours, lighting, materials, and textures also plays a crucial role in the ergonomics of child-friendly waiting rooms. As mentioned earlier, the selection of colours and lighting should consider the emotional responses and circadian rhythms of children, while materials and textures should be chosen for their durability, safety, and ability to provide a multisensory experience (Verschoren, et al., 2015).

According to a study by Khoo- Lattimore (2015), the design of furniture should also consider the needs of caregivers, who may need to assist children in sitting or moving around. The study found that the use of furniture with adjustable features such as height and armrests, as well as easy-to-clean materials, can enhance the experience of both children and caregivers in waiting rooms (Khoo-Lattimore, 2015).

Additionally, the furniture should be durable and sturdy to ensure safety. Children may become restless or excited in a waiting room, so furniture must be able to withstand movement and play without tipping over or breaking. Materials such as plastic or wood are popular choices for furniture in child-friendly waiting rooms due to their durability (Pheasant & Haslegrave, 2006).

In addition to these design components, other factors, such as the layout and furniture, can also impact the well-being and satisfaction of patients and their families in hospital waiting rooms. For example, a study by the Journal of Health Design found that the layout and configuration of waiting rooms can impact patient satisfaction and perceived wait time. Therefore, it is essential to design waiting room sections that are efficient and allow for easy navigation (Bleustein, et al., 2014).

Moreover, furniture selection is also important in designing a child-friendly waiting room section. Furniture that is easy to clean, durable, and comfortable is essential, as it can help promote a hygienic and welcoming environment. (see figure 19) as an example of versatile, lightweight furniture solution for children's areas. The seats are easy to move, nest together when not in use, and are covered in a durable, easy-to-clean material with a non-slip bottom. This makes the set a practical choice for dynamic environments requiring flexibility and adaptability. Additionally, furniture that is appropriately sized for children can help promote a sense of comfort and security (Pheasant & Haslegrave, 2016). Using the same furniture as an example, The difference in adult and kids' furniture is shown in the picture by comparing the height and width. As shown, adults' seating height is almost double that of the kids seating height as well as a wider seat in adults' version. (see figure 20)

Figure 19: SoftScape Crescent Seating Set, 7 Piece (URL 10)

Figure 20: SoftScape Crescent Seating Set, 7 Piece. Dimensions (URL 10)

Chapter 3

DEVELOPMENT PROCESS OF CHILDREN'S HEALTHCARE SERVICES

Delving into the evolution and development of children's healthcare spaces around the world, with a specific focus on Northern Cyprus and Kuwait, this part of the study provides a comprehensive overview of the changes and advancements in this field. It explores how the components of interior design have been incorporated and utilized in these settings over time. This section aims to provide insights into the unique challenges and opportunities in designing children's hospitals in different cultural and geographical contexts. It sets the stage for understanding the current state of children's hospitals and the potential for future improvements through thoughtful and child-centric interior design.

3.1 Development of Children's Healthcare Services in the World

Children's hospitals, as we understand them today, are institutions dedicated to the care of sick children. However, this definition does not fully capture the breadth and depth of their roles. Many of the larger children's hospitals encompass not only treatment but also preventive care and have always emphasized research and teaching. Some have evolved into comprehensive children's medical centres covering every aspect of child welfare and study (Casimir, 2019).

The development of children's hospitals has been a significant part of the evolution of healthcare worldwide. These specialized institutions have played a crucial role in

improving the health and well-being of children, offering not only treatment but also preventive care, research, and teaching (Smith, 2019).

The history of children's hospitals is intertwined with the history of hospitals in general. Early forms of hospitals are known to have existed in the early civilizations of Mesopotamia, Egypt, Asia, and other areas. However, the concept of a hospital dedicated solely to the care of children is a recent development, emerging in the 19th and 20th centuries as paediatric medicine became recognized as a distinct specialty (Mark, 2023).

In the 20th century, children's hospitals began to proliferate, as paediatric medical and surgical specialties separated from internal medicine and adult surgical specialties. These hospitals are characterized by greater attention to the psychosocial support of children and their families. Many of the larger children's hospitals encompass not only treatment but also preventive care and have always emphasized research and teaching (Mattson, 2019).

Today, children's hospitals are vital institutions that provide comprehensive healthcare services to children, regardless of their ability to pay. They educate future providers, drive discovery, and innovate treatments, collaborate to improve children's health, and work in and with their communities to lead health improvement initiatives for children (Casimir, 2019). They are also at the forefront of implementing child-friendly designs and practices, creating environments that cater to the unique needs and preferences of children and their families (Hamdan, 2016).

The development of children's hospitals worldwide has significantly contributed to the advancement of paediatric healthcare. These institutions continue to evolve, adapting to the changing needs of children and their families, and remain committed to improving the health and well-being of children. They are a testament to the global commitment to ensuring that every child has access to the best possible healthcare (Casimir, 2019).

3.1.1 According to the Components of Interior space

The design and development of children's hospitals around the world have evolved significantly over time, with a growing emphasis on creating a healing and comforting environment for young patients. This involves considering various components of interior space, such as lighting, acoustics, colour, and finishes. (Carr, R. F, 2017)

One of the key design strategies for paediatric spaces is to inspire confidence, encourage playfulness, and offer hope. This can be achieved using positive distractions, such as interactive multi-touch walls, playrooms for young patients, and high-tech gathering spaces for teenagers. The architectural language should be crafted in a way that children and adults intuitively understand, using form, materials, colour, and texture to develop places where patients and their families feel a sense of belonging and a more home-like atmosphere. (HDR, 2019)

Another important aspect is the organization of the unit. Paediatric patients have different social and privacy needs than adults, and the layout of the unit should respond accordingly2. The concept of creating 'neighbourhoods' within the hospital, each with its own identity, helps to break down the scale of the unit and reduces stress in patients, families, and caregivers. (HDR, 2019)

Moreover, the role of family members as caregivers is also considered in the design of children's hospitals. Spaces are designed to accommodate families, including family sleep rooms, kitchens, laundry facilities, extra storage, and other spaces that allow families to continue familiar and comforting routines for a child. (HDR, 2019)

In summary, the development of children's hospitals involves an integrated approach that considers various components of interior space to create a healing, comforting, and engaging environment for children and their families.

3.2 Development of Healthcare Services in Northern Cyprus

Despite extensive research efforts, specific information regarding children's healthcare services in Northern Cyprus remains elusive. This lack of data underscores the need for comprehensive studies in this area. In light of this, the focus of the discussion will shift towards a broader overview of the healthcare services available in Northern Cyprus. This general exploration aims to provide a foundational understanding of the healthcare landscape in the region, which can serve as a stepping stone for future, more targeted research into children's healthcare services.

Northern Cyprus, a self-declared state recognized only by Turkey, is located on the northern part of the island of Cyprus. With a population of approximately 300,000 people, the country faces many challenges in terms of providing quality healthcare for its citizens, especially for children. This case study examines the development of healthcare services in Northern Cyprus and the efforts made to provide quality healthcare services for children (Rahmioglu, Naci, & Cylus, 2012).

Before the establishment of the Turkish Republic of Northern Cyprus (TRNC) in 1983, healthcare services were provided by private practitioners and small hospitals.

However, after the establishment of the TRNC, the government started to invest in the healthcare sector. The healthcare system in Northern Cyprus is available to all those who have social security insurance, and their partners and children. Use of the accident and emergency departments is free to anyone. There are also private hospitals and private polyclinics, and it is possible for people to get treatment in the Republic of Cyprus (Rahmioglu, Naci, & Cylus, 2012).

In recent years, the TRNC government has taken several steps to improve the healthcare services. However, I could not find any specific initiatives targeted at children's health. It is possible that such programs exist under different names or that the information is not readily available online. The development of healthcare services in Northern Cyprus has come a long way since the establishment of the TRNC. The opening of state-of-the-art facilities and implementation of various healthcare programs have improved the quality of healthcare services. However, there is still a long way to go, and the government needs to continue investing in the healthcare sector to ensure that every citizen in Northern Cyprus has access to quality healthcare services (Gauldie, 2017).

3.2.1 According to the Components of Interior Design

Throughout history, Northern Cyprus has been influenced by various cultures, including Byzantine, Ottoman, and British, which have all contributed to the development of the region's interior design (Vidiakin, 2021). The components of interior design have evolved over time, reflecting the cultural and social changes that have occurred in Northern Cyprus.

One of the significant components of interior design in Northern Cyprus is the use of traditional materials such as stone and wood, which are still widely used today

(Zholnirova, 2020). The traditional building materials of Cyprus are mostly natural and locally produced, which reflects the strong connection between the people and the land. This connection is evident in the use of stone and wood in traditional Cypriot houses, which feature thick stone walls to provide insulation from the heat and cold, and wooden roofs to protect from the components (Karimizadeh, 2015).

In addition to traditional materials, the use of colour is another essential component of interior design in Northern Cyprus. Colours are used to create a sense of warmth and hospitality in Cypriot homes, with earthy tones and warm shades of yellow, orange, and red being popular choices. This use of colour is reflected in many traditional Cypriot houses, where bright colours are used to decorate walls and ceilings, and vibrant textiles are used to adorn furniture (Alnasser, 2013).

Another key component of interior design in Northern Cyprus is the use of patterns and motifs. Patterns and motifs have long been a part of Cypriot culture, and this is evident in the intricate designs that adorn textiles, pottery, and other decorative items. These designs are often inspired by nature, featuring motifs such as flowers, leaves, and animals, and are used to add visual interest and texture to interior spaces (Sokienah, 2021).

The evolution of interior design in Northern Cyprus can also be seen in the incorporation of modern components into traditional design. Contemporary Cypriot designers are drawing on traditional components and techniques to create modern, functional spaces that reflect the region's cultural heritage. This blending of old and new is evident in many modern Cypriot homes and public spaces, where traditional

materials and design components are combined with modern technologies and materials to create unique and functional spaces (Cordan, Dincay, & Teixeira, 2014).

In conclusion, the components of interior design in Northern Cyprus have evolved over time, reflecting the cultural and social changes that have occurred in the region. The use of traditional materials such as stone and wood, colour, patterns and motifs, and the incorporation of modern components into traditional design are all essential components of interior design in Northern Cyprus. As Northern Cyprus continues to evolve and grow, it will be exciting to see how these components continue to be incorporated into the region's interior design (Cordan, Dincay, & Teixeira, 2014).

3.3 Development of Children's Healthcare Services in Kuwait

Kuwait is a country in the Middle East that has been witnessing significant growth in its healthcare sector in recent years. The development of children's hospitals in Kuwait has been particularly noteworthy, with a focus on providing high-quality care to children in a safe and child-friendly environment. This case study aims to explore the development of children's hospitals in Kuwait, focusing on the role of interior design in creating a comfortable and child-friendly environment (Salman, et al., 2020).

The development of children's healthcare in Kuwait can be traced back to the establishment of the Kuwait Children's Hospital in 1970. Since then, several other hospitals have been established across the country, including the Al-Adan Hospital, which has a dedicated children's wing. However, it was not until the early 2000s that there was a concerted effort to improve the quality of children's healthcare in Kuwait, with a focus on creating a child-friendly environment (Alanzi, Alkheder, & Qudeimat, 2019).

Interior design has played a crucial role in the development of children's hospitals in Kuwait. The focus has been on creating an environment that is welcoming and child-friendly, while also ensuring that it is safe and hygienic. One of the key design features that have been implemented in children's hospitals in Kuwait is the use of bright and cheerful colours, which have been found to have a positive impact on children's mental health. Additionally, the use of themed rooms, such as a space-themed room, has been found to help children feel more comfortable and at ease during their hospital stay.

Another key aspect of interior design in children's hospitals in Kuwait is the use of play areas. Play areas have been found to have a significant impact on children's emotional well-being, helping to reduce stress and anxiety levels. The play areas in children's hospitals in Kuwait have been designed to be safe and hygienic, with a range of toys and games to keep children entertained during their stay.

In short, the development of children's hospitals in Kuwait has been a significant achievement, with a focus on providing high-quality care in a safe and child-friendly environment. Interior design has played a crucial role in creating this child-friendly environment, with a focus on bright colours, themed rooms, and play areas. The use of these design features has been found to have a positive impact on children's mental health and emotional well-being, helping to reduce stress and anxiety levels.

3.3.1 According to the Components of Interior space

Interior design has a long and rich history that has developed over the years. Kuwait, a country located in the Arabian Gulf, has a unique history that has influenced the evolution of its interior design. Kuwait's architecture, cultural heritage, and economic growth have all played a crucial role in shaping the country's interior design. This research will examine how the components of interior design have evolved throughout

history in Kuwait, with a focus on the traditional Kuwaiti architecture, the impact of modernization, and the current trends in interior design (Baldwin, 2020).

Kuwaiti traditional architecture reflects the country's rich cultural heritage. The architecture is a mix of Arab, Islamic, and Persian influences, which date back to the pre-oil era. The Kuwaiti house is designed to be a social space that fosters family bonding and hospitality (Nelson, 2021). Kuwaiti houses typically have a central courtyard, known as the "Hosh," which acts as the main social space. The Hosh is surrounded by living spaces, known as "Diwaniyas," which are designed to be large and spacious to accommodate guests. The use of natural materials such as mud, stone, and wood are prevalent in traditional Kuwaiti architecture, which helps to regulate the internal temperature and maintain the house's coolness (Al-Shemmari, 2016).

With the discovery of oil in the 1930s, Kuwait experienced rapid economic growth and modernization. This period of modernization brought about a significant shift in the country's architecture and interior design. Modern buildings and skyscrapers replaced traditional houses, and the use of concrete and steel became prevalent. The focus shifted from traditional designs to modern, sleek, and minimalistic designs that were more in line with Western architecture (Fabbri, 2020).

Today, Kuwait's interior design has evolved into a unique blend of traditional and modern designs. Interior designers in Kuwait have started to incorporate traditional Kuwaiti components into modern designs, creating a fusion of styles. For example, the use of traditional Kuwaiti textiles such as Sadu, which is a handwoven woollen fabric, is prevalent in modern interior design (Ghloum, 2023). Additionally, traditional Kuwaiti architectural components such as arches, vaulted ceilings, and ornamental

screens have been incorporated into modern designs. The use of natural materials, such as wood and stone, has also made a comeback in modern interior design (Kipoz, & Er, 2014).

In Summary, Kuwait's architecture and interior design have evolved significantly throughout history. The traditional Kuwaiti architecture, influenced by Arab, Islamic, and Persian components, has been replaced by modern, minimalistic designs during the period of modernization. However, the current trends in interior design in Kuwait display a fusion of traditional and modern designs, creating a unique style that is distinctively Kuwaiti. As Kuwait continues to grow and develop, it will be interesting to see how the country's architecture and interior design continue to evolve.

3.4 General Overview

Since its establishment in 1983, the Turkish Republic of Northern Cyprus has improved its healthcare sector, particularly for children, through government investment. However, more targeted initiatives for children's health are needed. Hospitals feature spacious, well-lit waiting areas with colourful yet dull seatings, innovative components like mezzanine floors, and playrooms. But design considerations are needed to prevent sensory overload and maintain a cozy atmosphere. Safety measures, noise control, and regular maintenance checks are crucial for ensuring the wellbeing of young visitors. The location of playrooms needs careful management to balance liveliness and serenity.

Kuwait's healthcare sector has seen significant growth, especially in children's hospitals, since 1970. Efforts since the early 2000s have focused on creating a child-friendly environment with bright colours, themed rooms, and play areas. These

features contribute to children's mental health and comfort. Hospitals in Kuwait have made substantial efforts to create child-friendly waiting areas. However, continuous improvements in seating, lighting, and dedicated spaces are recognized as necessary, with safety being a priority.

In short, The Turkish Republic of Northern Cyprus (TRNC) and Kuwait have both made significant strides in improving their healthcare sectors, particularly for children. The improvements in TRNC's healthcare began with its establishment in 1983, while Kuwait's focus on children's healthcare started around the early 2000s, with the evolution beginning with the Kuwait Children's Hospital in 1970.

Both countries emphasize creating a child-friendly environment in hospitals. TRNC hospitals feature spacious, well-lit waiting areas with colourful yet dull seating, mezzanine floors, and playrooms. On the other hand, Kuwaiti hospitals incorporate bright colours, themed rooms, and play areas.

Safety measures, noise control, and regular maintenance checks are crucial in both countries. TRNC emphasizes the careful location of playrooms to balance liveliness and serenity. Kuwait focuses on continuous improvement in areas such as seating arrangements, lighting, and dedicated spaces for children, with safety being a priority.In terms of areas for improvement, TRNC needs more targeted initiatives for children's health and design considerations to prevent sensory overload and maintain a cozy atmosphere. Kuwait recognizes the need for continuous improvement in creating child-friendly waiting areas. In summary, while both countries have made progress, there are unique aspects and areas for improvement in each of their approaches to children's healthcare.

Chapter 4

CASE STUDY: SELECTED CHILDREN'S HOSPITALS IN NORTHERN CYPRUS AND KUWAIT

This section of the study discusses the case study's limitations and the methodology used. It explains the organization and use of an observation table for hands-on analysis in each hospital. The analysis process and the results from ten hospitals, five in Northern Cyprus and five in Kuwait, are presented. Following this, the findings are discussed, with comparisons made between the hospitals to highlight key insights. The section concludes with recommendations for designing hospital waiting areas to better meet a child's needs, based on the insights gained from the analysis. This comprehensive exploration aims to provide valuable insights for designers and healthcare professionals to create more child-friendly hospital spaces.

4.1 Limitation of Case Study

In this study, psychological effects and spatial findings will be determined comparatively in different paediatric hospitals in Northern Cyprus and Kuwait. The case study will be held and limit with two countries: Northern Cyprus and Kuwait for a more diverse and comparative research. Each country will have five hospitals to observe. While designing a child-friendly waiting room section in hospitals is important, there are several limitations to this study.

Firstly, the recommendations provided in this study are based on general developmental theories and may not necessarily apply to all children. Every child is

unique and may have their own individual preferences and needs that may not be fully addressed by the design recommendations provided in this study. Therefore, it is important to consider the specific needs of each child and their family when designing waiting room sections.

Secondly, while cultural and socio-economic factors were discussed in this study as important considerations, it is difficult to provide specific design recommendations that can accommodate the diverse needs and preferences of all patients and their families. The cultural and socio-economic backgrounds of patients and their families may vary significantly and can impact their perceptions of the physical environment of the hospitals. Therefore, it is important to collaborate closely with patients and their families to understand their needs and preferences when designing waiting room sections.

Thirdly, this study focuses on the design of waiting room sections in hospitals and does not consider other factors that may impact the well-being of paediatric patients, such as the quality of medical care or the behaviour of medical staff. While a well-designed waiting room section can help alleviate stress and anxiety, it is important to consider the broader context of medical care when addressing the needs of paediatric patients.

In this research, the focus is exclusively on private hospitals in Northern Cyprus and Kuwait, excluding public hospitals for these reasons. To begin with, private hospitals often have more leeway in terms of interior design, thereby providing a more diverse range of case studies for the research. Additionally, the socio-economic backgrounds of patients and their families in private hospitals may differ from those in public hospitals, which could impact their perceptions of the waiting room space.

Therefore, to maintain consistency in the research parameters and to ensure that the design recommendations are as applicable as possible to the hospitals being studied, this research is limited to private hospitals. It is important to note that while the research strives to provide comprehensive design recommendations, these are based on general developmental theories and may not necessarily apply to all children or accommodate the diverse needs and preferences of all patients and their families. Furthermore, this research is limited to the available research on interior design for children's hospitals up to the knowledge cutoff of 12/2023. The field of interior design is constantly evolving, and new research and design techniques may emerge that could further enhance the design of waiting room sections for paediatric patients.

4.2 Methodology of Case Study

The research for this thesis will be conducted through a comparative case study of children's hospitals in two countries: North Cyprus and Kuwait. These countries were selected for their diverse cultural and geographic contexts, which will provide a rich and varied sample for the study. A total of ten hospitals will be included in the sample, with five hospitals (combined) in each country. These hospitals will be studied to understand the physical environment of hospitals and how it impacts children's experiences.

The selection of hospitals for the study will be based on a set of inclusion and exclusion criteria. The inclusion criteria will include that the hospitals serve children up to 18 years of age and are in urban areas. The exclusion criteria will include that the hospitals are specialized in a particular area of healthcare (e.g., mental health, oncology) or have a unique design that may not be representative of other children's hospitals. A

purposive sampling method will be used to select the hospitals, with the aim of achieving a diverse and representative sample.

The data collection for this study will involve both observation and analysis of the interior design of the spaces. The observations will be conducted by the researcher during site visits to the hospitals, during which time photographs will be taken of the spaces. These photographs will be analysed using a standardized statistical analysis technique to identify the specific design components present in each hospital, including the use of colour, lighting, and materials.

In addition to observations, the study will also involve a review of existing literature on the topic of child-oriented design in healthcare spaces. This literature review will help to provide context for the observations and analysis and will help to identify potential gaps in the current understanding of the topic.

The data collected through observations and literature review will be analysed using quantitative methods. The descriptions of the design components in the hospital interiors, or the physical environment, will be analysed using thematic analysis to identify patterns and themes in the data. Quantitative data, such as the measurements of the design components in the hospital interiors, will be analysed using statistical techniques such as regression analysis to determine the relationship between the use of colour, light, and materials and children's experiences and outcomes in the hospitals. Overall, this methodology will provide a comprehensive approach to examining the use of colour, light, and materials in children's hospitals, and will help to shed light on the importance of child-oriented design in healthcare spaces.

4.2.1 Implementation of Study

The research process for this thesis involved three distinct stages. The first stage was the data collection process, which included observations. The purpose of this stage was to gather information on the design components and their impact on patients' experiences and outcomes in the waiting room sections of children's hospitals in Northern Cyprus and Kuwait. This stage was critical in providing a rich and detailed understanding of the factors that influence the design of waiting room sections, and the potential benefits and limitations of various design components.

