



YAŞAR UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES

MASTER THESIS

**EVALUATION OF CLINIC WAITING AREAS IN
TERMS OF INTERIOR DESIGN:
CASE OF TİRE AND ÇEŞME STATE HOSPITALS**

GHAZAL HEIDARI

THESIS ADVISOR: ASSOC.PROF. GÜLNUR BALLİCE, PH.D.

INTERIOR ARCHITECTURE

PRESENTATION DATE: 21.08.2017

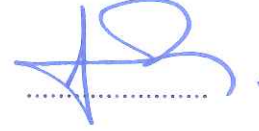
BORNOVA / İZMİR
AUGUST 2017

We certify that we have read this thesis and that in our opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Science.

Jury Members:

Assoc. Prof. Dr. Gülnur BALLİCE
Yaşar University

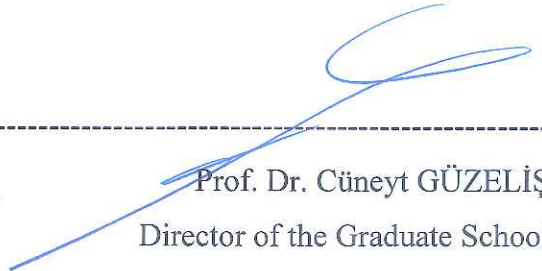
Signature:



Assoc. Prof. Dr. Tutku Didem ALTUN
Dokuz Eylül University



Assist. Prof. Dr. Çiğdem ÇETİN
Yaşar University



Prof. Dr. Cüneyt GÜZELİŞ
Director of the Graduate School

ABSTRACT

EVALUATION OF CLINIC WAITING AREAS IN TERMS OF INTERIOR DESIGN: CASE OF TİRE AND ÇEŞME STATE HOSPITALS

Heidari, Ghazal

M.Sc., Interior Architecture

Advisor: Assoc. Prof. Dr. Gülnur BALLİCE

August 2017

As hospitals are functionally complex structures, hospital users - patient, relatives, staff - are in a stressful mood for different reasons. Because of the crowd, patients and their relatives can stay in waiting areas for a long time. It is important that the physical environment they are in during this expectation does not give them any additional stress. As a result of the researches and observations made, it has been found that this stress and tension have declined positively in places where full conformity to human needs is mentioned. At this point, the prominence of interior quality emerges.

This thesis evaluates the quality of clinic waiting areas and their user expectations. It concentrates on their human-based designs and their physical and psychological impact on users. Two equivalent state hospitals were selected as the study area since 2010, selected hospitals are state hospitals with similar capacities, similar characteristics and in the general hospital category. The most significant difference between these hospitals is the positioning and functioning of the outpatient waiting areas in the plan. While the waiting area in Tire State Hospital is divided for each outpatient clinic, there are common waiting areas at Çeşme State Hospital. Comparisons between these areas have been made in order to examine in more detail the effect of this different scheme on users. As a comparative method, post-use evaluation method was applied and literature survey and observation were done in addition to data collection by questionnaire.

In addition to comparing the plan layout of the two outpatient clinic outpatient clinics, the concepts of orientation and confidentiality/limitations with interior components such as materials, color/texture, lighting/visual comfort, ventilation, acoustic/visual

comfort, furniture, it was investigated. It has been found that there are some differences between the two hospitals in terms of acoustic comfort, privacy, natural lighting and ventilation resulting from the differentiation of the scheme.

At the first stage, the literature was searched and related subjects were investigated. Then visits to the hospitals were made for observation, photographs and preliminary surveys and a questionnaire was applied to the users in the waiting area to identify the main problems. Through questionnaires, the physical and psychological needs of users and aesthetic pleasures were questioned under the headings of security, privacy, ergonomics and hygiene. According to the results, the effects of the space on the users have been determined. The main objective of this study is therefore related to the augmentation of space satisfaction in waiting halls of state hospital clinics.

It is hoped that the design suggestions formulated will help increase awareness of those concerned with the design of such interior spaces. At the end of the research, suggestions were made to select appropriate plan schemes for the waiting areas, to improve the indoor quality and to increase the satisfaction with the space.

Key words: Hospitals, clinic waiting halls, human-oriented design, quality of interior space.