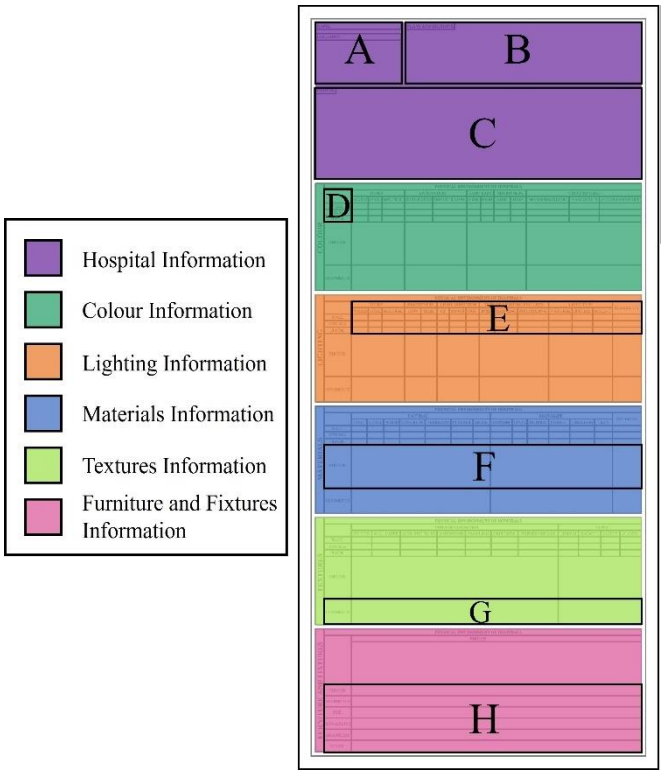
The second stage of the research process was the country regulation comparison, which involved comparing the design of the waiting room sections to the respective country's rules and regulations. This stage was important in understanding the specific requirements and constraints that apply to the design of waiting room sections in different countries. By examining the rules and regulations governing the design of waiting room sections in Northern Cyprus and Kuwait, the study was able to identify the differences and similarities in design requirements, and to determine how these requirements may impact the design of waiting room sections in each country.

The third and final stage of the research process was the country comparison, which involved comparing the data collected from both countries to each other. This stage was important in identifying the similarities and differences in the design of waiting room sections between Northern Cyprus and Kuwait. By comparing the design components and their impact on patients' experiences and outcomes in the waiting room sections of children's hospitals in both countries, the study was able to identify potential best practices and areas for improvement in the design of waiting room sections.

Overall, these three stages of the research process were critical in providing a comprehensive understanding of the design of waiting room sections in children's hospitals in Northern Cyprus and Kuwait. By gathering data through observations, comparing the design of waiting room sections to country regulations, and comparing data between the two countries, the study was able to identify potential best practices and areas for improvement in the design of waiting room sections in children's hospitals. The insights gained from this study can help inform the design of waiting room sections in children's hospitals in other countries and can contribute to improving the experiences and outcomes of paediatric patients and their families.

4.2.1.1 Table Explanation

In the research, a comprehensive table was utilized as a tool to meticulously record various aspects of hospital waiting rooms. This table included categories such as colour, lighting, materials, textures, and furniture and fixtures. This table was taken to each hospital, which allowed for an on-site, first-hand analysis of the waiting room spaces. This method ensured a high level of accuracy in the observations, as the environment was directly interacted with and assessed. The data collected from this process provided valuable insights into the physical characteristics of the waiting areas, contributing significantly to the overall understanding of the space (see figure 21).



A- Name of hospital and its location.
B- Plan(s) and section(s) of said hospital.
C- General photos of waiting area(s).
D- Wall, Ceiling, Floor section of table (does not change).
E- Categories for each table (changes depending on which information table used).
F- Photos specific to each information table.
G- Comments for both photos used and categories.
H- Furniture and fixtures table layout different for more information.

Figure 21: Table Explanation

4.3 Analysis of Hospitals

This research involves a three-stage research process to understand the design of waiting room sections in children's hospitals in Northern Cyprus and Kuwait. The first stage involved data collection through observations of patients and their families, to identify the factors that influence the design of waiting room sections and the potential benefits and limitations of various design components. The second stage involved comparing the design of waiting room sections to country regulations to understand the specific requirements and constraints that apply to the design of waiting room sections in different countries. The third stage involved comparing the data collected from both countries to identify similarities and differences in the design of waiting room sections and potential best practices and areas for improvement.

Overall, the research process was critical in providing a comprehensive understanding of the design of waiting room sections. By gathering data through observations, comparing the design to country regulations, and comparing data between the two countries, the study identified potential best practices and areas for improvement. The insights gained from this study can help inform the design of waiting room sections in children's hospitals worldwide, improving the experiences and outcomes of paediatric patients and their families.

4.3.1 Analysis of Hospitals in Northen Cyprus

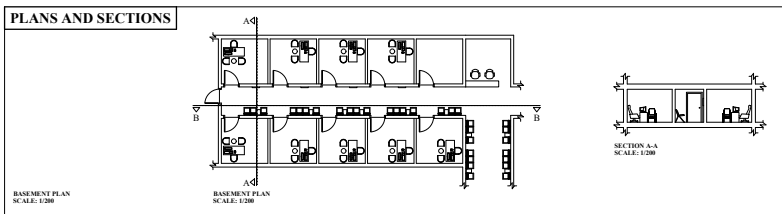
In Northern Cyprus, the design of children’s waiting rooms in hospitals tends to prioritize function over aesthetics. This approach mirrors the country’s steady economic growth and pragmatic focus on development. The hospitals, both state and private, cater to a diverse population and strive to provide efficient and effective healthcare services. Just as the children’s waiting rooms are designed to serve their purpose effectively, the country’s economic strategies are geared towards practical and sustainable growth. This parallel underscore a broader cultural emphasis on functionality and steady progress in Northern Cyprus.

Table 1: Yaşam Hospital

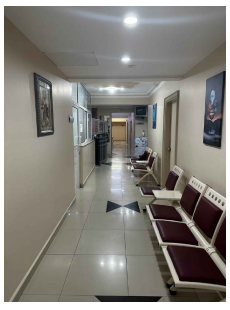
NAME: Yaşam Hospital

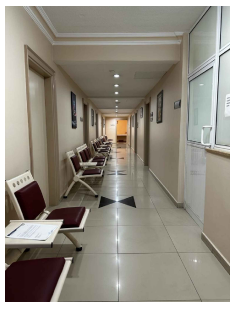
LOCATION: Klinikler Sk, Gazimağusa 9945

PLANS AND SECTIONS



PHOTOS





COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓				✓	✓			✓		✓	
CEILING			✓	✓		✓		✓			✓	
FLOOR	✓			✓	✓		✓		✓			✓
PHOTOS												
COMMENTS	• Warm colors such as light beige used for walls and doors as well as door frames in coffee color to emphasize. • White painted ceilings and white floor tiling. • Circulation patterns on floor in dark maroon color.			• All colors used are desaturated which creates an uneasy and uncomfortable feeling in kids.		• It is bright however not enough to light up the whole room and this problem creates corners covered in shadow and eventually creating an uncomfortable space for kids.				• Even though the dominant colors used are in beige tones, there are also browns and reds(maroon) which make the created color palette analogous and complementary.		

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓	✓				✓	✓				✓	✗
FLOOR														
PHOTOS														
COMMENTS	• Using neutral color lighting for general and task lightings to create a more comfortable space for kids.			• This specific waiting area has a lower brightness than the outside adult waiting room.		• Inset spotlights are used so the lighting is direct on the waiting area.								• Dim-able lighting systems used in ceilings for easy control over the area's atmosphere.

MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING						✓		✓						✓
FLOOR													✓	
PHOTOS														
COMMENTS	• Plaster used for walls are paint coated as finishing materials. • Main constructed ceilings are covered with a plaster layer as finishing material.							• Waiting corridors have gypsum suspended ceilings. • Ceramic floor tiling supported with patterns for easier circulation.						Suspended ceilings used in most of the basement floor excluding the beginning of the childrens' waiting area.

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS	 										
COMMENTS											

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	PHOTOS
	 
COLOUR	The chairs colors are dark red and white.
MATERIALS	The materials used for the chairs are fabric and steel for the structure.
SIZE	The size of the chairs is low enough to be used for children easily, but also comfortable enough for the adults users.
MOVABILITY	The chairs aren't moveable.
ERGONOMY	The chairs are 35cm high and 45cm wide.
OTHER	

4.3.1.1 Yaşam Hospital

Upon entering the basement of Yaşam Hospital, the main lobby extends before you, appearing elongated and narrow. It gives the impression of a corridor leading to a significant yet undisclosed location. On one side, rows of dark red chairs with a beige structure are neatly arranged, their stark uniformity lacking the inviting warmth one might seek in such a setting (see table 1).

The auditory experience in this space is pronounced. The absence of sound barriers leaves you exposed to the cacophony of chatter and echoing footsteps. This makes one wonder about the lack of a cozy corner where one could sit quietly with their thoughts. The lighting, too bright, resembles the sun shining indoors, which feels a bit intense when all one wants is to sit back and relax. A longing for a touch of homely warmth is palpable.

The children's area, tucked away from the main lobby. It is smaller and cozier. The chairs, similar to those in the main lobby, are arranged around a small play area. However, the space feels somewhat confined, and one might wish for more toys and vibrant colours to make the room come alive. The chairs, though orderly, do not seem very comfortable. They are a bit too straight and not particularly soft. As one enters the children's waiting area, it feels like a secret hideaway. The space, while not overly large, leaves one wishing for more room to play and explore. The chairs, mirroring the arrangement in the main lobby, leave one yearning for more inviting, colourful seating options that would engage a child's interest.

The noise level can be somewhat overwhelming. You can hear other children talking, and it is hard to concentrate on your own thoughts. One might wish for a quiet corner

where they could simply relax waiting for their appointment. The lighting, just like in the main lobby, is a bit too bright. One might miss the warm, cozy feeling of their room at home. Softer, more gentle lights, like the stars in the night sky, would be perfect. The walls are plain, and one cannot help but wish for some fun and colourful pictures of their favourite animals or cartoons. It would make the place feel more like a playground, and that would be delightful.

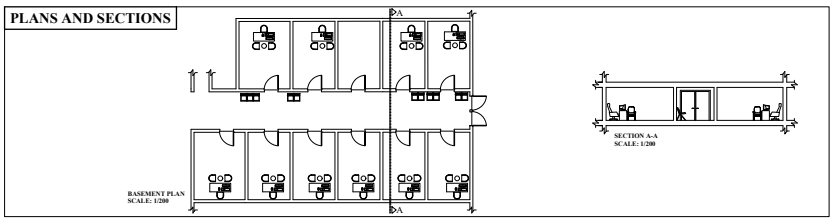
As a child, the waiting areas at Yaşam Hospital offer a blend of excitement and confusion. The main lobby, with its elongated design, bright lights, and uninviting chairs, might leave one craving a cozier, quieter space to escape the noise. Overwhelming noise and lighting might leave one yearning for a more soothing and playful atmosphere. These spaces, while functional, could benefit from some adjustments to truly transform them into welcoming, child-friendly environments that inspire joy and comfort. The investigation of these areas through the lens of colour, material, light, and furniture, and their impact on well-being, is a crucial aspect of enhancing the overall experience (see table 1).

Table 2: Cyprus Central Hospital

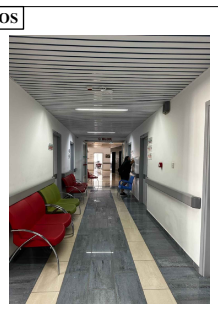
NAME: Cyprus Central Hospital

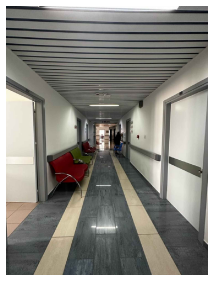
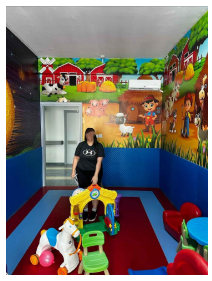
LOCATION: Eşref Bitlis, Gazimağusa 0392

PLANS AND SECTIONS



PHOTOS

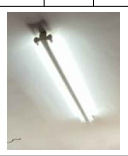


COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓			✓			✓	✓		✓		✓
CEILING			✓	✓			✓		✓	✓		
FLOOR	✓			✓		✓		✓		✓		✓
PHOTOS												
COMMENTS	• Consideration of cultural preferences in color choices is important. Being mindful of cultural connotations associated with colors ensures that the waiting area is inclusive and respectful of diverse backgrounds.			• Using colors that resonate with children's preferences or incorporating elements from popular characters can add a personalized touch. This personalization creates a familiar and friendly environment, enhancing the waiting area's appeal and making children feel more at ease.								

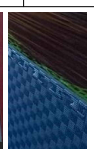
LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓		✓			✓	✓				✓	✗
FLOOR														
PHOTOS														
COMMENTS	• Optimizing brightness in children's spaces promotes a positive mood uplift, enhances visual comfort and safety, encourages exploration, facilitates learning, promotes alertness, creates a welcoming ambiance, and supports daily routines. This deliberate consideration of lighting contributes to a well-balanced and nurturing environment for children's growth and development.													

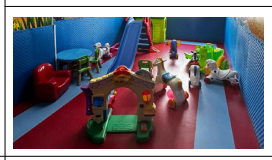
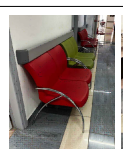
MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING						✓								✓
FLOOR													✓	
PHOTOS														
COMMENTS	• Ethylene-Vinyl Acetate, commonly known as EVA, is a versatile material with various applications in products designed for children. EVA is a type of plastic that combines flexibility, durability, and safety, making it suitable for items ranging from toys to footwear and safety mats.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	✓
CEILING									✓	✓	
FLOOR									✓	✓	✓
PHOTOS	    										
COMMENTS	• Designing spaces filled with toys and adorned with appealing characters creates an environment of joy, stimulates creativity, provides emotional comfort, facilitates learning through play, offers colorful visual stimulation, allows for personal expression, and fosters social bonds. This intentional design approach contributes to a holistic and enriching experience for children in their developmental journey.										

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	PHOTOS
	  
COLOUR	The chairs colors are red and green.
MATERIALS	They got plastic toys and the materials used for the chairs are fabric and steel for the structure.
SIZE	The size of the chairs is low enough to be used for children easily, but also comfortable enough for the adults users.
MOVABILITY	The chairs aren't moveable.
ERGONOMY	The chairs are 40cm high and 50cm wide.
OTHER	

4.3.1.2 Cyprus Central Hospital

From a child's perspective, stepping into the waiting area at Cyprus Central Hospital can be a captivating journey filled with curiosity and a hint of apprehension. The room, stretching an impressive 18.5 meters in length and 2.5 meters in width, immediately conveys a sense of spaciousness. It is a bustling space, starting with the reception area where adults engage in conversations with the staff, sparking hope for positive news and relief from anxieties (see table 2).

The highlight of this space for a child is undeniably the playroom. Upon entering, one's eyes are instantly drawn to the vibrant mural covering all the walls, akin to stepping into a colossal colouring book teeming with beloved cartoon characters. The mural, with its vivid colours and characters, instils a sense of adventure and thrill. However, a closer look reveals an unexpected detail – the walls are padded. They appear soft and snug, yet they subtly hint at caution, serving as a reminder that even in a friendly environment like this, accidents can occur. Adding to the intrigue is the mezzanine floor connected to the waiting area on the first floor, featuring large windows that flood the space with natural light, providing an engaging visual component for the children.

The flooring in the playroom stands out from the rest of the waiting area. It is covered in blue and red linoleum, offering a cushioned and welcoming surface that invites play and serves as a pleasant diversion from the reason for the hospital visit. However, the contrast with the cool-toned dark grey ceramic tiles and warm-toned beige strips in the rest of the waiting area creates a sense of two distinct worlds within the same space. The lighting in the playroom is another prominent feature. A long, white light on the ceiling illuminates the room, mimicking a burst of daylight, which can be energizing for play but a tad too intense for relaxation.

One of the most soothing aspects is the large windows in the playroom. They let in genuine sunlight, allowing one to gaze outside and observe the world beyond the hospital. It offers a brief escape from the clinical environment, fostering a moment of connection with the outside world. However, one cannot overlook the guiding lines on the floor. They form intriguing paths, much like mysterious trails, but they lead to no specific destination. It is akin to navigating a maze without a reward at the end, which can be somewhat perplexing.

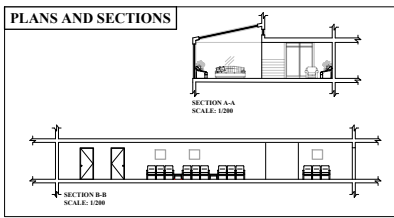
In summary, from a child's viewpoint, the waiting area at Cyprus Central Hospital elicits a range of emotions. The playroom, with its colourful mural and inviting floor, is a source of joy and excitement. However, the stark and brightly lit surroundings, the seemingly aimless guidance lines, and the cautionary padding on the walls can induce moments of discomfort. As a child, one might desire a softer, less intense environment and a clearer understanding of the design choices' purpose. While the space holds potential in catering to children's needs, there is room for enhancement to create a more comforting and child-friendly atmosphere (see table 2).

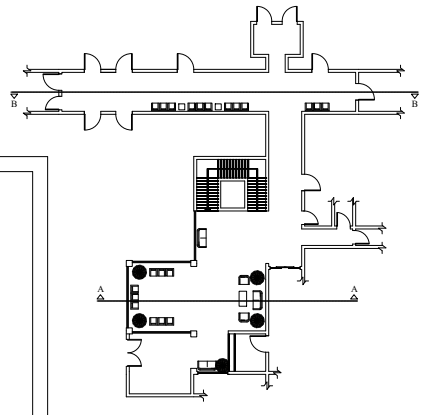
Table 3: Medicalport Tunccevik Hospital

NAME: Medicalport Tunccevik Hospital

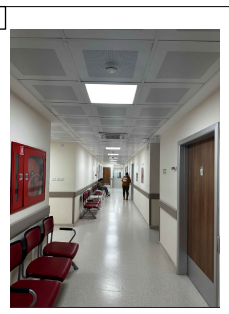
LOCATION: Altınkaya II yanı, Girne 99300

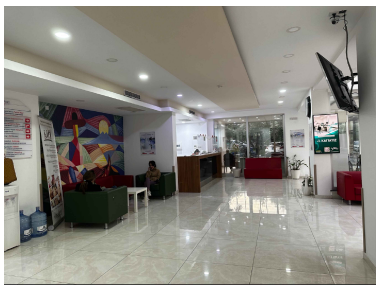
PLANS AND SECTIONS





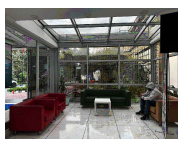
PHOTOS





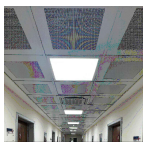
COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓			✓		✓			✓	✓		
CEILING			✓	✓		✓			✓	✓		
FLOOR			✓		✓	✓			✓	✓		
PHOTOS												
COMMENTS				• Bright ceiling colors can make kids feel energetic and creative, lifting their mood and making the space visually interesting. On the other hand, using muted colors (like neutral tones or pastels) on walls and floors creates a calm and soothing environment, aiming to reduce visual stimulation and ease feelings of anxiety or stress.		• Using low contrast (less difference in colors) makes the environment less visually stimulating. This can be especially helpful for children who are sensitive to too much visual activity.				• The use of a single color can simplify the visual environment, reducing visual complexity. This simplicity may be helpful for children who are easily overwhelmed or overstimulated, allowing for a more comfortable experience. • Monochromatic colors provide a harmonious and coordinated aesthetic. This uniformity in color can contribute to a visually pleasing and cohesive design, creating a sense of order and stability.		

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓		✓			✓	✓			✓	✓	✗
FLOOR														
PHOTOS														
COMMENTS	• Neutral tones in light fixtures create a comfortable and calming atmosphere for children, reducing eye strain and promoting a versatile, age-appropriate design. This lighting choice supports a conducive environment for activities and contributes to overall well-being, particularly in healthcare or educational settings.								• This type of lighting provides a sleek and unobtrusive appearance, making it a popular choice for contemporary interiors. Inset lights offer focused illumination, highlighting specific areas or features in a room while minimizing glare.					

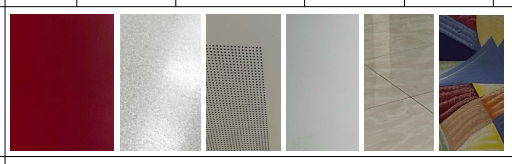
MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								✓
CEILING						✓								✓
FLOOR													✓	✓
PHOTOS														
COMMENTS	• this photo is from the ceiling.		• this photo is from the suspended ceiling.		• this photo is from the vinyl flooring.	• this photo is from the walls.								
	• vinyl flooring offers a durable and easy-to-clean surface, ideal for the high traffic and potential spills common in such spaces. Plaster walls provide a smooth and versatile backdrop, A suspended ceiling complements the design by concealing utilities, offering acoustic benefits, and allowing for the integration of lighting fixtures to create a well-lit and comfortable space for young patients.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING								✓		✓	
FLOOR									✓	✓	
PHOTOS											
COMMENTS											

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	PHOTOS
	
COLOUR	There is bright red colored chairs (upholster), that has black (backing) and gray (structure) elements.
MATERIALS	The chairs got leather, plastic and metal as materials used in them, there is also wood used for the side tables.
SIZE	The size of the chairs is low enough to be used for children easily, but also comfortable enough for the adults users.
MOVABILITY	The chairs are not movabale as they are fixed to each other in threes, but the tables are movable.
ERGONOMY	The chairs are 35cm high and 50cm wide.
OTHER	

4.3.1.3 Medicalport Tunççevik Hospital

Medicalport Tunççevik Hospital takes pride in its two distinct waiting areas, each unique in its layout and ambiance. The first, located right at the entrance, measures 9 meters by 4.5 meters, while the second, a more private space, extends 19 meters by 2.6 meters. Upon entering, one is greeted by a reception desk, with the general waiting area to the left offering two unique seating configurations. One area highlights a vibrant and modern mural, infusing the space with a splash of colour, while the other side offers a more enclosed setting with glass walls and a ceiling, promoting a sense of connection with nature due to the abundant greenery on the other side (see table 3).

From a child's viewpoint, the first waiting area presents a spectrum of colours in its seating arrangement, boasting sofas in lively shades of red, green, and beige. This colourful selection might inspire a sense of energy and playfulness. On the other hand, the second waiting area, designed specifically for children with lower chairs, may evoke feelings of seclusion and comfort.

These spaces are designed with purpose. The first waiting area is awash with light, thanks to artificial lighting and two curtain walls that let in natural light, creating a well-lit and welcoming environment. In contrast, the second waiting area, being secluded and lacking natural light, relies on artificial lighting to ensure visibility.

Importantly, the secluded nature of the second waiting area, while potentially providing a sense of privacy, could also induce a feeling of confinement, affecting the overall well-being of children and their parents. Additionally, the use of vibrant colours in the first waiting area, while visually attractive, may need to be moderated to prevent overwhelming sensory experiences for some individuals.

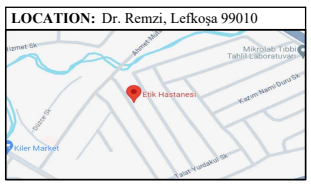
The safety and well-being of children are of utmost importance. Both waiting areas are conveniently equipped with nearby bathrooms. However, the potential impact of the secluded nature of the second waiting area on a child's emotional state warrants careful consideration. It is crucial to ensure that the lower chairs provided for children are comfortable and ergonomically designed, especially considering potential extended waiting periods.

The approach of Medicalport Tunççevik Hospital to children's waiting areas demonstrates a praiseworthy balance between academic functionality and architectural design. However, further considerations for sensory experiences and the emotional impact of the layout, particularly in the more secluded space, could enhance the overall well-being of young patients and their parents (see table 3).

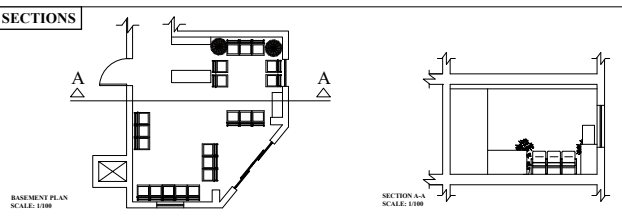
Table 4: Etik Hospital

NAME: Etik Hospital

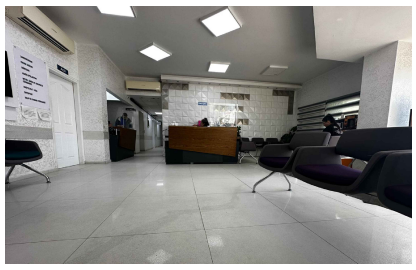
LOCATION: Dr. Remzi, Lefkoşa 99010

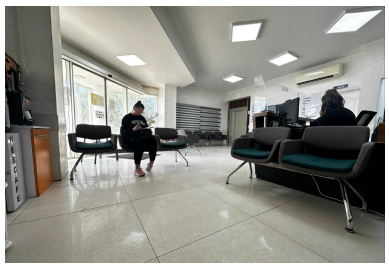


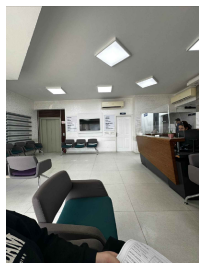
PLANS AND SECTIONS



PHOTOS

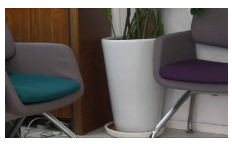






PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓			✓	✓		✓		✓			✓
CEILING			✓	✓		✓			✓	✓		
FLOOR	✓	✓			✓	✓			✓	✓		
PHOTOS												
COMMENTS	• Bright ceiling colors can make kids feel energetic and creative, lifting their mood and making the space visually interesting. On the other hand, using muted colors (like neutral tones or pastels) on walls and floors creates a calm and soothing environment, aiming to reduce visual stimulation and ease feelings of anxiety or stress.					• Using low contrast (less difference in colors) makes the environment less visually stimulating. This can be especially helpful for children who are sensitive to too much visual activity.				• The use of a single color can simplify the visual environment, reducing visual complexity. This simplicity may be helpful for children who are easily overwhelmed or overstimulated, allowing for a more comfortable experience. • Monochromatic colors provide a harmonious and coordinated aesthetic. This uniformity in color can contribute to a visually pleasing and cohesive design, creating a sense of order and stability.		

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓	✓	✓			✓			✓	✓		✗
FLOOR														
PHOTOS														
COMMENTS														

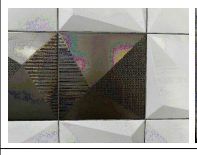
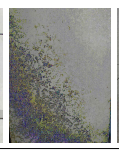
PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								✓
CEILING						✓								✓
FLOOR													✓	
PHOTOS														
COMMENTS	• while the materials in this space are relatively basic, the colours and textures thrive in both the space and the furniture.													

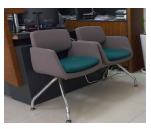
PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL											
CEILING											
FLOOR											
PHOTOS											
COMMENTS	• Exposure to different textures plays a crucial role in children's development by providing tactile stimulation, supporting sensory exploration, and enhancing cognitive, emotional, and social skills. It fosters creativity, imagination, and language development, contributing to a well-rounded sensory experience that promotes holistic growth.										

PHYSICAL ENVIRONMENT OF HOSPITALS

FURNITURE AND FIXTURES

	PHOTOS
	 
COLOUR	There are dark teal and dark purple chairs (upholster), that have cool gray (backing) and chrome (structure) elements. The overall color scheme of the waiting room is a muted gold and white color palette.
MATERIALS	The chairs are made of Polyester Basket weave fabric which is rough but durable for long term use and can withstand a child's' fidgeting tendencies. The plants are fake and potted in white ceramic pots that are bottom heavy as to not topple over if bumped into.
SIZE	The size of the chairs are not suitable for children as they are too high for them to sit comfortably with their feet flat on the ground; they were designed with only adult users in mind.
MOVABILITY	The chairs are not movabale as they are fixed to each other in threes and twos.
ERGONOMY	The chairs are 45cm high, 50cm wide, and 45cm deep.
OTHER	

4.3.1.4 Etik Hospital

Situated at the entrance, the waiting area of Etik Hospital covers an area of 5.5 meters by 6 meters. It is divided into two seating sections, ensuring both accessibility and visual appeal. The reception area, centrally positioned at the front, acts as a welcoming centrepiece. The seating arrangement features two distinct colours, dark purple and teal, adding a vibrant touch to the space. The chairs, upholstered in a rough fabric, provide a tactile and sensory experience. The incorporation of plants in ceramic pots introduces a natural aesthetic, fostering a connection with nature (see table 4).

The walls display a dual design approach. One wall is adorned with white and black ceramic tiles, adding a dynamic visual component, while the others feature textured white paper in a soothing beige hue. The flooring, made up of off-white ceramic tiles, provides a neutral canvas. The ceiling, predominantly white with suspended components, blends seamlessly with the overall design. An abundance of natural light floods through the windows and a glass door, creating a bright and airy atmosphere, further enhanced by well-distributed artificial lighting.

The waiting area embodies a harmonious fusion of colour, texture, and natural components. The contrast of dark purple and teal chairs against the neutral ceramic tile backdrop creates a visually engaging and balanced ambiance. The strategic placement of ceramic pots with plants introduces organic shapes, contributing to a tranquil atmosphere. The dual wall designs cater to varying aesthetic preferences and visual experiences. The interplay of natural and artificial light enhances the overall spatial experience, ensuring a well-lit environment. The glass door not only allows natural light to enter but also offers a connection to the outside, reducing a sense of confinement.

From a child's perspective, the waiting area transforms into a world of colour and texture. The vibrant chairs offer a playful seating experience, while the presence of plants introduces a comforting component of nature. The diverse wall designs may pique a child's curiosity, providing visual stimulation. The abundance of natural light and the transparent door could foster a welcoming atmosphere, alleviating any feelings of apprehension.

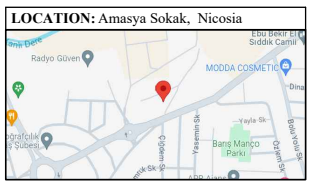
While the design is commendable, the rough fabric on the chairs might present a challenge in terms of cleanliness and maintenance. Additionally, the choice of dark purple and teal, while visually stimulating, may be overwhelming for some children. The textured white paper on the walls could be susceptible to wear and tear, necessitating regular maintenance. Moreover, the suspended ceiling components might pose a safety concern, especially if not securely installed.

Child safety and wellbeing are paramount considerations. The presence of ceramic pots raises potential safety concerns, and it is crucial to ensure they are child-friendly and securely placed. The choice of materials, especially in areas accessible to children, should prioritize safety, durability, and ease of maintenance. Regular safety audits and childproofing measures are essential to create a secure environment. Etik Hospital's children's waiting area aims to strike a balance between aesthetics, functionality, and child-friendly components. While the design is thoughtfully executed, addressing considerations of cleanliness, colour impact, and safety measures will further enhance the overall experience for young patients and their families (see table 4).

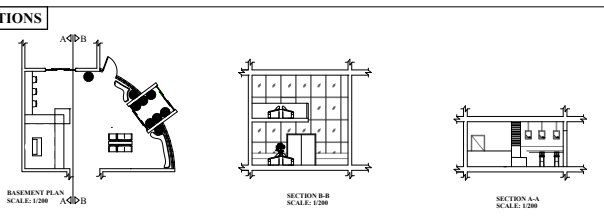
Table 5: Elite Research & Surgical Hospital

NAME: Elite Research & Surgical Hospital

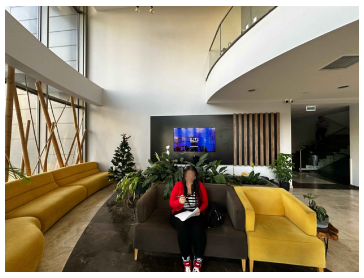
LOCATION: Amasya Sokak, Nicosia

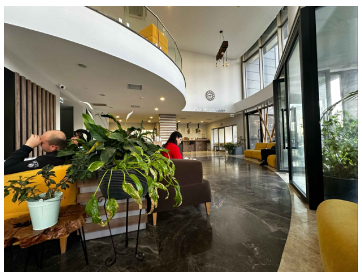


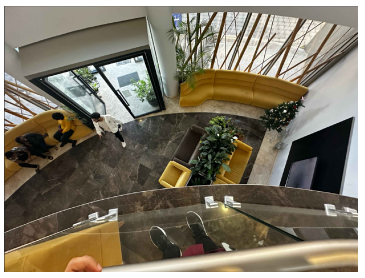
PLANS AND SECTIONS



PHOTOS

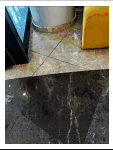






PHYSICAL ENVIRONMENT OF HOSPITALS

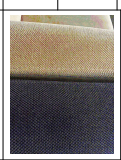
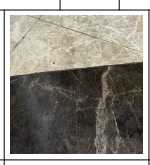
COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓		✓	✓		✓		✓		
CEILING			✓	✓		✓		✓		✓		
FLOOR	✓			✓			✓	✓	✓	✓		
PHOTOS												
COMMENTS	• they used dark and light marble to create a contrast. • the walls and ceiling is gray.											

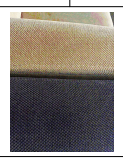
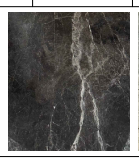
LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING	✓				✓			✓	✓	✓		✓	✓	✗
FLOOR														
PHOTOS														
COMMENTS	• this photo is from the hanged light fixture and it works at night and lights us yellow.			• Good natural lighting positively affects children by improving mood, concentration, and learning. It regulates sleep patterns, supports physical health, and fosters a connection to nature, contributing to their overall well-being and development.										

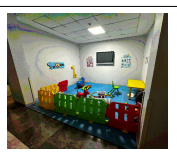
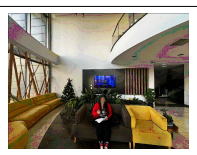
MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING						✓								✓
FLOOR													✓	
PHOTOS														
COMMENTS	• the sofas material is velvet.		• this photo is from the ceiling.		• this photo is from the wall.	• this photo is from the marble flooring.								

TEXTURES

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS											
COMMENTS											

FURNITURE AND FIXTURES

	PHOTOS
	   
COLOUR	The sofas used are yellow and sage green.
MATERIALS	they used bamboo, the sofas are a soft push fabric, and they have fake plants.
SIZE	The size of the chairs is low enough to be used for children easily, but also comfortable enough for the adults users.
MOVABILITY	The sofas aren't moveable, but there is a chairs that are moveable in the waiting aera.
ERGONOMY	The sofas are 40cm high.
OTHER	

4.3.1.5 Elite Research & Surgical Hospital

The children's waiting area at Elite Research & Surgical Hospital is a lively space, meticulously planned to balance both functionality and aesthetics. Covering a generous 52 square meters and boasting a high ceiling of 6 meters, the waiting area ingeniously includes a mezzanine floor, thereby extending the available space. The layout is considerate of the visitors' needs, featuring a cafeteria adjacent to the reception and a dedicated playroom on the opposite side, thus offering a comprehensive environment for visitors (see table 5).

A unique feature that enhances the ambiance is the ceiling light, specifically designed to emit a warm, yellow accent light, adding a subtle glow to the room. The combination of artificial and natural light through the curtain wall results in a dynamic atmosphere.

Located next to the waiting area is the dedicated playroom, fitted with a blue Ethylene-Vinyl Acetate (EVA) flooring for safe play. The playroom is equipped with colourful toys and a television, providing entertainment, and helping to alleviate potential anxieties. The inclusion of seating for parents within the playroom ensures a balance between supervision and independence.

The seating arrangement, characterized by playful yellow and dark brown chairs placed along the curtain wall, creates a visually stimulating environment. A table and stools near the reception area provide a convenient spot for visitors to fill out necessary paperwork. Components of nature are introduced into the space through the use of greenery and bamboo decor on the curtain wall, adding a calming effect. The beige walls, accented with wooden components, create a warm and welcoming atmosphere, providing a soothing environment for young patients. The floor, adorned with two-

toned marble tiles in beige and black, adds a playful touch, while the white ceiling enhances the overall brightness of the space. Studies suggest that child-centric waiting areas promote wellbeing, reducing stress for both children and accompanying parents. As children interact with the surroundings, the waiting area transcends beyond a clinical space, fostering a positive healthcare journey.

Artificial lighting, strategically placed throughout the area, is supplemented by yellow accent lights, contributing to a vibrant atmosphere. The curtain wall allows for ample natural light to fill the space, promoting a connection with the outside world. Despite the many positive aspects of the waiting area at Elite Research & Surgical Hospital, there are certain areas that require careful consideration. The large space, while aesthetically pleasing, may not provide a cozy atmosphere for some visitors. The innovative use of a mezzanine floor could pose difficulties for individuals with mobility issues. The close proximity of the playroom to the waiting area could potentially lead to noise disturbances, affecting the overall peacefulness of the space. Furthermore, the lively colour scheme and playful design may necessitate frequent upkeep to maintain their appeal in a healthcare setting.

From a safety standpoint, the waiting area seems well-planned. The selection of materials, such as the durable yellow and dark brown chairs, indicates a focus on longevity and easy maintenance. However, the location of the playroom needs to be managed carefully to maintain a balance between a lively environment and a serene waiting area. Factors such as noise control, childproofing measures, and regular maintenance checks on playroom equipment are crucial for ensuring the safety and wellbeing of young visitors (see table 5).

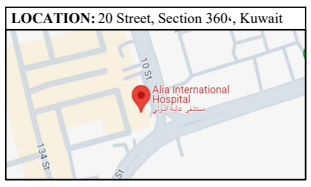
4.3.2 Analysis of Hospitals in Kuwait

In Kuwait, there is an opportunity for children's waiting rooms in hospitals to be specifically designed with a child's needs in mind. This reflects the nation's established position and its capability to engage professional designers. Hospitals in Kuwait cater to a diverse population and aim to create an environment that is both engaging and comforting for children. Just as the waiting rooms could be effectively designed to fulfil their purpose, the nation's economic strategies are directed towards practical and sustainable growth. This parallel, highlights a broader cultural emphasis on quality and a detail-oriented approach in Kuwait.

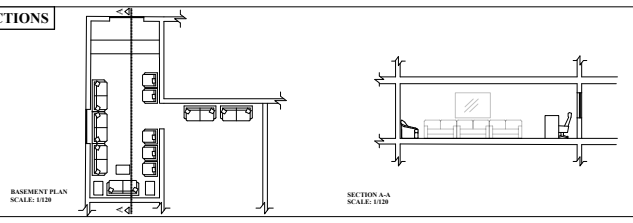
Table 6: Alia International Hospital

NAME: Alia International Hospital

LOCATION: 20 Street, Section 360‹, Kuwait



PLANS AND SECTIONS



PHOTOS

PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓	✓		✓		✓		✓		
CEILING			✓	✓		✓			✓	✓		
FLOOR	✓			✓		✓		✓		✓		
PHOTOS												
COMMENTS										• Utilizing analogous color palettes, where colors sit next to each other on the color wheel, can bring about favorable outcomes in spaces for children. These harmonized color selections establish a visually connected and aesthetically satisfying environment. For instance, merging variations of blue and green or incorporating warm hues such as orange and yellow can evoke feelings of harmony and unity.		

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓		✓			✓	✓			✓		✗
FLOOR														
PHOTOS														
COMMENTS														

PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING						✓								✓
FLOOR													✓	
PHOTOS														
COMMENTS	• Tight and small waiting areas can lead to physical discomfort, heightened anxiety, limited social interaction, challenges in engaging activities, difficulty in distraction, and potential safety concerns for children. Ensuring waiting areas provide sufficient space is essential to create a positive and accommodating waiting experience for children.													

PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL										✓	
CEILING										✓	
FLOOR											✓
PHOTOS											
COMMENTS	• The dimensions of a waiting room play a crucial role in influencing the physical well-being, comfort, social interactions, engagement in learning opportunities, arrangement flexibility, alleviation of crowded sensations, and overall safety and accessibility for children. It is vital to have a waiting area of suitable size to ensure a positive and comprehensive waiting experience for children.										

PHYSICAL ENVIRONMENT OF HOSPITALS

FURNITURE AND FIXTURES

	PHOTOS
	
COLOUR	the color of the chairs are teal.
MATERIALS	the chairs structure are made of steel.
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't moveable.
ERGONOMY	The chairs are 40cm high.
OTHER	

4.3.2.1 Alia International Hospital

Situated just beyond the main entrance, the children's waiting area at Alia International Hospital is a crucial component of the overall healthcare setting. This shared space, which serves both adults and young patients, does not have a specific area designated for children. The reception area, strategically located at the entrance, serves as a welcoming portal to the hospital (see table 6).

The waiting area is furnished with teal chairs on either side, lending a sense of symmetry and order. Some chairs are set against a backdrop of lush greenery, infusing a bit of nature into the environment. A nurse's desk supplements the seating arrangement, reflecting a functional and organized approach to patient care. Two bathrooms are conveniently situated between the waiting areas.

The design incorporates components that inspire tranquillity and a connection with nature. The beige walls, wooden accents extending to the ceiling, and a white ceiling contribute to a harmonious and warm atmosphere. A linear white light fixture brightens the area, providing calming and practical overhead lighting. A large window strategically placed at the front of the waiting area allows for plenty of natural light, enhancing the connection with the outdoors. The hospital's vibrant and eco-friendly design philosophy is evident in this space, fostering an environment that embodies wellness and serenity.

However, certain aspects require attention. The lack of a dedicated space for children could affect their comfort and engagement. The shared waiting area, while practical, may not have the specialized features required for young patients. The addition of greenery is visually pleasing but could be enhanced with more intentional inclusion of

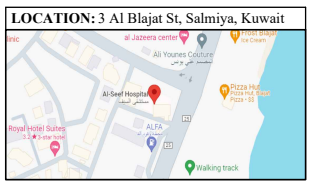
components that engage a child's curiosity. Furthermore, the communal nature of the waiting area could lead to higher noise levels, potentially affecting the overall experience for both adults and children. Addressing these issues with sound insulation and strategic seating arrangements could improve this.

Therefore, the children's waiting area at Alia International Hospital highlights architectural elegance and a commitment to dynamic design. However, to better cater to the unique needs and comfort of young patients, improvements could be made. Incorporating dedicated spaces for children and a more nuanced approach to design components could greatly improve the child-friendliness of this healthcare setting (see table 6).

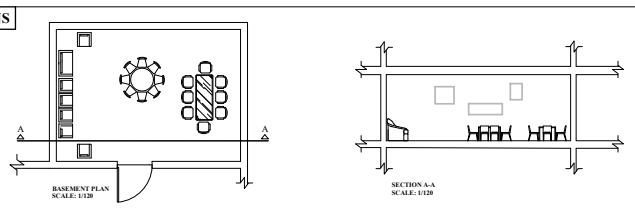
Table 7: Al-Seef Hospital

NAME: Al-Seef Hospital

LOCATION: 3 Al Blajat St, Salmiya, Kuwait



PLANS AND SECTIONS

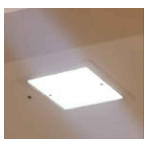
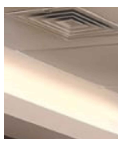
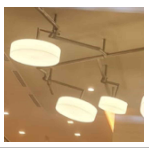


PHOTOS

COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS												
	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓	✓			✓		✓		✓	
CEILING			✓	✓		✓			✓	✓		
FLOOR	✓			✓			✓		✓	✓		
PHOTOS												
COMMENTS	• Bright and vibrant colors, such as cheerful yellows, blues, and greens, can evoke a sense of energy, playfulness, and creativity. These colors contribute to a visually engaging environment, uplifting children's moods and creating a lively atmosphere that helps in alleviating boredom during the wait.									• Soft and calming hues, including pastels and neutral tones, have a soothing effect. These colors create a more relaxed atmosphere, reducing visual stimulation and potentially easing feelings of anxiety or stress in children. Such calming environments contribute to a sense of comfort during the waiting period.		