ÖZ
POLİKLİNİK BEKLEME ALANLARININ İÇ MEKÂN TASARIMI
AÇISINDAN DEĞERLENDİRİLMESİ:
TİRE VE ÇEŞME DEVLET HASTANELERİ

Heidari, Ghazal

Yüksek Lisans Tezi, İç Mimarlık

Danışman: Doç. Dr. Gülnur BALLİCE

Ağustos 2017

Hastaneler işlevsel olarak karmaşık yapılar olmalarının yanı sıra hastane kullanıcıları da -hasta, hasta yakınları, personel- farklı nedenlerden dolayı stresli bir ruh hali içerisinde. Yoğun kalabalık nedeniyle de hasta ve hasta yakınları uzun süre bekleme alanlarında kalabilmektedir. Bu bekleme sırasında içinde buldukları fiziksel ortamın kendilerine ayrıca bir stres getirmemesi önemlidir. Yapılan araştırmalar ve gözlemler sonucunda, insan ihtiyaçlarına tam uygunluğun söz konusu olduğu mekânlarda bu stres ve gerginliğin olumlu yönde azaldığı saptanmıştır. Bu noktada iç mekân kalitesinin önemi ortaya çıkmaktadır.

Bu çalışmada hastanelerin poliklinik bekleme alanlarının iç mekân kalitesi kullanıcıların beklentileri ile değerlendirilip, insan odaklı tasarım yaklaşımı üzerinde durulmuş ve iç mekânın kullanıcılar üzerindeki fiziksel ve psikolojik etkileri araştırılmıştır. Bu çalışmada çalışma alanı olarak 2010 yılı sonrası yapılmış iki adet devlet hastanesi seçilmiştir. Seçilen hastaneler yaklaşık aynı kapasiteye sahip, benzer özellikleri olan ve genel hastane kategorisinde yer alan devlet hastaneleridir. Bu hastaneler arasındaki en belirgin fark poliklinik bekleme alanlarının plan içerisindeki konumlanması ve işleyişidir. Tire Devlet Hastanesinde bekleme alanı her poliklinik için ayrıştırılmışken Çeşme Devlet Hastanesinde ortak bekleme alanları bulunmaktadır. Bu farklı plan şemasının kullanıcılar üzerindeki etkisini daha detaylı irdeleyebilmek için bu alanlar arasında karşılaştırma yapılmıştır. Karşılaştırmada kullanım sonrası değerlendirme yöntemi uygulanmıştır ve anket yoluyla veri toplamanın yanı sıra literatür taraması ve gözlem yapılmıştır.

Bu iki örnek hastanenin poliklinik bekleme alanlarının plan şeması karşılaştırmasının yanı sıra, bu alanlardaki malzeme, renk/doku, aydınlatma/görsel konfor,

havalandırma, akustik/işitsel konfor, mobilya, stres azaltıcı elemanlar gibi iç mekan elemanları ile yön bulma ve mahremiyet/sınır kavramları incelenmiştir. Plan şemasının farklılaşması sonucu akustik konfor, mahremiyet, doğal aydınlatma ve havalandırma hususlarında iki hastane arasında birtakım farklılıklar ortaya çıktığı tespit edilmiştir.

İlk aşamada literatür taraması yapılmış ve ilgili konular araştırılmıştır. Ardından gözlem, fotoğraf çekimi ve ön saptamalar için hastane ziyaretleri gerçekleştirilmiş, temel sorunları saptamak amacıyla bekleme alanındaki kullanıcılara anket uygulanmıştır. Anket soruları yoluyla kullanıcıların fiziksel ve psikolojik gereksinimleri ile estetik beğenileri, güvenlik, mahremiyet, ergonomi, hijyen başlıkları altında sorgulanmıştır. Çıkan sonuçlara göre mekânın kullanıcılar üzerindeki etkileri tespit edilmiştir.

Bu araştırmalar ışığında tezin temel amacı, Türkiye’deki devlet hastanelerine ait poliklinik bekleme alanlarında, iç mekân kalitesini ve dolayısıyla mekâna bağlı memnuniyeti yükseltmek üzere; mevcut durumu aktarmak ve bir tasarım önerisi oluşturarak bu konudaki farkındalığı arttırmaktır. Araştırmanın sonucunda bekleme alanları için uygun plan şeması seçimi, iç mekân kalitesinin iyileşmesi ve mekâna bağlı memnuniyetin yükseltilmesi amacıyla öneriler sunulmuştur.

Anahtar sözcükler: Hastaneler, poliklinik bekleme alanları, insan odaklı tasarım, iç mekân kalitesi.