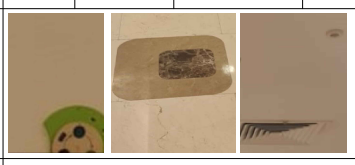
LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS														
	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING	✓				✓			✓	✓	✓		✓	✓	✗
FLOOR														
PHOTOS														
COMMENTS														

MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS															
	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓		✓						
CEILING						✓		✓						✓
FLOOR													✓	
PHOTOS														
COMMENTS	• Designing spaces around engaging themes, such as nature or storytelling, provides a backdrop for shared interests. Thematic environments spark conversations and collaborative play centered around common themes, fostering a sense of camaraderie among children. • Integrating playful elements, such as colorful and interactive installations, stimulates curiosity and draws children towards shared zones. These purposefully designed areas serve as focal points for social interaction, allowing children to engage in cooperative play and imaginative activities.														

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS											
	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS											
COMMENTS	• Promoting Interaction via Specifically Designed Spaces for Children: Designing environments that encourage interaction among children is a deliberate strategy in environmental planning, providing multiple benefits for their social, emotional, and cognitive growth. Tailored spaces aimed at fostering engagement and collaboration play a vital role in nurturing positive relationships among young individuals.							• Thoughtfully arranged seating areas, whether in clusters or around communal tables, encourage casual interactions. Comfortable seating promotes a relaxed atmosphere where children feel at ease engaging with their peers.			

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	
	PHOTOS
	
COLOUR	there are different colored furniture, the ones made for the children got multiple colors, the furniture for the adults got brown chairs and dark brown for the side tables.
MATERIALS	the furniture are mostly made of wood and leather for the covering of the chair, the children furniture are made of plastic.
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't moveable except the chairs for the children.
ERGONOMY	The chairs are 40cm high and 50cm wide.
OTHER	

4.3.2.2 Al-Seef Hospital

At Al-Seef Hospital, the waiting area is a dual-room sanctuary, meticulously designed to cater to both children and adults. A partition wall, featuring two windows (2 meters by 1.5 meters each), serves as a conduit of visual connection, enabling adults to monitor their children, thereby instilling a sense of safety and reassurance (see table 7).

The adult section exudes an air of sophistication with brown leather chairs set against a darker brown carpet. Wall paintings enhance the aesthetic appeal, and the architectural separation ensures a dedicated, comfortable waiting space. Two bathrooms are strategically placed to meet the practical needs of both groups.

Conversely, the children's room is a burst of lively colours. Saturated hues—red, blue, green, and yellow—characterize the polypropylene chairs and tables, fostering an environment of fun and energy. The tables, particularly a round, segmented one with flexible adaptability, and a long rectangular table that can accommodate up to 10 kids, underscore both versatility and communal interaction. The same brown chairs as in the adult section on one side unify the design. The off-white/beige ceiling and walls provide a neutral backdrop, allowing colourful decals to animate the space.

The separation embodies a considerate approach to address the distinct needs of each group. The windows in the wall, while facilitating supervision, also connect the two spaces. The colour choices and adaptable furniture in the children's area resonate with the principles of flexibility and engagement.

However, the area of lighting invites architectural critique. Despite the use of white and concealed LED lights, the overall lighting is inadequate, resulting in a somewhat dim environment. The lack of natural light exacerbates this issue, affecting the overall ambiance and comfort of both adults and children.

Significantly, issues arise concerning child safety and well-being. While the design is certainly engaging, the dim lighting could present navigation challenges for children. Enhancing the lighting and exploring child-friendly lighting solutions could improve the overall safety and well-being of young patients.

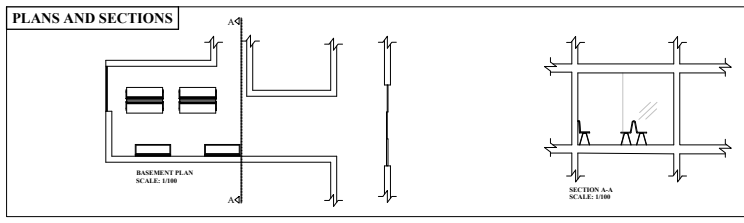
Moreover, Al-Seef Hospital's waiting area demonstrates a laudable effort through thoughtful architectural and design choices. Addressing the lighting concerns and possibly finding ways to introduce more natural light could greatly improve the functionality and overall experience. Furthermore, maintaining optimal child safety through well-lit spaces should be a priority in the ongoing development of this healthcare setting (see table 7).

Table 8: Taiba Hospital

NAME: Taiba Hospital

LOCATION: 5 Rd, Sabah Al Salem, Kuwait

PLANS AND SECTIONS



PHOTOS

PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL		✓		✓			✓		✓	✓	✓	✓
CEILING			✓	✓		✓			✓	✓		
FLOOR		✓		✓		✓			✓	✓		
PHOTOS												
COMMENTS	• Maximizing illumination in areas designed for children fosters a positive elevation in mood, improves visual comfort and safety, stimulates exploration, aids in learning, boosts alertness, establishes a welcoming ambiance, and assists in daily routines. This purposeful attention to lighting plays a crucial role in creating a balanced and nurturing setting for the growth and development of children.											

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING		✓			✓			✓	✓			✓	✓	✗
FLOOR														
PHOTOS	 													
COMMENTS														

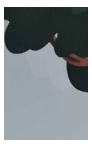
PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								✓
CEILING						✓								
FLOOR												✓		
PHOTOS														
COMMENTS	• The size of a waiting room significantly impacts children's physical well-being, sense of comfort, social interactions, engagement in learning opportunities, flexibility in arrangement, mitigation of overcrowded sensations, and overall safety and accessibility. Ensuring an appropriately sized waiting area is essential for creating a positive and holistic waiting experience for children.													

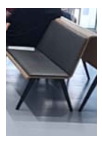
PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓	✓	
PHOTOS	 										
COMMENTS	• Colorful murals serve as vibrant and engaging design elements in children's spaces, offering a range of benefits for their development. These large-scale artworks often depict playful scenes, imaginative characters, or educational themes, creating a visually stimulating environment.										

PHYSICAL ENVIRONMENT OF HOSPITALS

FURNITURE AND FIXTURES

	PHOTOS
	 
COLOUR	the color of the chairs are black for the steel legs of the chair, woof for the structure and dark gray for the seating cushioning
MATERIALS	the furniture are mostly made of wood, with steel and cotton cushioning.
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't moveable.
ERGONOMY	The chairs are 40cm high.
OTHER	

4.3.2.3 Taiba Hospital

At Taiba Hospital, the waiting area on the 3rd floor is designed with both functionality and the comfort of young patients in mind. The room, measuring 4.5 meters by 3.5 meters with a 2.5 meters entrance, offers a cozy setting (see table 8).

The seating arrangement, featuring dark grey and light brown wooden chairs, presents a layout challenge. The chairs face each other with only a meter of space in between, which may not provide adequate comfort for both adults and children. The room includes a small TV for entertainment, and a conveniently located bathroom serves the needs of the waiting area's occupants.

From a child's viewpoint, the visually appealing chairs might seem somewhat daunting, particularly with the face-to-face setup. The TV provides a diversion, but the close proximity of the chairs could make the room feel somewhat confined, potentially affecting the sense of personal space. The waiting area strives to create a child-friendly environment. The walls, decorated with children-themed wallpaper in predominantly light blue and beige hues, establish a joyful atmosphere. The light blue vinyl flooring matches the colour scheme, creating a harmonious and calming ambiance. The neutral white ceiling enhances the overall brightness of the room.

While the artificial lighting is not plentiful, it effectively lights up the space. A large floor-to-ceiling window, the room's standout feature, floods the area with natural light. This architectural component is a significant advantage, fostering a connection with the outdoors and imparting a feeling of spaciousness.

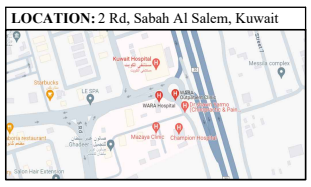
However, the layout of the chairs, especially the limited space between them, invites criticism. Personal experience suggests that the chair design, despite being visually intriguing, lacks ergonomic comfort, making prolonged seating less comfortable. This setup could lead to discomfort for both adults and children, potentially affecting the overall waiting area experience. A more spacious and flexible seating arrangement could greatly improve the comfort of the space.

The waiting area at Taiba Hospital paints a mixed picture. While the child-friendly aesthetics and the generous natural light are praiseworthy, the seating layout raises comfort concerns. Addressing the spatial arrangement of chairs and ensuring child safety measures will be crucial in enhancing the overall experience in this healthcare setting (see table 8).

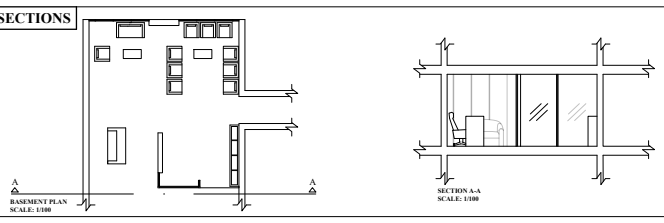
Table 9: Wara Hospital

NAME: Wara Hospital

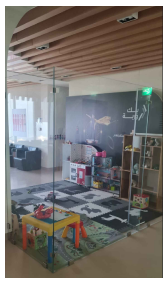
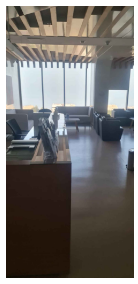
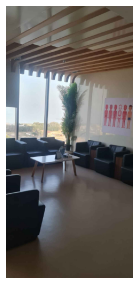
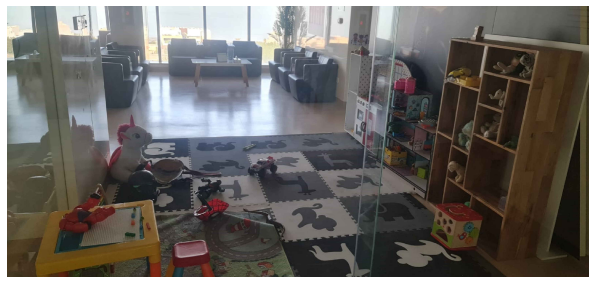
LOCATION: 2 Rd, Sabah Al Salem, Kuwait



PLANS AND SECTIONS



PHOTOS

PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓	✓		✓			✓	✓		
CEILING	✓			✓			✓		✓	✓		
FLOOR	✓				✓	✓			✓	✓		✓
PHOTOS												
COMMENTS	• Warm and neutral tones in children's environments create a comforting and adaptable atmosphere, promoting positive emotions, visual comfort, and age-appropriate design. These colors offer a versatile backdrop that supports concentration, enhances learning environments, and accommodates changing preferences as children grow.									• Applying analogous color schemes, where colors are adjacent on the color wheel, can have positive effects on children's environments. These harmonious color combinations create a visually cohesive and aesthetically pleasing atmosphere. For example, combining shades of blue and green or warm tones like orange and yellow can evoke a sense of balance and unity.		

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING		✓	✓		✓			✓	✓		✓	✓		✗
FLOOR														
PHOTOS	 													
COMMENTS	• Integrating large windows and natural light into spaces designed for children is a deliberate choice with multifaceted benefits. This thoughtful approach enhances both the physcal environment and the overall well-being of children in various aspects, This intentional design not only fosters a vibrant and inviting atmosphere but also contributes to a nurturing and enriching environment, promoting optimal growth and development for children.													

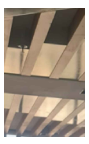
PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING			✓			✓								✓
FLOOR											✓	✓		
PHOTOS														
COMMENTS	• Creating spaces specifically for children that allow a degree of independence while maintaining visibility for parents is a thoughtful approach in environmental design. These spaces offer a balance between fostering a child's autonomy and ensuring a sense of security through parental oversight.													

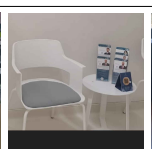
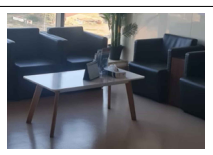
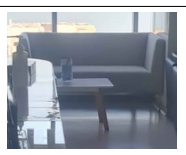
PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING					✓				✓	✓	
FLOOR			✓					✓	✓	✓	
PHOTOS	    										
COMMENTS											

PHYSICAL ENVIRONMENT OF HOSPITALS

FURNITURE AND FIXTURES

	PHOTOS
	   
COLOUR	there are multiple chairs types and they got different colors, some are dark blue, white, and beige sofa.
MATERIALS	There is plastic chairs, and there are sofas that are made of wood and polyester fabric.
SIZE	The sizes of the seating fixtures vary as there are multiple choices for the users to pick from, all of them are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The sofas aren't moveable, but there are moveable plastic chairs.
ERGONOMY	The chairs are 40cm high.
OTHER	

4.3.2.4 Wara Hospital

On the 11th floor of Wara Hospital, a meticulously designed waiting area unfolds, covering an area of 6 meters by 5 meters. This space is a testament to thoughtful design, aiming to meet the unique needs and emotions of its youngest visitors. Upon entering, one is greeted by a reception desk on the left and, interestingly, a small 2.3-meter by 2.7-meter room for children on the right. As one moves past the reception, the waiting room invites you in, accompanied by dark navy blue and dark brown side tables, offering a dynamic and engaging environment (see table 9).

From a child's viewpoint, the waiting area is a realm of fascination. The glossy beige walls create a warm and inviting atmosphere, while the darker beige vinyl flooring adds a sense of coziness. Wooden liner components on the white ceiling lend a touch of elegance, contributing to the overall aesthetic appeal. However, personal experience suggests that the artificial lighting, while efficient, could be warmer to enhance the welcoming ambiance.

The waiting area cleverly incorporates floor-to-ceiling windows that bathe the space in natural light, forging a connection with the outside world. This architectural feature not only brightens the area but also uplifts the mood, making the waiting room feel less confined.

Importantly, the children's waiting area stands out as a sanctuary of joy and independence. The glass walls allow parents to monitor their children while giving the children a sense of freedom. The flooring, soft interlocking foam bedroom flooring tiles in white, grey, and navy blue with playful animal designs, offers a fun and safe

surface for children to explore. However, an observation notes that the colour contrast in the flooring, while playful, might not be ideal for easy cleaning and maintenance.

Child safety and well-being are of utmost importance in this space. The thoughtful inclusion of a bathroom and the transparent walls in the children's waiting area underscore a commitment to creating a secure environment. However, the durability and hygiene aspects of the colourful foam flooring and toys warrant consideration, ensuring it remains a clean and safe space for the little ones. In the room dedicated to children, an array of colourful toys, teddy bears, and puzzles create an atmosphere of joy and diversion. The blue wallpaper adorned with cheerful characters adds a whimsical touch, transforming the space into a haven of imagination.

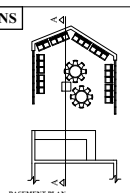
Wara Hospital's 11th-floor waiting area presents a delightful mix of functional design and architectural allure. While its enchanting qualities are celebrated, considerations for a more welcoming artificial lighting ambiance and the practicality of the foam flooring could enhance the overall experience. Striking a balance between aesthetic appeal and easy maintenance will be key to maintaining the joyful and secure atmosphere for children in this healthcare haven (see table 9).

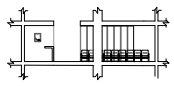
Table 10: New Mowasat Hospital

NAME: New Mowasat Hospital

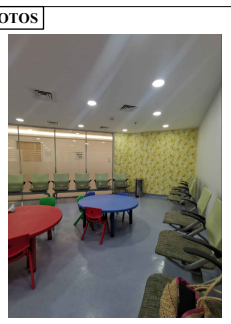
LOCATION: Salem Al Mubarak St, Kuwait

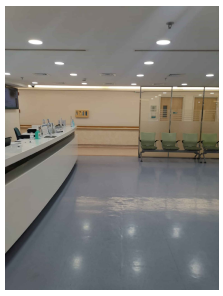
PLANS AND SECTIONS

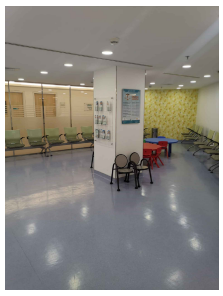




PHOTOS







COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓		✓	✓			✓		✓		✓	
CEILING			✓	✓		✓			✓	✓		
FLOOR		✓		✓		✓			✓	✓		
PHOTOS												
COMMENTS				• Vibrant ceiling colors can evoke a sense of energy and creativity in children, boosting their mood and adding visual interest to the space. Conversely, employing subdued colors, such as neutral tones or pastels, on walls and floors aims to establish a serene and calming environment, with the intention of minimizing visual stimulation and alleviating feelings of anxiety or stress.						

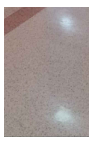
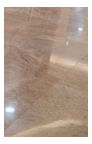
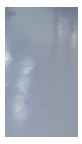
LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING		✓			✓			✓	✓			✓		✗
FLOOR														
PHOTOS														
COMMENTS	• Encouraging Interaction Through Designed Spaces for Children: Creating spaces that facilitate interaction among children is a strategic approach in environmental design, offering numerous advantages for their social, emotional, and cognitive development. Tailored spaces that promote engagement and collaboration contribute significantly to fostering positive relationships among young individuals.													

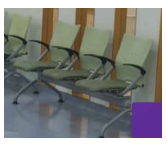
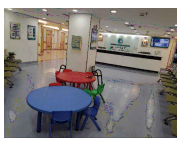
MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING								✓						✓
FLOOR									✓					
PHOTOS														
COMMENTS	• Use of Open Spaces for Children: Open spaces play a crucial role in children's environments, offering a range of benefits that contribute to their physical, emotional, and social development. These expansive areas, whether indoors or outdoors, provide opportunities for various activities and interactions that positively impact children's well-being.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL		✓							✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS											
COMMENTS	• Use of Colorful Wallpaper for Children: Colorful wallpaper serves as an impactful design element in children's spaces, contributing to a visually stimulating and engaging environment. The diverse range of patterns and hues offers various benefits for children's development and well-being.										

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	PHOTOS
	   
COLOUR	the chairs are got multiple colors and they are (light green, black and silver)
MATERIALS	the furniture are mostly made of plastic and steel.
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't moveable.
ERGONOMY	The chairs are 35cm high and 50cm wide.
OTHER	

4.3.2.5 New Mowasat Hospital

The New Mowasat Hospital's waiting area is thoughtfully designed to cater to the needs and interests of its young visitors. The room, measuring 7.5 meters by 5.5 meters, features two curtain walls and two openings, contributing to a spacious and well-ventilated environment. The seating includes green and black burlap plastic chairs with green backing, arranged along the walls for efficient use of space. Additional chairs, painted in vibrant shades of blue, red, and green, serve as playful components for children. The walls are decorated with light yellow wallpaper featuring cartoon characters, creating an engaging visual experience. The floor is covered with light blue vinyl, and the ceiling is painted white, maintaining a clean and bright atmosphere. The area is well lit with sufficient artificial lighting (see table 10).

The waiting area's layout promotes openness and easy accessibility. The curtain walls and openings invite natural light, enhancing the overall visual appeal. The selection of seating, including the colourful chairs for children, adds a lively touch to the room. The light-yellow wallpaper with cartoon characters offers a thematic and visually stimulating aspect. The light blue vinyl flooring harmonizes with the overall colour palette, and the white ceiling provides a neutral contrast. The strategic placement of artificial lighting ensures adequate illumination throughout the space.

Despite the engaging design, there are areas that could be improved. The open layout, while inviting, might compromise privacy for families. The colourful chairs, although playful, could be enhanced with ergonomic features for comfort during long waits. The dependence on artificial lighting could be balanced with more natural light for a soothing ambiance. The choice of light-yellow wallpaper, while visually pleasing, might need to be evaluated for durability in a high-traffic healthcare setting.

The waiting area seems to prioritize children's safety, with no obvious hazards. The use of burlap plastic chairs and specially designed children's furniture underscores this commitment. However, the open layout might present supervision challenges, suggesting the need for subtle safety features like childproof outlets and rounded corners. Regular upkeep of play equipment and furniture is essential to maintain a safe and clean environment for young visitors.

In addition to these points, it might be beneficial to consider incorporating interactive components or educational materials into the design. This could provide children with engaging activities while they wait, potentially reducing anxiety and improving their overall experience. Furthermore, the use of sustainable and non-toxic materials could be explored to ensure the health and wellbeing of the children (see table 10).

4.4 Finding and Discussions

In this section, the findings from this research are discussed, focusing on the comparison of the design of children's hospital waiting areas in Northern Cyprus and Kuwait. The observational data is interpreted, the impact of each country's regulations on design is assessed, and insights are drawn from the comparative analysis. This research identifies best practices and potential areas for improvement and understands how these findings could influence the design of paediatric healthcare facilities worldwide. The goal of this research is to use these insights to improve the experiences and outcomes for paediatric patients and their families.

4.4.1 Generalising Hospital Waiting Areas in Northern Cyprus

The children's waiting areas in the hospitals of Northern Cyprus, while functional, offer a variety of experiences for young patients. These hospitals, including Yaşam Hospital, Cyprus Central Hospital, Elite Research & Surgical Hospital, Medicalport

Tunççevik Hospital, and Etik Hospital, each have their unique layout and ambiance. (See figure 22) as it evaluates five different hospitals in Northern Cyprus based on five criteria: Colour, Lighting, Materials, Textures, and Furniture & Fixtures.

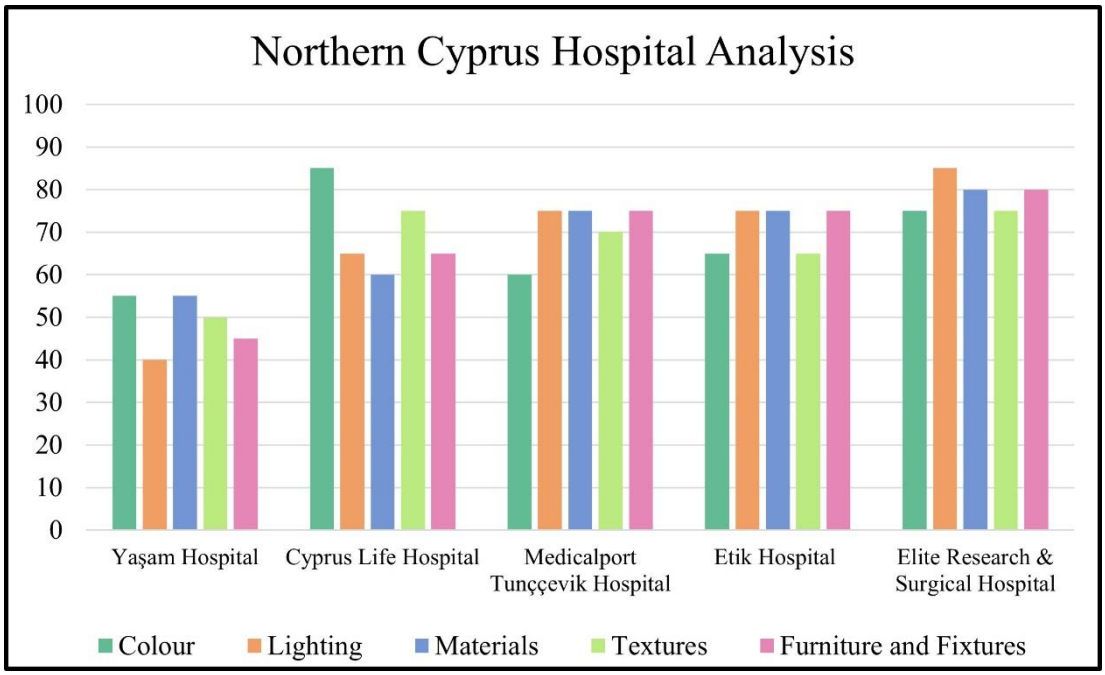


Figure 22: Northern Cyprus Hospital Analysis

The design of these waiting areas, which form a crucial part of the physical environment of hospitals, often includes spacious rooms, vibrant seating arrangements, and a balance between natural and artificial lighting. Some hospitals also feature innovative design components such as mezzanine floors and dedicated playrooms. However, the use of vibrant colours and bright lighting may need moderation to prevent sensory overload, and the secluded environments in some waiting areas could impact the overall well-being of children and their parents.

Despite the many positive aspects of these waiting areas, there are areas that require careful consideration. The large spaces, while aesthetically pleasing, may not provide a cozy atmosphere for some visitors. The close proximity of playrooms to waiting

areas could potentially lead to noise disturbances. Furthermore, certain aspects of the design, such as the rough fabric on chairs and the choice of dark colours, may present challenges in terms of maintenance and sensory overload for some children.

From a safety standpoint, these hospitals seem to have well-planned waiting areas, with durable materials indicating a focus on longevity and easy maintenance. However, the location of playrooms needs to be managed carefully to maintain a balance between a lively environment and a serene waiting area. Noise control, childproofing measures, and regular maintenance checks on playroom equipment are crucial for ensuring the safety and wellbeing of young visitors.

In summary, the hospitals in Northern Cyprus demonstrate the importance of thoughtful design choices in creating welcoming and engaging environments in children's hospital waiting areas. While each has its strengths, there are areas for improvement to enhance the well-being of paediatric patients and their families. The findings underscore the need for a balance between functionality and a child-friendly atmosphere in the design of such spaces. However, certain aspects require further consideration to enhance the overall experience for young patients and their families. These insights can guide future design decisions and contribute to the enhancement of paediatric healthcare environments in Northern Cyprus.

4.4.2 Generalising Hospital Waiting Areas in Kuwait

Hospitals in Kuwait, as a collective unit, demonstrate a strong commitment to providing a comfortable and engaging environment for their patients, particularly the young ones. (See figure 23) as it evaluates five different hospitals in Kuwait based on five criteria: Colour, Lighting, Materials, Textures, and Furniture & Fixtures. This

commitment is evident in the design of their waiting areas, which are often the first point of contact for patients and their families.

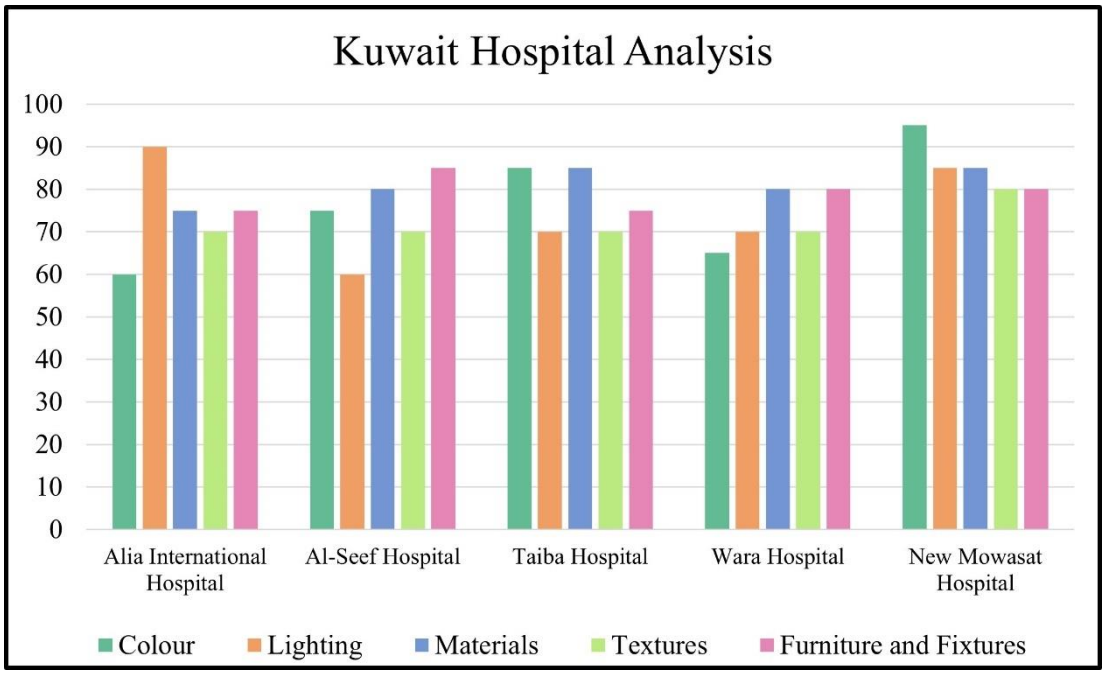


Figure 23: Kuwait Hospital Analysis

These hospitals, including Alia International Hospital, Al-Seef Hospital, Taiba Hospital, Wara Hospital, and New Mowasat Hospital, have made significant efforts to create waiting areas that cater to the needs of young patients. They incorporate components such as natural light, vibrant colours, and playful furniture to create a welcoming atmosphere. Some hospitals have even dedicated separate rooms for children, allowing them to feel more at ease.

However, these hospitals also recognize the importance of continuous improvement. They understand that certain aspects, such as seating arrangements, lighting, and the inclusion of dedicated spaces for children, can significantly impact a child's comfort and overall experience. Therefore, they are open to making necessary adjustments in these areas.

Moreover, these hospitals prioritize children's safety. From the choice of furniture to the layout of the waiting areas, every detail is considered with the safety of young patients in mind. Yet, they acknowledge that maintaining a safe environment requires regular evaluation and updates.

In conclusion, as a united front, hospitals in Kuwait are making commendable efforts to ensure their waiting areas are not only functional but also child friendly. They understand that a positive experience in these spaces can make a significant difference in the overall healthcare journey of their young patients. They continue to strive for improvements, keeping the unique needs and comfort of children at the forefront of their design considerations. This collective effort contributes to the high standard of healthcare settings in Kuwait. However, there are still areas for improvement, particularly in terms of lighting, seating arrangements, and the inclusion of dedicated spaces for children. Incorporating these changes could greatly enhance the overall experience for young patients and their families. This ongoing commitment to improvement is what sets the healthcare system in Kuwait apart. It is a testament to their dedication to providing the best possible care for all patients, especially the young ones.

4.4.3 Comparative Analysis of Northern Cyprus and Kuwait's Hospitals

The design of waiting areas in children's hospitals is a critical aspect that can significantly influence the overall experience of paediatric patients and their families. The findings from this research (see figure 24), represented by the green line for Northern Cyprus and the orange line for Kuwait, highlight several key components that should be considered to ensure the success of these spaces. It is a visual representation of the priority distribution of various design components (colour,

lighting, materials, textures, furniture, and fixtures) in children's hospital waiting areas in Northern Cyprus and Kuwait.

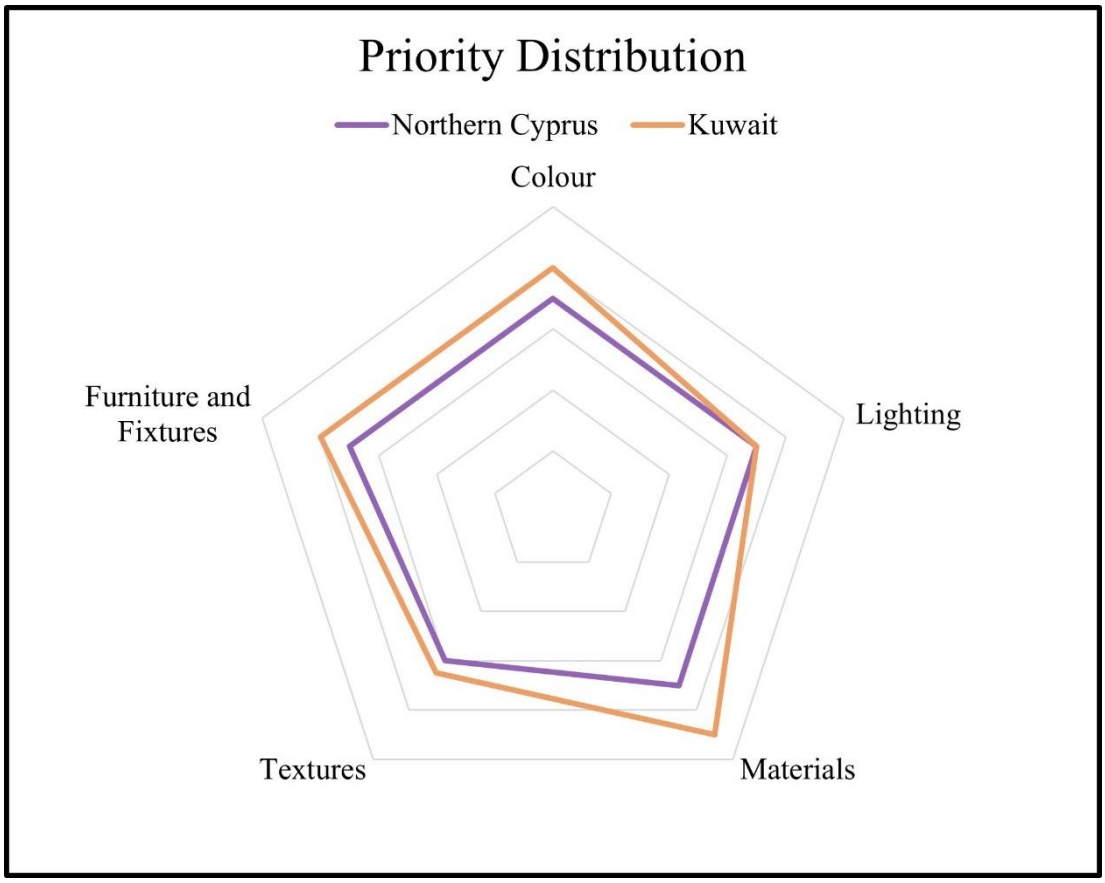


Figure 24: Priority Distribution

The waiting areas in both Northern Cyprus and Kuwait hospitals are designed with vibrant colours. Kuwait seems to place more emphasis on creating a visually stimulating environment for children with a higher preference for colour. This can help to keep children engaged and distracted from any anxieties related to their hospital visit. In contrast, Northern Cyprus's waiting area also features vibrant colours, but the lack of a dedicated space for children could affect their engagement. This could potentially make children feel less comfortable and more anxious.

lighting plays a significant role in shaping a child's sense of belonging in a hospital's waiting area. Both Northern Cyprus and Kuwait recognize the importance of good lighting in creating a comfortable environment, which is a crucial aspect of making children feel at ease and welcomed. The use of artificial lighting in both countries, while practical, could be balanced with more natural light for a soothing ambiance. Natural light has been shown to have a positive impact on well-being and can make a space feel more inviting and less clinical.

This balance between artificial and natural light can help create an environment where children feel more at home, enhancing their sense of belonging. Adequate lighting is essential not only for practical reasons but also for creating a warm and welcoming atmosphere. A well-lit space can help to alleviate any feelings of apprehension or fear that children might have about being in a hospital. When children see that they can interact with their surroundings clearly and safely, it can foster a sense of familiarity and security, further enhancing their sense of belonging.

In terms of materials used in the waiting areas, both countries prioritize the use of high-quality materials. Kuwait uses a variety of materials to create a visually appealing and comfortable environment. On the other hand, Northern Cyprus's waiting area features durable chairs and colourful Linoleum flooring, indicating a focus on longevity and safety. However, the chair design in both countries, despite being visually intriguing, lacks ergonomic comfort, making prolonged seating less comfortable for children. This could potentially make children feel less comfortable and more restless being in this physical environment.

The texture of the materials used in the waiting areas is indeed an important aspect to consider. While both Northern Cyprus and Kuwait have successfully incorporated textures into their designs, there's room for improvement, especially in the children's waiting areas. They stimulate tactile experiences, which are crucial for a child's cognitive and physical development. Different textures can spark curiosity and encourage children to explore their environment, thereby enhancing their overall experience. In the case of Kuwait, the waiting area seems to place more emphasis on textures, which might make it more tactilely interesting for children. However, further consideration could be given to incorporating a wider variety of textures specifically in the children's waiting area. This could provide a more engaging and stimulating environment for children. Similarly, in Northern Cyprus, while textures have been considered in the design of the waiting area, more focus could be placed on the children's waiting area. Incorporating different textures that are safe and appealing to children could enhance their sensory experience and make the waiting time more enjoyable.

Lastly, the furniture in the waiting areas of both countries is visually appealing but might lack ergonomic comfort, making prolonged seating less comfortable for children. Both countries use a face-to-face seating setup in some cases in, which might seem somewhat daunting for children. Kuwait's waiting area features playful chairs for children, but the close proximity of the chairs could make the room feel somewhat confined. This could potentially affect children's sense of personal space and comfort.

In short, while both Northern Cyprus and Kuwait have strengths in materials and similar priorities in lighting, there are differences in the other aspects of the physical environment. These differences highlight the unique approaches each country takes in

designing children's waiting areas in hospitals. It is important to note that these are averages and individual hospitals within each country may vary. By addressing these areas, such as improving the seating arrangements and balancing the use of artificial and natural light, the hospitals can enhance the overall experience for children and make their visit to the hospital a more comfortable and less stressful experience.

Table of Findings

Components of Interior Design	Country	
	Northern Cyprus	Kuwait
Colour	Uses many colours but lacks dedicated spaces for children, which could affect their comfort and engagement.	Emphasized creating a visually stimulating environment with a higher preference for colour, helping to engage children and distract them from anxieties.
Lighting	Recognizes the importance of good lighting. The use of artificial lighting could be balanced more, more natural light needed for a soothing ambiance.	Values natural lighting and could benefit from balancing artificial and natural light, artificial lighting should be considered more.
Materials	Prioritizes high-quality materials. Features durable chairs and colourful Linoleum flooring, indicating a focus on longevity and safety. More variety could be used.	Uses a variety of materials to create a visually appealing and comfortable environment. Thin materials used which could tear easily, thicker materials should be used.
Textures	Textures have been considered in the design, but more focus could be placed on the children's waiting area. Different textures that are safe and appealing to children could enhance their sensory experience.	Places emphasis on textures, making it more tactilely interesting for children. However, further consideration could be given to incorporating a wider variety of textures in the children's waiting area.
Furniture and Fixtures	Furniture is visually appealing but might lack ergonomic comfort. The face-to-face seating setup might seem daunting for children. Fixtures are interesting but not designed with children in mind.	Furniture, especially playful chairs for children, is visually appealing but might lack ergonomic comfort. The close proximity of the chairs could make the room feel somewhat confined, potentially affecting children's sense of personal space and comfort. Fixtures used do not consider children.

Figure 25: Table of Findings

4.5 Recommendations

In an ideal world, all aspects of a children's waiting area in a hospital - colour, lighting, materials, textures, furniture, and fixtures - would be maximized to create the perfect environment. However, in reality, this is not always feasible due to various constraints such as budget, space, and resources. (See figure 25) as it is a visual representation of a realistic recommendation of various design components (colour, lighting, materials, textures, furniture, and fixtures) in children's hospital waiting areas Compared to the hospitals in Northern Cyprus and Kuwait.

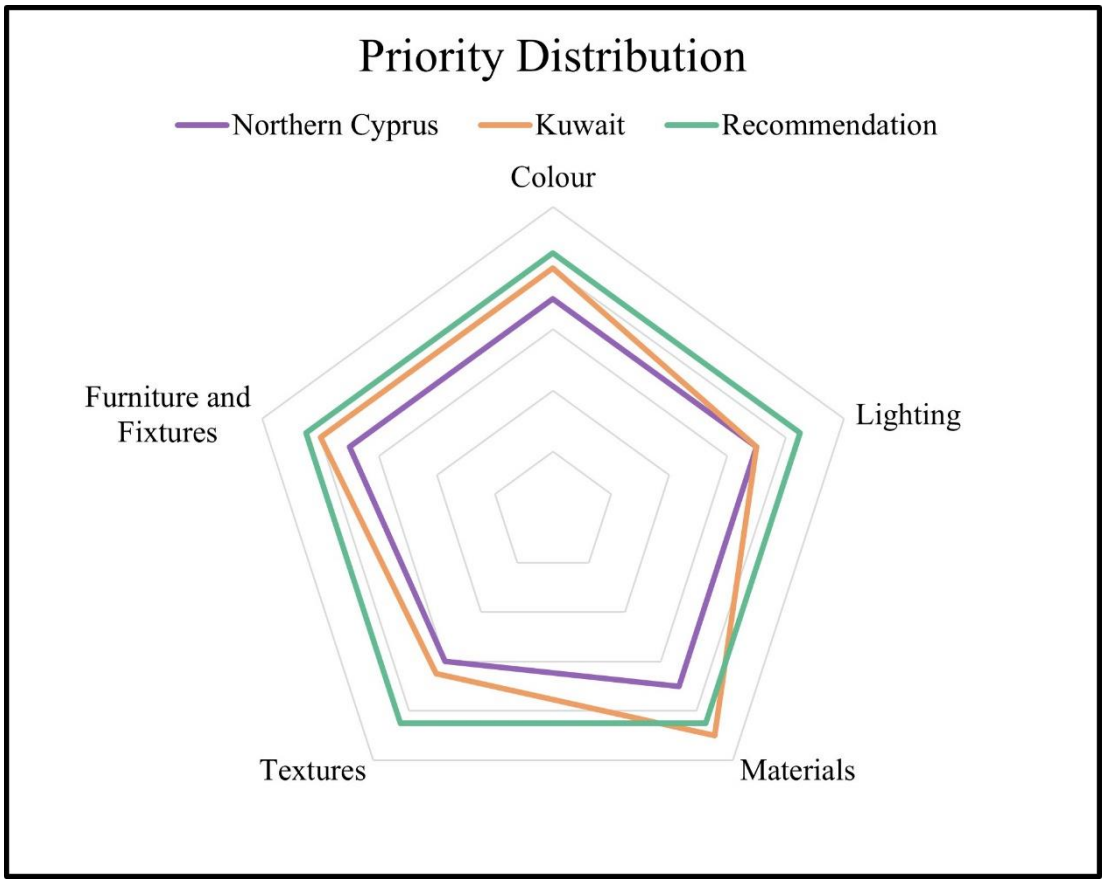


Figure 26: Priority Distribution Recommendation

This research recommends a balanced approach when designing a children's waiting area. Instead of focusing on maximizing one or two components, equal consideration should be given to all components - colour, lighting, materials, textures, furniture, and

fixtures. This approach ensures that no single component outshines the others, but instead, they work together to create a cohesive and pleasant space.

Creating a space where children feel safe is of utmost importance. A well-designed waiting area can foster a sense of belonging and wellbeing among children. It can make their visit to the hospital a more comfortable and less stressful experience. Therefore, it is crucial to design the waiting area in a way that caters to the unique needs and preferences of children.

Chapter 5

CONCLUSION

5.1 Conclusion of the Research

In conclusion, the design of children's waiting areas in hospitals plays a crucial role in shaping a child's experience during their visit, significantly impacting their sense of belonging and overall wellbeing. Hospital waiting areas are not just spaces where people wait, they are environments that can either contribute to or alleviate the stress and anxiety associated with hospital visits. Children's unique cognitive, emotional, and physical development shapes their perceptions of interior spaces differently from adults. Therefore, interior design for children should consider the psychological impact of colours, lighting, materials, textures, and furniture and fixtures on children's emotional and cognitive states.

Colour can significantly influence a child's mood and behaviour, thereby affecting their sense of belonging. Vibrant and playful colours can create a visually stimulating environment, keeping children engaged and distracted from any anxieties related to their hospital visit. Lighting, both artificial and natural, is another crucial aspect of the physical environment of hospitals. Good lighting creates a comfortable environment and a warm and welcoming atmosphere that can help to alleviate any feelings of apprehension or fear that children might have about being in a hospital, enhancing their sense of wellbeing.

The choice of materials used in the waiting areas can impact the children's comfort and safety, contributing to their sense of belonging. High-quality, durable, and safe materials should be prioritized. The texture of these materials can also contribute to a child's sensory development, stimulating tactile experiences which are crucial for a child's cognitive and physical development.

The layout and furniture in the waiting areas should be designed keeping in mind the comfort and safety of children. It's important that the furniture is child-sized to ensure it is accessible and comfortable for children of all ages. Ergonomic comfort is essential, especially considering that children might have to sit for prolonged periods. The design should provide a multisensory experience that promotes relaxation and alleviates anxiety while also being efficient and easy to navigate. By choosing furniture that is durable, safe, comfortable, and appropriately sized for children, it is possible to create a space that promotes healing, wellbeing, and a strong sense of belonging.