ACKNOWLEDGEMENTS

First of all, I would like to thank my supervisor Assoc. Prof. Dr. Gülnur BALLICE for her guidance and patience during this study. I would also like to thank Prof. Dr. Tayfun TANER for his support in proof-reading and Assist. Prof. Dr. Banu ÖZGÜREL for her tremendous help in data analysis.

I would like to thank to the staff of Scientific Research Project (Coordinator Assist. Prof. Dr. Çiğdem ÇETİN, researcher Assoc. Prof. Dr. Zeynep TUNA ULTA, supervisors and all scholars) which is supported by Yaşar University titled “HI-Healthcare Interior: The Perception and Satisfaction of Healthcare Staff depending on the Quality of Working and Resting Area in Healthcare Buildings” for their support in constructing the thesis framework, content and process.

I would like to special thanks to Op. Dr. Fatih HAYALİ the head doctor of Tire State Hospital and Op. Dr. Atıl BİROL the head doctor of Çeşme State Hospital for their supporting me in the realization of the field work.

I would like to express my enduring love to my dear mother, who is always supportive, loving and caring to me in every possible way in my life.

Ghazal Heidari
İzmir, 2017

TEXT OF OATH

I declare and honestly confirm that my study, titled “EVALUATION OF CLINIC WAITING AREAS IN TERMS OF INTERIOR DESIGN: CASE OF TIRE AND ÇEŞME STATE HOSPITALS” and presented as a Master’s Thesis, has been written without applying to any assistance inconsistent with scientific ethics and traditions. I declare, to the best of my knowledge and belief, that all content and ideas drawn directly or indirectly from external sources are indicated in the text and listed in the list of references.

Ghazal HEIDARI

August 21, 2017


A handwritten signature in blue ink, consisting of a long horizontal line with a stylized, looped flourish above it.

TABLE OF CONTENTS

ABSTRACT.....	iii
ÖZ	v
ACKNOWLEDGEMENTS.....	vii
TEXT OF OATH.....	viii
TABLE OF CONTENTS.....	ix
LIST OF FIGURES	xi
LIST OF TABLES.....	xiv
CHAPTER ONE: INTRODUCTION.....	1
1.1. PROBLEM DEFINITION	1
1.2. OBJECTIVE AND SIGNIFICANCE OF RESEARCH.....	2
1.3. METHOD OF THE STUDY.....	3
1.4. LIMITATIONS.....	4
1.5. ORGANIZATION OF THE THESIS.....	4
1.6. LITERATURE SURVEY.....	5
CHAPTER TWO: DEFINITIONS AND CONCEPTS RELATED TO HOSPITALS.....	9
2.1. HOSPITAL DEFINITION AND HISTORY.....	9
2.2. PLAN SCHEME OF HOSPITALS.....	10
2.3. CLASSIFICATION OF HOSPITALS.....	11
2.4. SECTIONS OF HOSPITALS.....	12
2.5. MINIMUM DESIGN STANDARDS OF CLINICS.....	15
CHAPTER THREE: WAITING HALLS OF CLINICS.....	20
3.1. THE ROLE AND SIGNIFICANCE OF WAITING HALLS.....	20
3.2. TYPES AND SIZES OF WAITING AREAS.....	21
3.3. MEETING CONDITIONS OF PSYCHOLOGICAL COMFORT.....	22
3.3.1. WAY-FINDING.....	22
3.3.2. PRIVACY AND BOUNDARIES.....	24
3.4. ELEMENTS OF INTERIOR DESIGN IN WAITING AREAS.....	25
3.4.1. COLOR/TEXTURE.....	27
3.4.2. MATERIALS USED.....	31
3.4.3. FURNITURE.....	35
3.4.4. LIGHTING/VISUAL COMFORT.....	37

3.4.5. ACOUSTICS/AUDITORIAL COMFORT.....	40
3.4.6. VENTILATION.....	42
3.4.7. ELEMENTS DIMINISHING STRESS.....	45
CHAPTER FOUR: CASE STUDY.....	48
4.1. ÇEŞME STATE HOSPITAL.....	49
4.1.1. CLINICS.....	49
4.1.2. WAITING AREA.....	50
4.2. TIRE STATE HOSPITAL.....	54
4.2.1. CLINICS.....	55
4.2.2. WAITING AREA.....	57
CHAPTER FIVE: ANALYSIS OF WAITING AREAS.....	60
5.1. COMPARISON OF WAITING AREAS.....	61
5.2. USER EXPECTATION.....	87
CHAPTER SIX: CONCLUSIONS AND PROPOSALS.....	94
LIST OF REFERENCES.....	108
APPENDICES.....	111
APPENDIX A. RESEARCH QUESTIONS IN ENGLISH.....	112
APPENDIX B. RESEARCH QUESTIONS IN TURKISH.....	120