The importance of child-oriented designs for healthcare spaces is highlighted by Salama (2013) and is based on the unique needs and preferences of children. Children have a distinct way of perceiving and interpreting the world, which may differ from those of adults, and they are more sensitive to the emotional and social cues of the environment. Therefore, the design of children's hospitals should consider the child's age, gender, and individual characteristics, as well as the child's stage of development and learning needs.

Overall, designing child-friendly waiting rooms in hospitals is essential to ensure that children feel a sense of belonging and are supported in their wellbeing during their

hospital experience. This research is important as it can inform the design of children's hospitals and waiting rooms and contribute to the improvement of the healthcare experience for children and their families. A balanced design approach that considers both physical and psychological needs, as well as cultural and socio-economic factors, is necessary to create a comfortable and welcoming atmosphere. By selecting colours, lighting, materials, and textures that are appropriate for the age and developmental stage of the children, and choosing furniture that is durable, safe, and comfortable, it is possible to create a space that promotes healing, wellbeing, and a strong sense of belonging in the physical environment of hospitals. Additionally, the layout of the waiting room should be efficient, easy to navigate, and promote circulation to avoid congestion, and the design should provide opportunities for children to feel a sense of control and autonomy within their environment, further enhancing their sense of belonging and wellbeing.

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URL 3: https://pcwww.liv.ac.uk/~sophiew/color.htm

URL 4: https://www.archdaily.com/635225/ob-kindergarten-and-nursery-hibinosekkei-youji-no-shiro

URL 5: https://www.archdaily.com/483228/kalorias-children-s-space-estudio-amatam

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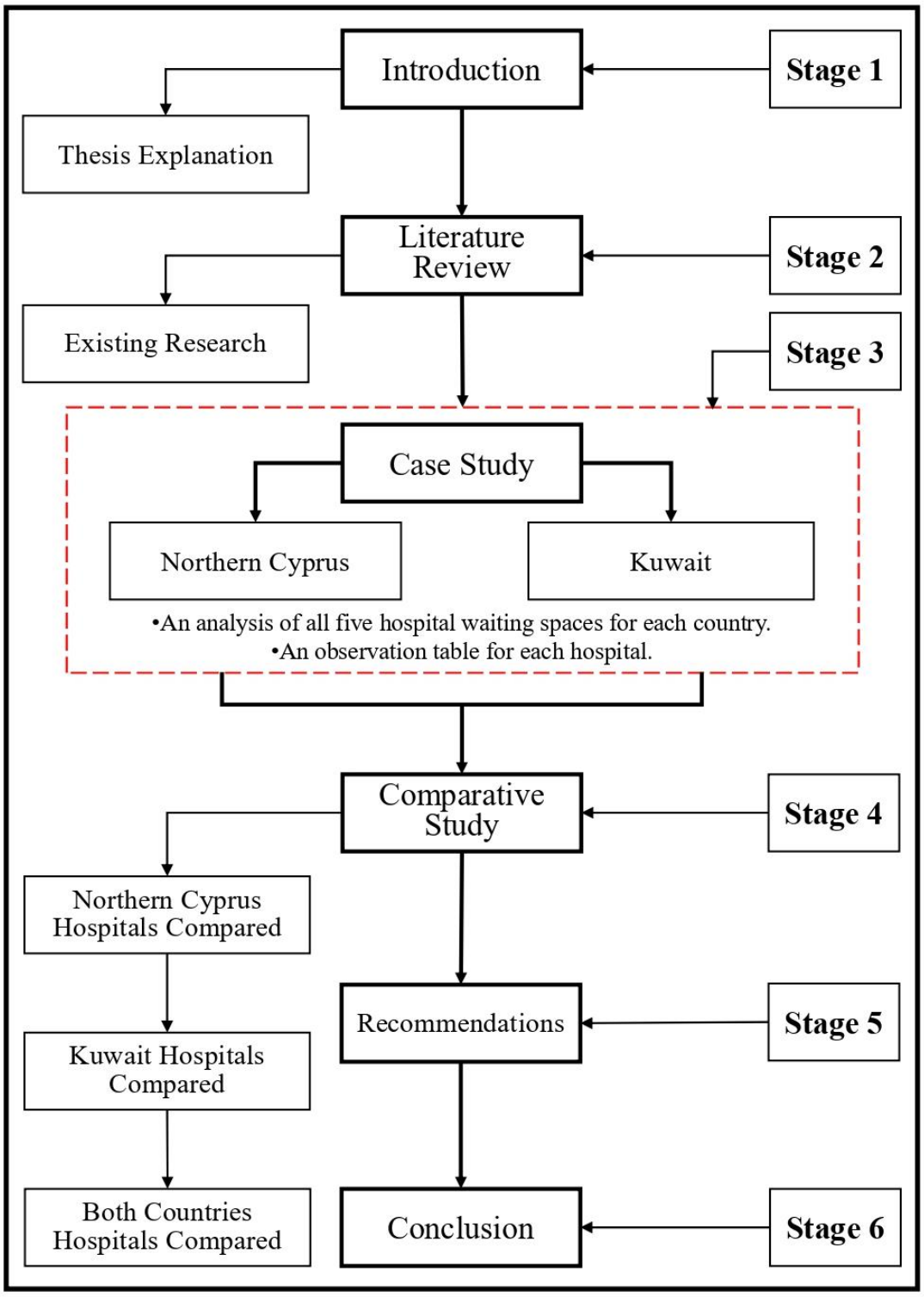
APPENDICES

APPENDIX A: Structure of the Thesis



APPENDIX B: Permission Letter

Doğu Akdeniz Üniversitesi
Eastern Mediterranean University
"Uluslararası Kariyer İçin"
"For Your International Career"
İç Mimarlık Bölümü / Department of Interior Architecture
Mimarlık Fakültesi / Faculty of Architecture

15.04.2023

Sn. Doktor/Yetkili Kişi

Doğu Akdeniz Üniversitesi, Mimarlık Fakültesi, İç Mimarlık Bölümü'nde Yüksek Lisans eğitimini sürdürmekte olan **21506902** okul numaralı öğrencimiz **Christine BAOUASSI** ***'Investigation of Color, Light and Material Use in Pediatric Clinic "Waiting" Spaces - Çocuk Kliniği "Bekleme" Mekanlarında Renk, Işık ve Malzeme Kullanımlarının İncelenmesi'*** isimli tezi kapsamında çalışmalarını sürdürmektedir.

Öğrencimizin, Yüksek Lisans tezinin gelişimi ve doğru sonuçları alabilmesi için Kliniğinizin ***bekleme*** salonunda birtakım analizler yapması gerekmektedir. Bu analizler, fotoğraflama ve ölçü alma şeklinde olacaktır.

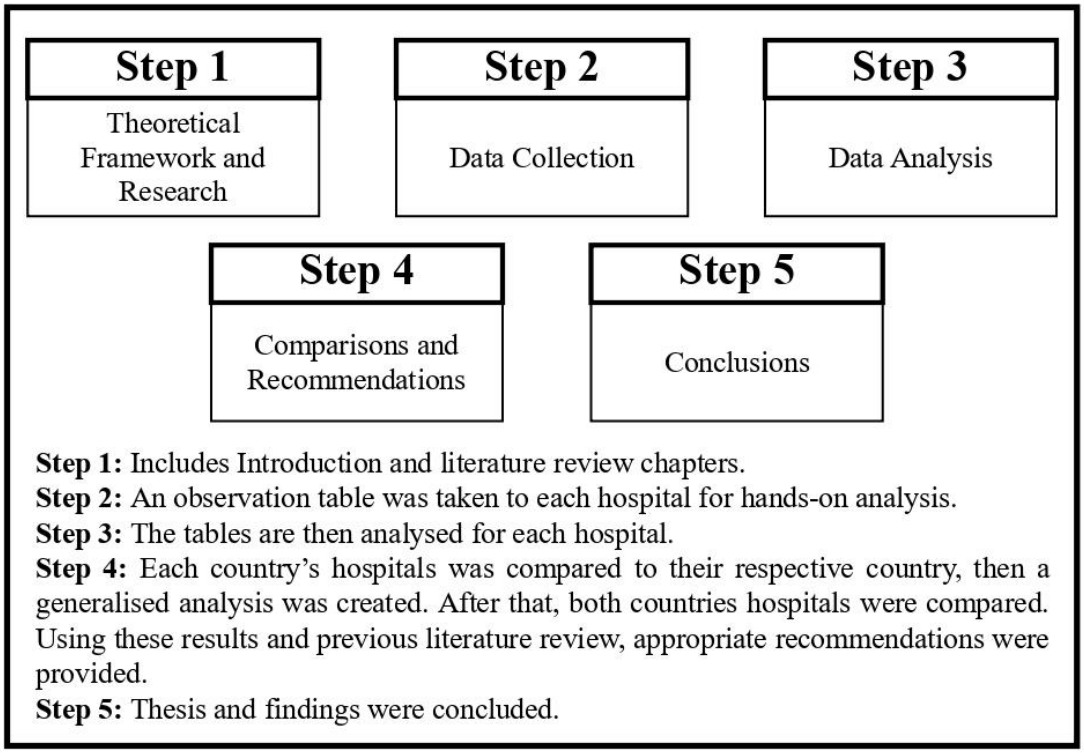
Bu paralellikte, kliniğinizin bekleme alanlarının kullanılmasına izin vermeniz bizler için oldukça önem taşımaktadır.

Öğrencimizi kabulünüz ile hem bilime hem de Kıbrıs özelinde tüm hem sağlık sektörünün hem de içmimarlık alanının gelişimine katkı koyacağınız için sizlere şimdiden teşekkür eder, işlerinizde kolaylıklar ve başarılar dilerim.

Yrd.Doç.Dr. Ahenk Yılgın Damgacı
Bölüm Başkan Yardımcısı
(Tez Danışmanı)

Doğu Akdeniz Üniversitesi
Mimarlık Fakültesi, İç Mimarlık Bölümü
Gazimağusa – Kuzey Kıbrıs
Ofis tel: 0392 630 12 41

APPENDIX C: Research Method of Thesis



Step 1: Includes Introduction and literature review chapters.
Step 2: An observation table was taken to each hospital for hands-on analysis.
Step 3: The tables are then analysed for each hospital.
Step 4: Each country's hospitals was compared to their respective country, then a generalised analysis was created. After that, both countries hospitals were compared. Using these results and previous literature review, appropriate recommendations were provided.
Step 5: Thesis and findings were concluded.

APPENDIX D: List of Accepted Hospitals

List of Hospitals in Northern Cyprus

City/Town	Hospital Name	Chosen	Reason for Rejection
GAZIMAĞUSA	Kunter Trust Hospital		No Children Section
	Cyprus Central Hospital	✓	-
	Yaşam Hospital	✓	-
LEFKOŞA	Cyprus Life Hospital		No Children Section
	Özel Başkent Hastanesi		No Response
	Etik Hastanesi	✓	-
	British IVF Hospital		No Response
	Elite Hospital	✓	-
GIRNE	Kamiloğlu Hospital		No Children Section
	Medicalport Tunççevik Hospital	✓	-
	Private Kyrenia Hospital		No Response
	Kolan British Hospital Kyrenia		Closed Down

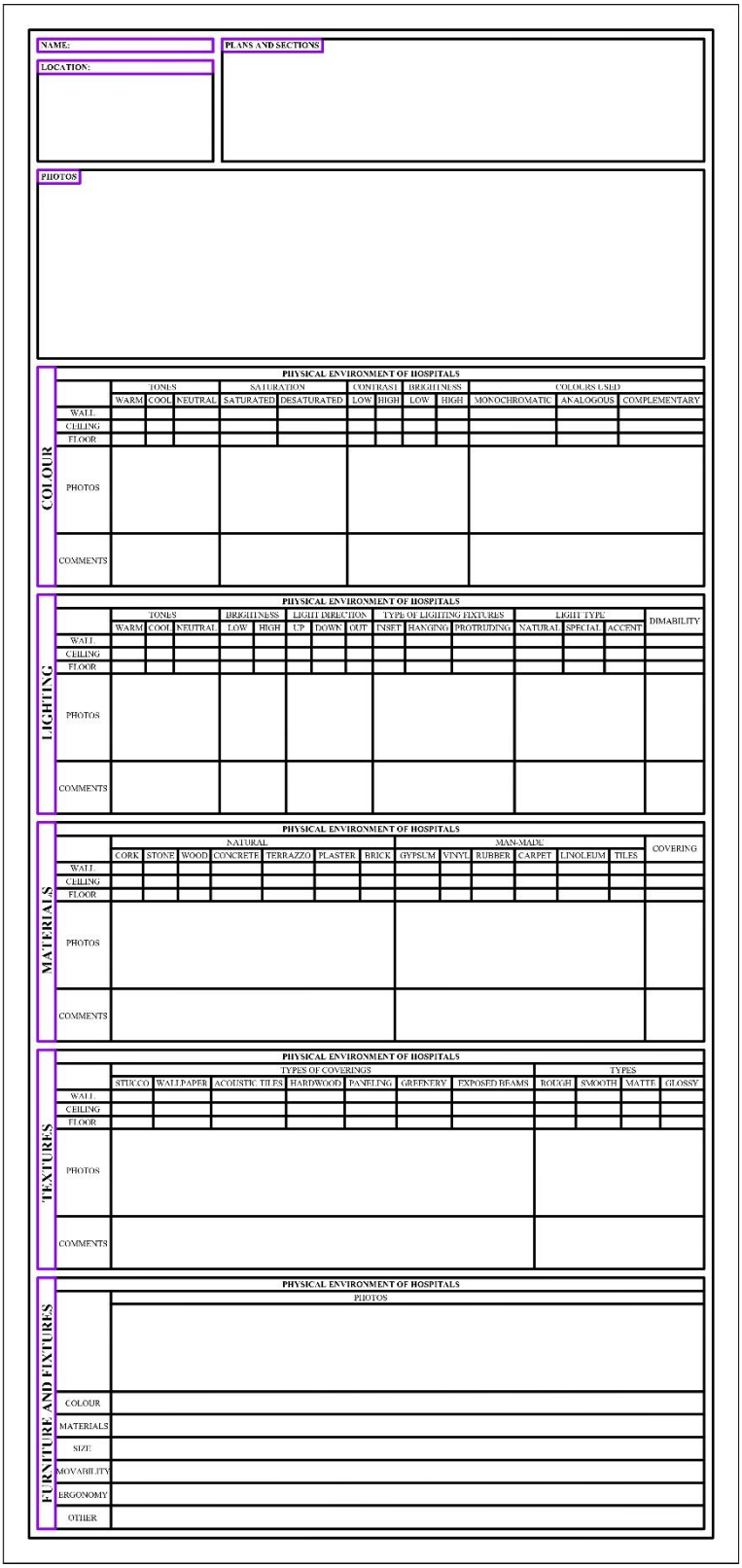
Hospitals in Northern Cyprus

List of Hospitals in Kuwait

City/Town	Hospital Name	Chosen	Reason for Rejection
SALMIYA	International Hospital		No Cameras Allowed
	Al-Seef Hospital	✓	-
	Applo Hospital		No Cameras Allowed
	New Mowasat Hospital	✓	-
SABAH AL-SALEM	Kuwait Hospital		No Cameras Allowed
	Wara Hospital	✓	-
	Taiba Hospital	✓	-
AL-MAHBOULA	Al Salam Al Ahmadi Hospital		No Cameras Allowed
	Alia International Hospital	✓	-

Hospitals in Kuwait

APPENDIX E: Analysis Table



NAME:

LOCATION:

PLANS AND SECTIONS

PHOTOS

PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TONES			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	MONOCHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL												
CEILING												
FLOOR												
PHOTOS												
COMMENTS												

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TONES			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE			DIMABILITY
	WARM	COOL	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	SPECIAL	ACCENT	
WALL															
CEILING															
FLOOR															
PHOTOS															
COMMENTS															

PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL														
CEILING														
FLOOR														
PHOTOS														
COMMENTS														

PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

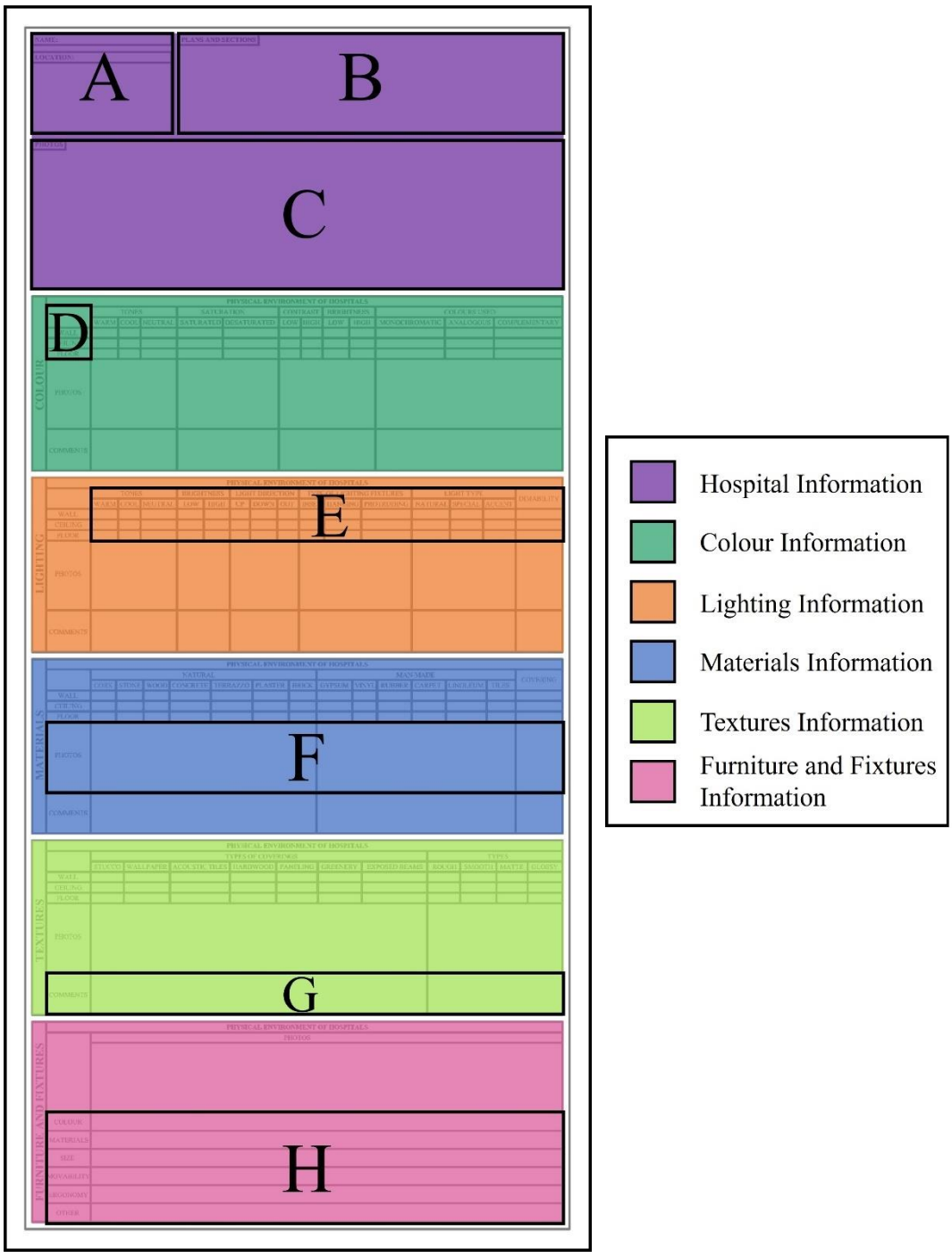
	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL											
CEILING											
FLOOR											
PHOTOS											
COMMENTS											

PHYSICAL ENVIRONMENT OF HOSPITALS

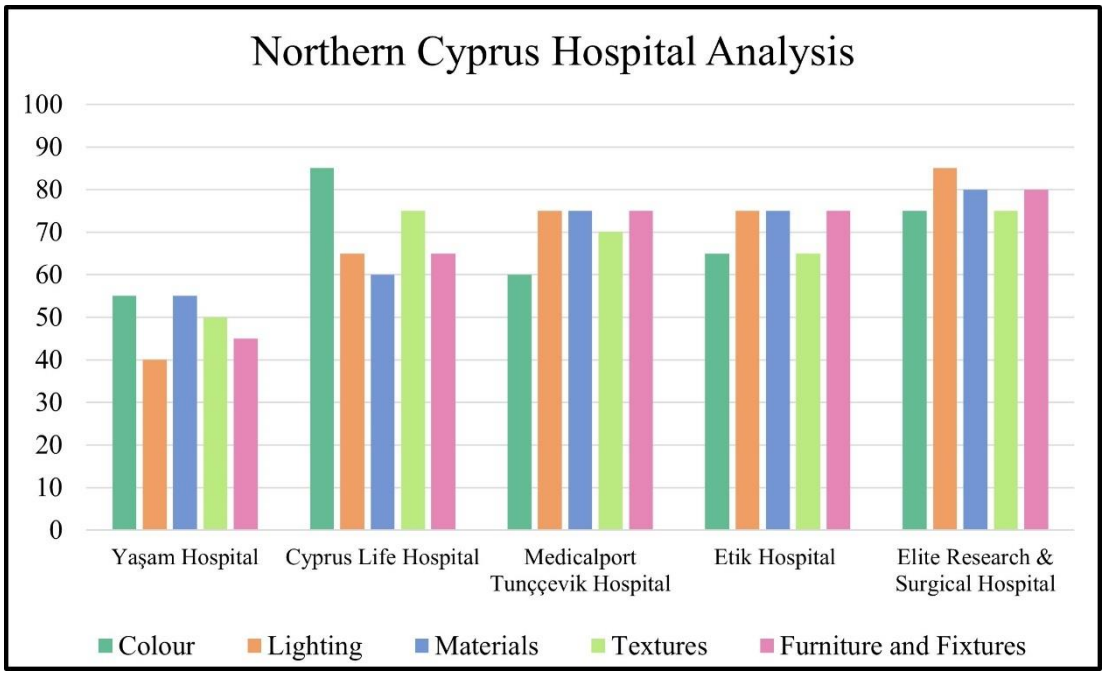
FURNITURE AND FIXTURES

	PHOTOS
COLOUR	
MATERIALS	
SIZE	
MOVABILITY	
ERGONOMY	
OTHER	

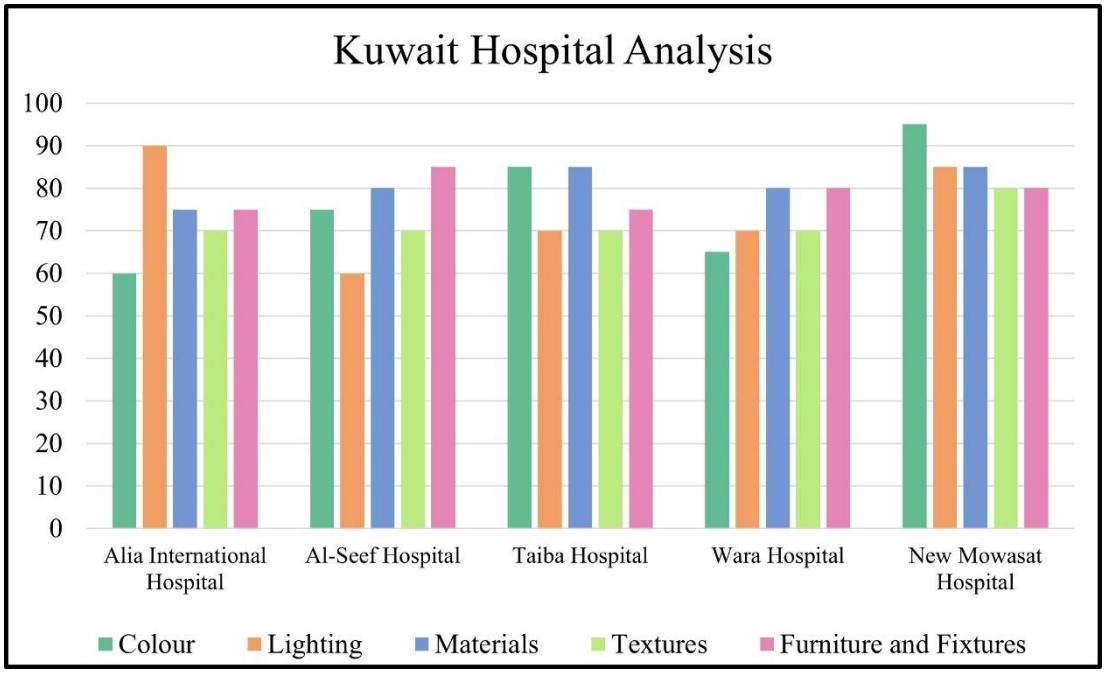
APPENDIX F: Analysis Table Explanation



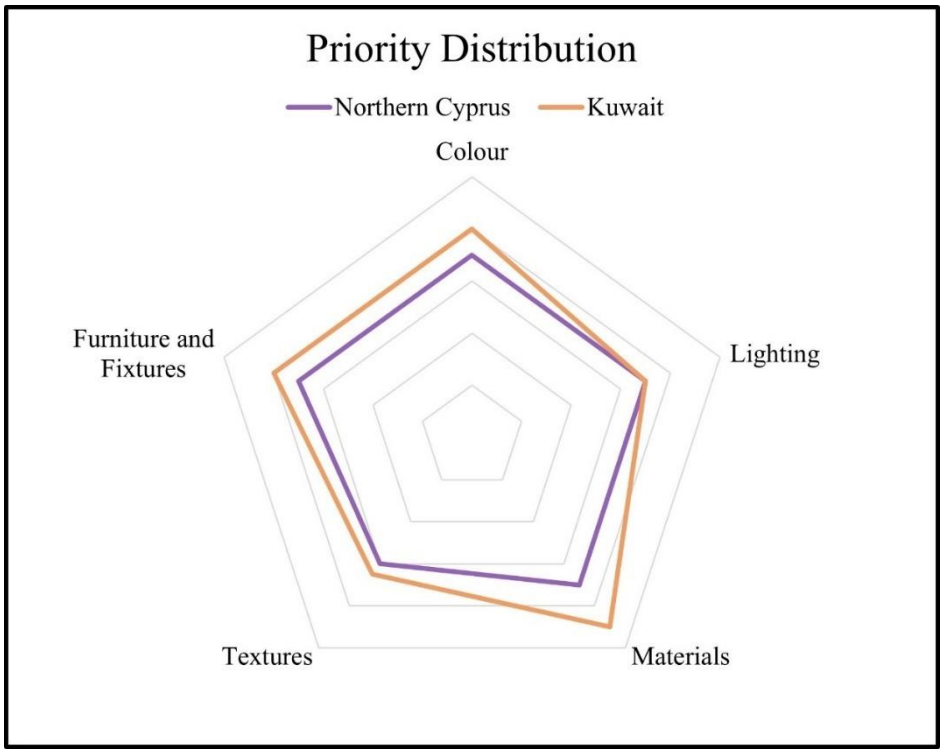
APPENDIX G: Research Statistics



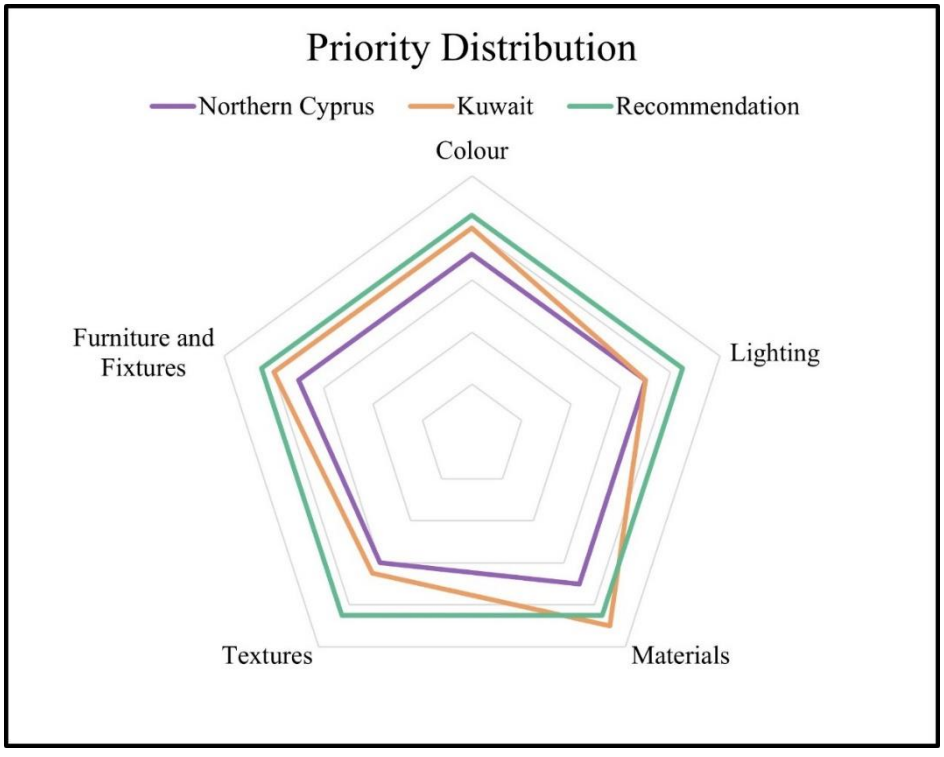
Comparative Statistics



Comparative Statistics



Comparative Statistics



Comparative Statistics

APPENDIX H: Table of Findings

Table of Findings

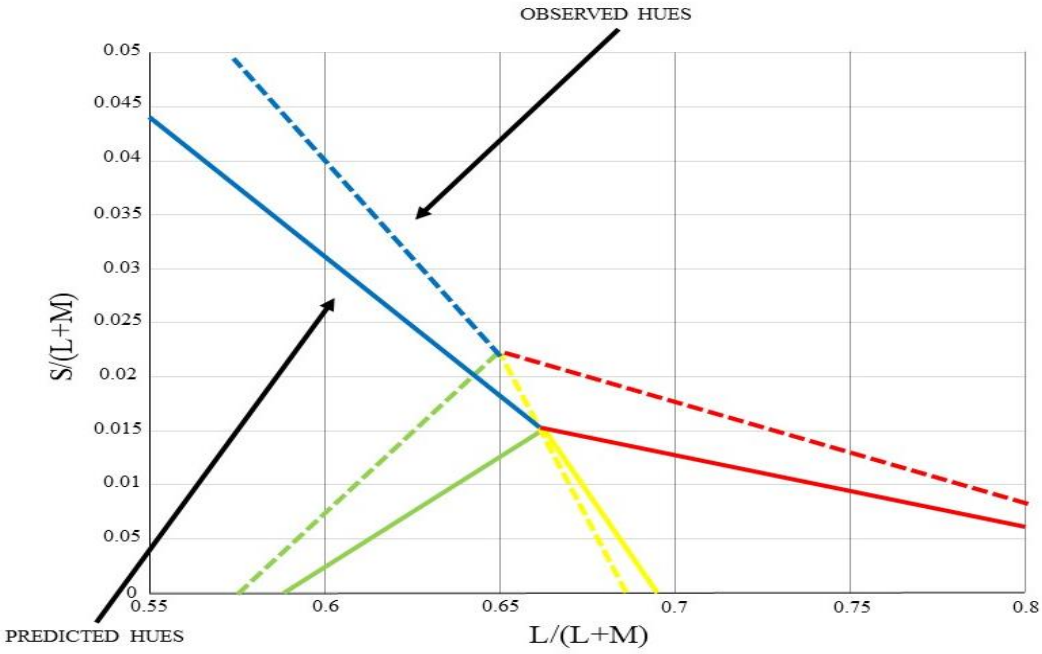
Components of Interior Design	Country	
	Northern Cyprus	Kuwait
Colour	Uses many colours but lacks dedicated spaces for children, which could affect their comfort and engagement.	Emphasized creating a visually stimulating environment with a higher preference for colour, helping to engage children and distract them from anxieties.
Lighting	Recognizes the importance of good lighting. The use of artificial lighting could be balanced more, more natural light needed for a soothing ambiance.	Values natural lighting and could benefit from balancing artificial and natural light, artificial lighting should be considered more.
Materials	Prioritizes high-quality materials. Features durable chairs and colourful Linoleum flooring, indicating a focus on longevity and safety. More variety could be used.	Uses a variety of materials to create a visually appealing and comfortable environment. Thin materials used which could tear easily, thicker materials should be used.
Textures	Textures have been considered in the design, but more focus could be placed on the children's waiting area. Different textures that are safe and appealing to children could enhance their sensory experience.	Places emphasis on textures, making it more tactilely interesting for children. However, further consideration could be given to incorporating a wider variety of textures in the children's waiting area.
Furniture and Fixtures	Furniture is visually appealing but might lack ergonomic comfort. The face-to-face seating setup might seem daunting for children. Fixtures are interesting but not designed with children in mind.	Furniture, especially playful chairs for children, is visually appealing but might lack ergonomic comfort. The close proximity of the chairs could make the room feel somewhat confined, potentially affecting children's sense of personal space and comfort. Fixtures used do not consider children.

Figure 25: Table of Findings

APPENDIX I: Figures

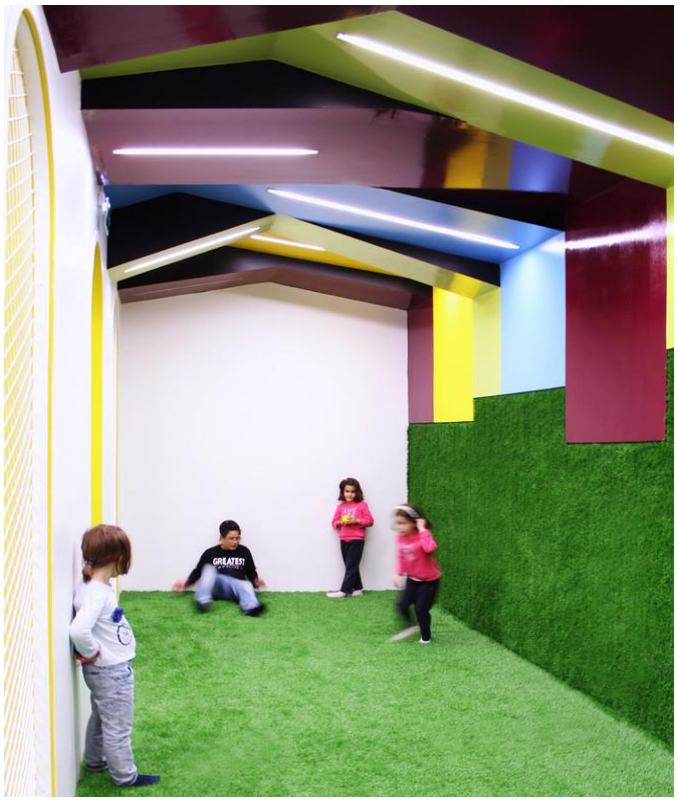
Assemble's Brutalist Playground at RIBA (URL 1)

Lego Play Pond / HAO DesignCircular (URL 2)



Color vision across the life space: perception & brain imaging (URL 3)

OB Kindergarten and Nursery / HIBINOSEKKEI + Youji no Shiro (URL 4)



Kalorias - Children's Space / Estúdio AMATAM (URL 5)

Avenue Green Sheshan in Shanghai / ELTO Consultancy (URL 6)

WeGrow / Bjarke Ingels Group (URL 7)

NUBO Kindergarten / PAL Design (URL 8)

Lucile Packard children’s hospital Stanford (URL 9)

SoftScape Crescent Seating Set, 7 Piece. (URL 10)

Maple Street School Preschool / Barker Associates Architecture Office + 4Mativ Design Studio (URL 11)

Renown’s Children’s Emergency Waiting Room in Reno NV (URL 12)

Montessori Hands-On Observation Area, Australia - Dimensional Murals (URL 13)

ETKHO Hospital Engineering (URL 14)

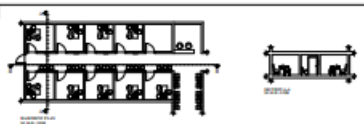
APPENDIX J: Observation Tables

Table 1: Yaşam Hospital

NAME: Yaşam Hospital

LOCATION: Klinikler Sk. Gazimağusa 9945

PLANS AND SECTIONS



PHOTOS

COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓				✓	✓			✓		✓	
CEILING			✓	✓		✓		✓			✓	
FLOOR	✓			✓	✓		✓		✓			✓
PHOTOS												
COMMENTS	• Warm colors such as light beige used for walls and doors as well as door frames in coffee color to emphasize. • White painted ceiling and white floor tiling. • Geometric patterns on floor in dark maroon color.			• All colors used are desaturated which creates an entrancy and uncomfortable feeling in kids.		• It is bright however not enough to light up the whole room and this problem creates corners covered in shadow and eventually, creating an uncomfortable space for kids.				• Even though the dominant colors used are in beige tones, there are also browns and maroons(very few) which make the overall color palette analogous and complementary.		

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓	✓				✓	✓				✓	✕
FLOOR														
PHOTOS														
COMMENTS	• Using neutral color lighting for general and task lightings to create a more comfortable space for kids.			• This specific waiting area has a lower brightness than the outside adult waiting room.		• Inset spotlights are used as the lighting is direct on the waiting area.								• Dim-able lighting systems used in ceilings for easy control over the area's atmosphere

MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING						✓		✓						✓
FLOOR													✓	
PHOTOS														
COMMENTS	• Plaster used for walls are paint coated as finishing materials. • Main constructed ceilings are covered with a plaster layer as finishing material.							• Waiting corridors have gypsum suspended ceilings. • Ceramic floor tiling supported with patterns for easier circulation.						• Suspended ceilings used in most of the basement floor excluding the beginning of the childrens' waiting area.

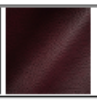
TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

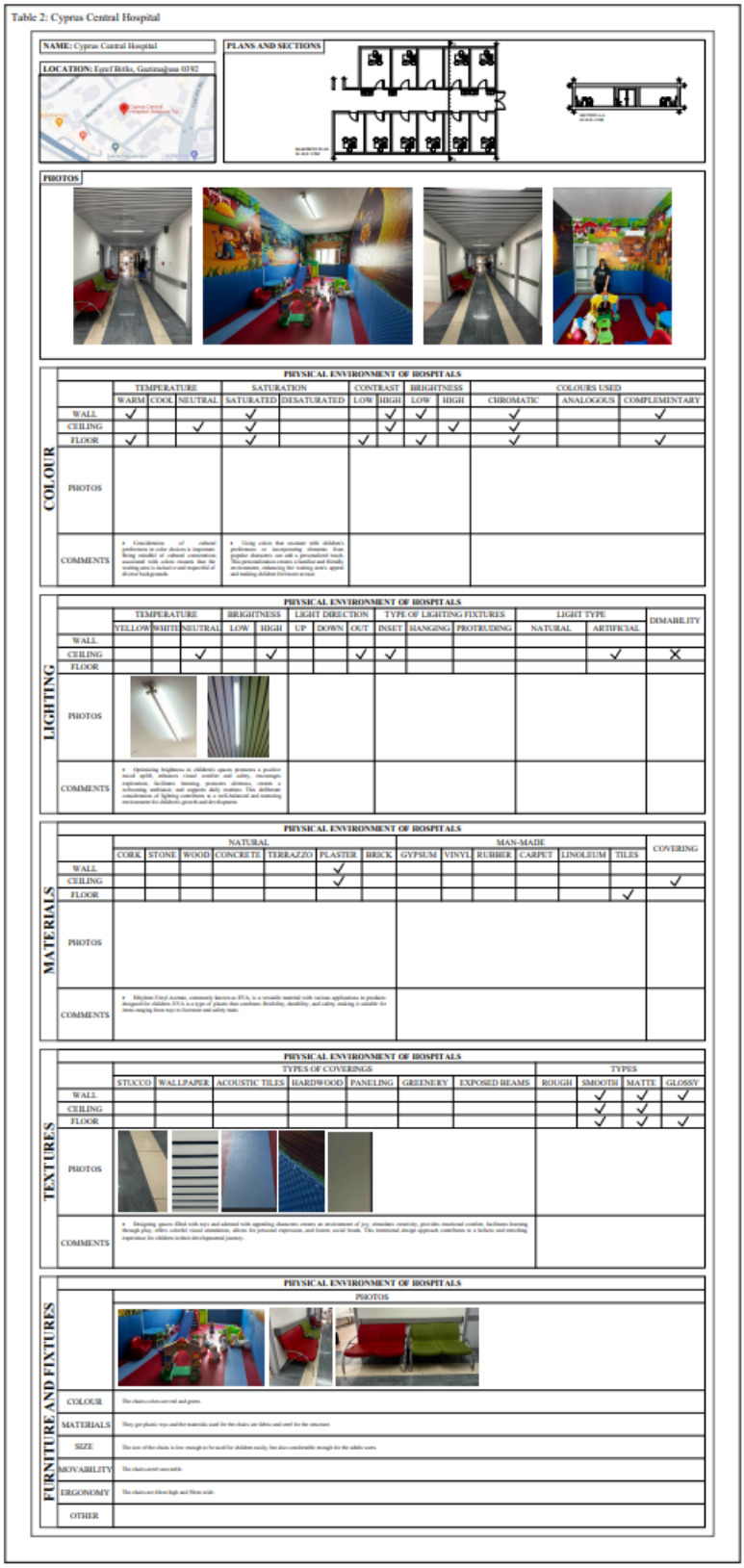
	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS											
COMMENTS											

FURNITURE AND FIXTURES

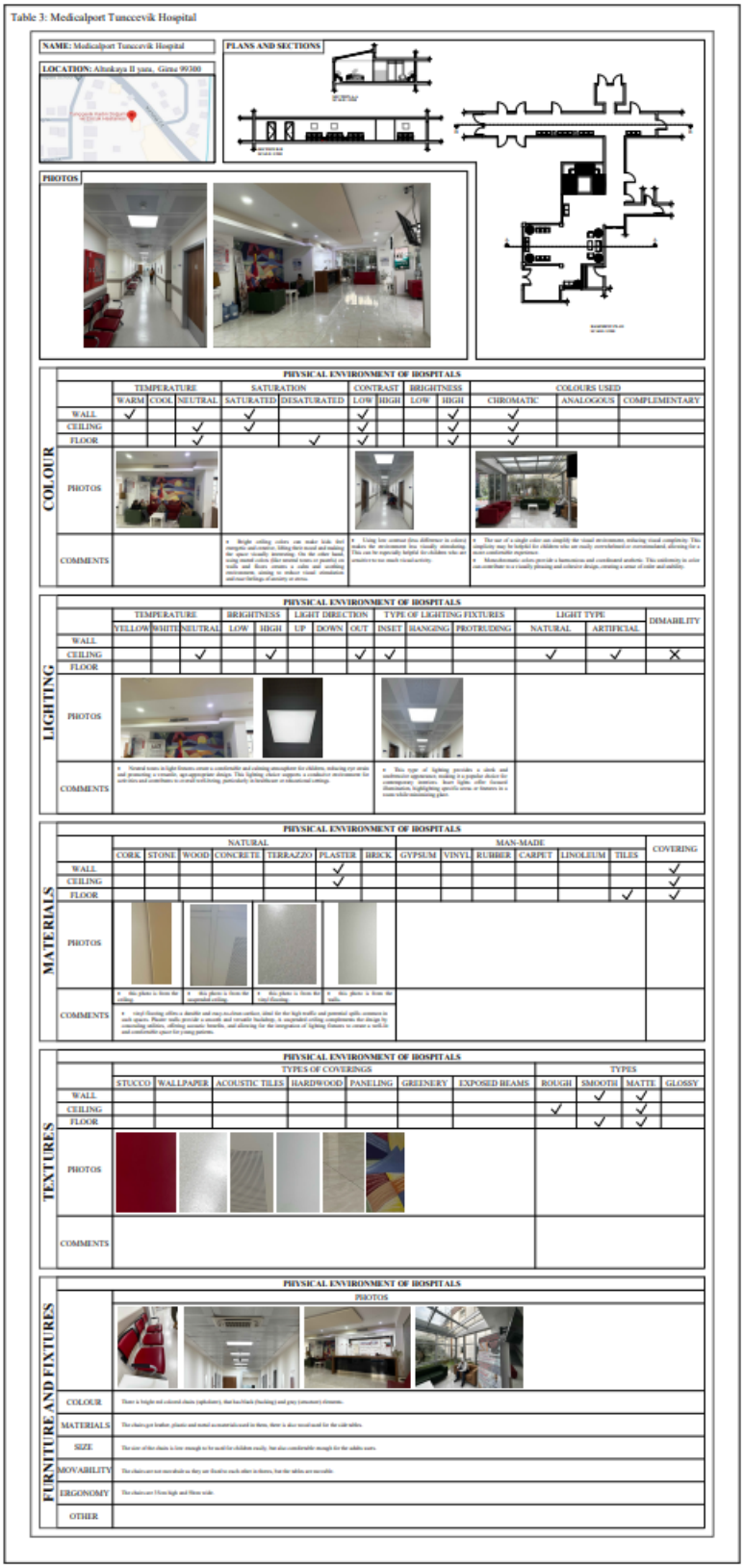
PHYSICAL ENVIRONMENT OF HOSPITALS

	PHOTOS
	 
COLOUR	The chairs colors are dark red and white.
MATERIALS	The materials used for the chairs are fabric and steel for the structure.
SIZE	The size of the chairs is low enough to be used for children easily, but also comfortable enough for the adults users.
MOVABILITY	The chairs aren't movable.
ERGONOMY	The chairs are 1.0cm high and 45cm wide.
OTHER	

Yaşam Hospital



Cyprus Central Hospital

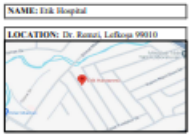


Medicalport Tunççevik Hospital

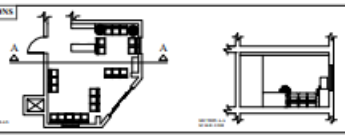
Table 4: Etik Hospital

NAME: Etik Hospital

LOCATION: Dr. Rustri, Lefkosa 99010



PLANS AND SECTIONS



PHOTOS

PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓			✓	✓		✓		✓			✓
CEILING			✓	✓		✓			✓	✓		
FLOOR	✓	✓			✓	✓			✓	✓		
PHOTOS												
COMMENTS	• Bright ceiling colors can make kids feel energetic and creative, lifting their mood and making the space visually interesting. On the other hand, using neutral colors like neutral tones or pastels on walls and floors creates a calm and soothing environment, aiming to reduce visual stimulation and ease feelings of anxiety or stress.					• Using low contrast (less difference in colors) makes the environment less visually stimulating. This can be especially helpful for children who are sensitive to too much visual activity.				• The use of a single color can simplify the visual environment, reducing visual complexity. This simplicity may be helpful for children who are easily overwhelmed or overstimulated, allowing for a more comfortable experience. • Monochromatic colors provide a harmonious and coordinated aesthetic. This uniformity in color can contribute to a visually pleasing and cohesive design, creating a sense of order and stability.		