LIST OF FIGURES

Figure 2.1. Scheme of Pavilion and Block Plan Types.....	11
Figure 2.2. Plan of Dermatology Clinic in Tire State Hospital	13
Figure 2.3. Diane L. Max Health Center, MSK Regional Ambulatory Cancer Center.	13
Figure 2.4. Healthcare Service Centers.....	14
Figure 3.1. Clinic Waiting Areas.	21
Figure 3.2. Schemes Indicating Waiting Halls and Flow of Circulation.	21
Figure 3.3. Waiting Areas with Protected Spaces.....	25
Figure 3.4. Waiting Areas with Defined Limits.....	26
Figure 3.5. Coding Must Not Be Confused with Colors Used.	27
Figure 3.6. For Skin Colors of Patients and Width of Pigmentation a Nautical Grey is Ideal for Observation and Evaluation.	30
Figure 3.7. Correct Color Selection for Waiting Areas.	30
Figure 3.8. Use of Wood in Hospitals.....	31
Figure 3.9. PVC Floor Covering.....	33
Figure 3.10. Floor Spaces Covered by Ceramics.....	33
Figure 3.11. Carpeting in Waiting Area.....	33
Figure 3.12. Vinyl Flooring.	34
Figure 3.13. Ceiling Design in Hospitals.....	35
Figure 3.14. Center of Cancer Treatment.	35
Figure 3.15. Anti-bacterial Leather Upholstery.....	36
Figure 3.16. Positioning Furniture with Affects Social Contact Negatively.	37
Figure 3.17. Natural Lighting	38
Figure 3.18. General and Regional Lighting.....	39
Figure 3.19. Lighting of Special Units.....	39
Figure 3.20. Lighting of Waiting Areas.....	40
Figure 3.21. Air Ventilation by Using Chimneys.	43

Figure 3.22. The Creation of Air Movement Due to National Connection and Changes in Pressure.	43
Figure 3.23. Use of Artifacts in Waiting Halls.	46
Figure 3.24. Use of Natural Elements in Waiting Halls.	47
Figure 3.25. Stress Decreasing Features in Waiting Halls.	47
Figure 4.1. Exterior View of Çeşme State Hospital.	49
Figure 4.2. Ground Floor Plan of Çeşme State Hospital.	50
Figure 4.3. Clinic Unit of Çeşme State Hospital.	50
Figure 4.4. Çeşme State Hospital Ground Floor Plan.	51
Figure 4.5. Waiting Areas of Clinics- Sect. A, B.	51
Figure 4.6. Waiting Areas of Clinics- Sect. C.	52
Figure 4.7. Clinic Waiting Area- A.	52
Figure 4.8. Clinic Waiting Area- A Orthopedics Unit.	52
Figure 4.9. Clinic Waiting Area- B.	53
Figure 4.10. Clinic Waiting Area- B.	53
Figure 4.11. Waiting Hall of Teeth Clinic- C.	54
Figure 4.12. Exterior View of Tire State Hospital.	55
Figure 4.13. Ground Floor Plan of Tire ST. Hospital.	56
Figure 4.14. Clinics Panel in Tire Hospital.	56
Figure 4.15. Tire Hospital Ground Floor Waiting Areas.	57
Figure 4.16. Clinic Units of the Ground Floor.	57
Figure 4.17. Children's Diseases Clinic.	58
Figure 4.18. Tire State Hospital Waiting Areas of the First Floor.	58
Figure 4.19. Clinics of the Second Floor.	58
Figure 4.20. Women's Illnesses and Birth Clinic.	59
Figure 5.1. Çeşme State Hospital Polyclinic Use of Color in the Waiting Area.	61
Figure 5.2. Tire State Hospital Use of Colors in the Policlinic Waiting Area.	75