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓	✓	✓			✓			✓	✓		✕
FLOOR														
PHOTOS														
COMMENTS														

PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								✓
CEILING						✓								✓
FLOOR													✓	
PHOTOS														
COMMENTS	• while the materials in this space are relatively basic, the colours and textures thrive in both the space and the furniture													

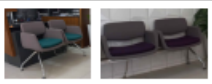
PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

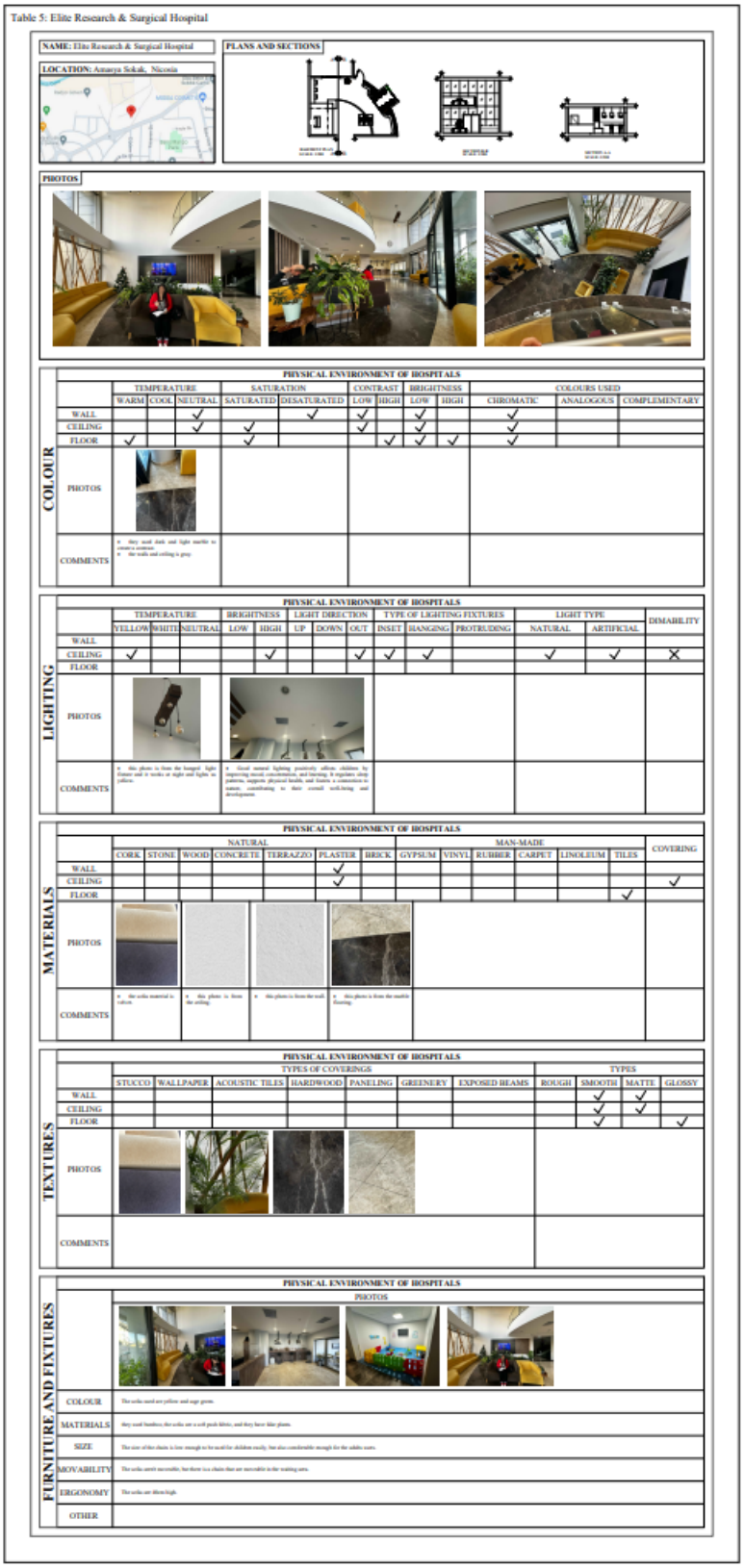
	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL											
CEILING											
FLOOR											
PHOTOS											
COMMENTS	• Exposure to different textures plays a crucial role in children's development by providing tactile stimulation, supporting sensory exploration, and enhancing cognitive, emotional, and social skills. It fosters creativity, imagination, and language development, contributing to a well-rounded sensory experience that promotes holistic growth.										

PHYSICAL ENVIRONMENT OF HOSPITALS

FURNITURE AND FIXTURES

	PHOTOS
	
COLOUR	There are dark red and dark purple chairs (upholstery), that have cool gray (backing) and chrome (structure) elements. The overall color scheme of the waiting room is a muted gold and white color palette.
MATERIALS	The chairs are made of Polyester Basket weave fabric which is tough but durable for long term use and can withstand a child's fidgeting tendencies. The plants are fake and potted in white ceramic pots that are bottom heavy so as not topple over if bumped into.
SIZE	The size of the chairs are not suitable for children as they are too high for them to sit comfortably with their feet flat on the ground, they were designed with only adult users in mind.
MOVABILITY	The chairs are not movable as they are fixed to each other in threes and twos.
ERGONOMY	The chairs are 45cm high, 50cm wide, and 45cm deep.
OTHER	

Etik Hospital



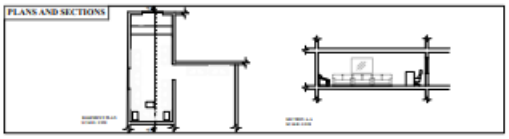
Elite Research & Surgical Hospital

Table 6: Alia International Hospital

NAME: Alia International Hospital

LOCATION: 20 Street, Section 366b, Kuwait

PLANS AND SECTIONS



PHOTOS

PHYSICAL ENVIRONMENT OF HOSPITALS

COLOUR

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓	✓		✓		✓		✓		
CEILING			✓	✓		✓			✓	✓		
FLOOR	✓			✓		✓		✓		✓		
PHOTOS												
COMMENTS										* Utilizing analogous color palettes, where colors sit next to each other on the color wheel, can bring about favorable outcomes in spaces for children. These harmonized color selections establish a visually connected and aesthetically satisfying environment. For instance, merging variations of blue and green or incorporating warm hues such as orange and yellow can evoke feelings of harmony and unity.		

PHYSICAL ENVIRONMENT OF HOSPITALS

LIGHTING

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING			✓		✓			✓	✓			✓		✗
FLOOR														
PHOTOS														
COMMENTS														

PHYSICAL ENVIRONMENT OF HOSPITALS

MATERIALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING						✓								✓
FLOOR													✓	
PHOTOS														
COMMENTS	* Tight and small waiting areas can lead to physical discomfort, heightened anxiety, limited social interaction, challenges in engaging activities, difficulty in distraction, and potential safety concerns for children. Ensuring waiting areas provide sufficient space is essential to create a positive and accommodating waiting experience for children.													

PHYSICAL ENVIRONMENT OF HOSPITALS

TEXTURES

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL										✓	
CEILING										✓	
FLOOR											✓
PHOTOS											
COMMENTS	* The dimensions of a waiting room play a crucial role in influencing the physical well-being, comfort, social interactions, engagement in learning opportunities, arrangement flexibility, alleviation of stressful situations, and overall safety and accessibility for children. It is vital to have a waiting area of suitable size to ensure a positive and comprehensive waiting experience for children.										

PHYSICAL ENVIRONMENT OF HOSPITALS

FURNITURE AND FIXTURES

	PHOTOS
	
COLOUR	the color of the chairs are teal.
MATERIALS	the chairs structure are made of steel.
SIZE	The size of the seating furniture are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't movable.
ERGONOMY	The chairs are 40cm high.
OTHER	

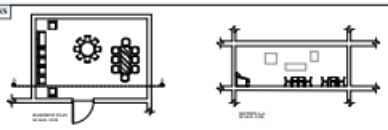
Alia International Hospital

Table 7: Al-Seef Hospital

NAME: Al-Seef Hospital

LOCATION: 3 Al Bijat St, Salmiya, Kuwait

PLANS AND SECTIONS



PHOTOS

COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓	✓			✓		✓		✓	
CEILING			✓	✓		✓			✓	✓		
FLOOR	✓			✓			✓		✓	✓		
PHOTOS												
COMMENTS	• Bright and vibrant colors, such as cheerful yellows, blues, and greens, can evoke a sense of energy, playfulness, and creativity. These colors contribute to a visually engaging environment, uplifting children's moods and creating a lively atmosphere that helps in alleviating boredom during the wait.									• Soft and calming hues, including pastels and neutral tones, have a soothing effect. These colors create a more relaxed atmosphere, reducing visual stimulation and potentially easing feelings of anxiety or stress in children. Such calming environments contribute to a sense of comfort during the waiting period.		

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING	✓				✓			✓	✓	✓		✓	✓	✗
FLOOR														
PHOTOS														
COMMENTS														

MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓		✓						✓
CEILING						✓		✓						
FLOOR													✓	
PHOTOS														
COMMENTS	• Designing spaces around engaging themes, such as nature or storytelling, provides a backdrop for shared interests. Thematic environments spark conversations and collaborative play, centered around common themes, fostering a sense of camaraderie among children. • Integrating playful elements, such as colorful and interactive installations, stimulates curiosity and draws children towards shared areas. These purposefully designed areas serve as focal points for social interaction, allowing children to engage in cooperative play and imaginative activities.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS											
COMMENTS	• Promoting Interaction via Specifically Designed Spaces for Children: Designing environments that encourage interaction among children is a deliberate strategy in environmental planning, providing multiple benefits for their social, emotional, and cognitive growth. Tailored spaces aimed at fostering engagement and collaboration play a vital role in nurturing positive relationships among young individuals.							• Thoughtfully arranged seating areas, whether in clusters or around communal tables, encourage casual interactions. Comfortable seating promotes a relaxed atmosphere where children feel at ease engaging with their peers.			

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	PHOTOS
	
COLOUR	there are different colored furniture, the ones made for the children got multiple colors, the furniture for the adults got brown chairs and dark brown for the side tables.
MATERIALS	the furniture are mostly made of wood and leather for the covering of the chair, the children furniture are made of plastic.
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't movable except the chairs for the children.
ERGONOMY	The chairs are 60cm high and 50cm wide.
OTHER	

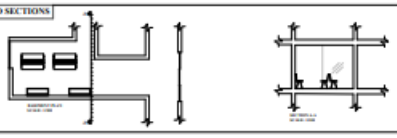
Al-Seef Hospital

Table 8: Taiba Hospital

NAME: Taiba Hospital

LOCATION: 5 Rd, Sabah Al Salem, Kuwait

PLANS AND SECTIONS



PHOTOS

COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL		✓		✓			✓		✓	✓	✓	✓
CEILING			✓	✓		✓			✓	✓		
FLOOR		✓		✓		✓			✓	✓		
PHOTOS												
COMMENTS	• Maximizing illumination in areas designed for children fosters a positive elevation in mood, improves visual comfort and safety, stimulates exploration, aids in learning, boosts alertness, establishes a welcoming ambiance, and assists in daily routines. This purposeful attention to lighting plays a crucial role in creating a balanced and nurturing setting for the growth and development of children.											

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING		✓			✓			✓	✓			✓	✓	✗
FLOOR														
PHOTOS														
COMMENTS														

MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								✓
CEILING						✓								
FLOOR												✓		
PHOTOS														
COMMENTS	• The use of a training room significantly impacts children's physical well-being, sense of comfort, social interactions, engagement in learning opportunities, flexibility in arrangement, mitigation of overcrowded situations, and overall safety and accessibility. Ensuring an appropriately sized waiting area is essential for creating a positive and holistic waiting experience for children.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING									✓	✓	
FLOOR									✓	✓	
PHOTOS											
COMMENTS	• Colorful murals serve as vibrant and engaging design elements in children's spaces, offering a range of benefits for their development. These large-scale artworks often depict playful scenes, imaginative characters, or educational themes, creating a visually stimulating environment.										

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	PHOTOS
	
COLOUR	the color of the chairs are black for the steel legs of the chair, wood for the structure and dark gray for the seating cushioning
MATERIALS	the furniture are mostly made of wood, with steel and cotton cushioning
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable
MOVABILITY	The chairs aren't movable.
ERGONOMY	The chairs are 45cm high.
OTHER	

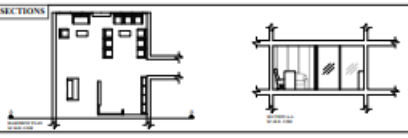
Taiba Hospital

Table 9: Wara Hospital

NAME: Wara Hospital

LOCATION: 2 Rd, Subah Al Salem, Kuwait

PLANS AND SECTIONS



PHOTOS

COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			SATURATION		CONTRAST	BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL			✓	✓			✓		✓	✓		
CEILING	✓			✓		✓			✓	✓		
FLOOR	✓			✓			✓		✓	✓		✓
PHOTOS												
COMMENTS	• Warm and neutral tones in children's environments create a comforting and adaptable atmosphere, promoting positive emotions, visual comfort, and age-appropriate design. These colors offer a versatile backdrop that supports concentration, enhances learning environments, and accommodates changing preferences as children grow.									• Applying analogous color schemes, where colors are adjacent on the color wheel, can have positive effects on children's environments. These harmonious color combinations create a visually cohesive and aesthetically pleasing atmosphere. For example, combining shades of blue and green or variations like orange and yellow can evoke a sense of balance and unity.		

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS

	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING		✓	✓		✓			✓	✓		✓	✓		✗
FLOOR														
PHOTOS														
COMMENTS	• Integrating large windows and natural light into spaces designed for children is a deliberate choice with multifaceted benefits. This thoughtful approach enhances both the physical environment and the overall well-being of children in various aspects. This intentional design not only fosters a vibrant and inviting atmosphere but also contributes to a nurturing and enriching environment, promoting optimal growth and development for children.													

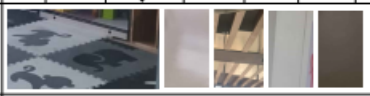
MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS

	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL						✓								
CEILING			✓			✓								✓
FLOOR											✓	✓		
PHOTOS														
COMMENTS	• Creating spaces specifically for children that allow a degree of independence while maintaining visibility for parents is a thoughtful approach in environment design. These spaces offer a balance between fostering a child's autonomy and ensuring a sense of security through parental oversight.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL									✓	✓	
CEILING					✓				✓	✓	
FLOOR			✓					✓	✓	✓	
PHOTOS											
COMMENTS											

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS

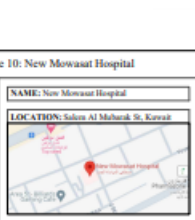
	PHOTOS
	
COLOUR	there are multiple chairs types and they got different colors, some are dark blue, white, and beige sofa.
MATERIALS	There is plastic chairs, and there are sofas that are made of wood and polyester fabrics.
SIZE	The sizes of the seating elements vary as there are multiple choices for the users to pick from, all of them are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The sofas aren't movable, but there are movable plastic chairs.
ERGONOMY	The chairs are fifteen high.
OTHER	

Wara Hospital

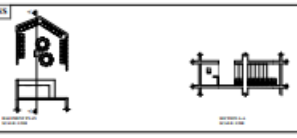
Table 10: New Mowasat Hospital

NAME: New Mowasat Hospital

LOCATION: Salem Al Mubarak St, Kuwait



PLANS AND SECTIONS



PHOTOS

COLOUR

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			SATURATION		CONTRAST		BRIGHTNESS		COLOURS USED		
	WARM	COOL	NEUTRAL	SATURATED	DESATURATED	LOW	HIGH	LOW	HIGH	CHROMATIC	ANALOGOUS	COMPLEMENTARY
WALL	✓		✓	✓			✓		✓		✓	
CEILING			✓	✓		✓			✓	✓		
FLOOR		✓		✓		✓			✓	✓		
PHOTOS												
COMMENTS				• Vibrant ceiling colors can evoke a sense of energy and creativity in children, boosting their mood and adding visual interest to the space. Conversely, employing subdued colors, such as neutral tones or pastels, on walls and floors aims to establish a serene and calming environment, with the intention of minimizing visual stimulation and alleviating feelings of anxiety or stress.				

LIGHTING

PHYSICAL ENVIRONMENT OF HOSPITALS	TEMPERATURE			BRIGHTNESS		LIGHT DIRECTION			TYPE OF LIGHTING FIXTURES			LIGHT TYPE		DIMABILITY
	YELLOW	WHITE	NEUTRAL	LOW	HIGH	UP	DOWN	OUT	INSET	HANGING	PROTRUDING	NATURAL	ARTIFICIAL	
WALL														
CEILING		✓			✓			✓	✓			✓		✗
FLOOR														
PHOTOS														
COMMENTS	• Encouraging Interaction Through Designed Spaces for Children: Creating spaces that facilitate interaction among children is a strategic approach in environmental design, offering numerous advantages for their social, emotional, and cognitive development. Tailored spaces that promote engagement and collaboration contribute significantly to fostering positive relationships among young individuals.													

MATERIALS

PHYSICAL ENVIRONMENT OF HOSPITALS	NATURAL							MAN-MADE						COVERING
	CORK	STONE	WOOD	CONCRETE	TERRAZZO	PLASTER	BRICK	GYPSUM	VINYL	RUBBER	CARPET	LINOLEUM	TILES	
WALL														
CEILING						✓		✓						✓
FLOOR									✓					
PHOTOS														
COMMENTS	• Use of Open Spaces for Children: Open spaces play a crucial role in children's environments, offering a range of benefits that contribute to their physical, emotional, and social development. These expansive areas, whether indoors or outdoors, provide opportunities for various activities and interactions that positively impact children's well-being.													

TEXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	TYPES OF COVERINGS							TYPES			
	STUCCO	WALLPAPER	ACOUSTIC TILES	HARDWOOD	PANELING	GREENERY	EXPOSED BEAMS	ROUGH	SMOOTH	MATTE	GLOSSY
WALL		✓							✓	✓	
CEILING									✓	✓	
FLOOR									✓		✓
PHOTOS											
COMMENTS	• Use of Colorful Wallpaper for Children: Colorful wallpaper serves as an impactful design element in children's spaces, contributing to a visually stimulating and engaging environment. The diverse range of patterns and hues offers various benefits for children's development and well-being.										

FURNITURE AND FIXTURES

PHYSICAL ENVIRONMENT OF HOSPITALS	PHOTOS
	
COLOUR	the chairs are get multiple colors and they are (light green, black and silver)
MATERIALS	the furniture are mostly made of plastic and steel.
SIZE	The size of the seating fixtures are reasonably sized for adults and children to use and be comfortable.
MOVABILITY	The chairs aren't movable.
ERGONOMY	The chairs are 33cm high and 50cm wide.
OTHER	

New Mowasat Hospital