Figure 6.1. Use of Natural Materials in the Waiting Areas.	94
Figure 6.2. PVC Flooring in Waiting Areas.	95
Figure 6.3. Acoustic Ceiling Application.	96
Figure 6.4. Waiting Room of Shriners Hospital for Children.....	97
Figure 6.5. Lobby of Aiyuhua Hospital for Children and Women.....	97
Figure 6.6. Waiting Room of Aiyuhua Hospital for Children and Women.....	98
Figure 6.7. American Sino Hospital Audong Clinic.....	98
Figure 6.8. Upstate Cancer Center Waiting Room.	99
Figure 6.9. Memorial Sloan Kettering Regional Ambulatory Cancer Center.	99
Figure 6.10. Natural Lighting in Hospital.....	100
Figure 6.11. Separator Panel Providing Sound Insulation.....	101
Figure 6.12. Furniture Samples in Polyclinic Waiting Areas.....	102
Figure 6.13. Furniture Samples.....	103
Figure 6.14. Furniture Samples in Clinics.	103
Figure 6.15. Use of Nature Elements.....	104
Figure 6.16. Use of Natural Elements in Healthcare.	104

LIST OF TABLES

Table 1.1. Problem Definition of the Study.....	2
Table 3.1. Psychological Effects of Colors.....	28
Table 3.2. Spatial Effects Depending on Color Properties.	29
Table 5.1. Çeşme State Hospital Color and Material on the Waiting Area Surfaces.....	62
Table 5.2. Tire State Hospital Color and Material on the Waiting Area Surfaces.....	75



CHAPTER ONE

INTRODUCTION

Hospitals which aim to protect and/or regain health of patients are complex buildings having intricate functions. Those patients or their kin who go to hospital, wish to receive good service in a number of respects. Due to crowd formation, they pass a certain period of their time in waiting halls. This time period can be difficult and stressful due to their psychological state. One of the methods in decreasing patient's and visitor's negative impacts is to design well thought spaces with regard to physical conditions. A suitably designed waiting hall may help in mitigating patient stress. Patients need support and good mood, besides medical care, in healing from their illnesses.

Therefore, the physical and psychological comfort of patients need to be taken into account in hospital design. If the quality and level of comfort in waiting halls is unsatisfactory, these may lead to undesirable consequences.

When minimum design standards in clinic waiting areas it was observed that the legal framework did not refer to visual and auditory comfort, stress decreasing elements, ergonomic and privacy. The basic themes of this research were born out of the deficiencies pinpointed in the legal framework (Guide of the Ministry of Health, 2010). This thesis, therefore, makes an attempt in how criteria can be assessed with reference to patient surveys and how a design guide can be formulated.

1.1. Problem Definition

It can be observed that in general waiting halls of health premises in Turkey have unsatisfactory interior design quality. The main reasons for this assertion are;

- Lack of understanding that hospital waiting halls are sections where user density is high;
- Quality of elements such as visual, audial and furniture are left secondary as compared with architectural design decisions;
- That investment allocated to non-clinic sections is limited;

- Lack of definition of legal standards as related to the comfort and quality of waiting halls;
- That users do not reflect their views or desires in this sense;
- That interior design is not user-oriented and
- That designers do not come up with new and creative proposals (Table 1.1).

Table 1.1. Problem Definition of the Study

The quality of interior design of waiting halls in state hospitals is poor		
Waiting areas are crowded and intricate	Design is not patient oriented and user comfort is ignored	Legislation does not define material and comfort standards of waiting halls
Audial comfort is lost due to intense noise	Stress levels of patients increase	Waiting period is conceived as longer than actual

1.2. Objective and Significance of Research

Patients and those who accompany them in hospitals stay long periods of time in waiting halls due to intense crowds. It is clear that the physical environment of such spaces should not increase the stress and burden they already live. On the contrary, they need to ease this burden and stress created on both the personnel and users.

All actions create a reaction. This is also valid in human-space relationships. People react physically and emotionally to spaces they live in. Such reactions also depend on their spiritual and emotional context. A correct and functionally suitable interior design will affect reactions in a positive manner (Barışık, 2013).

In order to grasp human needs properly, human behavior and their reasons need to be understood correctly (Başkaya, Yıldırım& Muslu, 2005). In this sense hospitals have complex designs which embody tensions. Patients calling at hospitals also have stress due to their physical or psychological conditions. Research and observations indicate that negative effects can be diminished when the environment is suitable, consequently, interior design quality appears as significant criteria (Kuruçelik, 2009).

This thesis aims to pinpoint the existing problems of waiting halls and propose design solutions for their betterment. It may thus be possible to make patient waiting periods of a better quality.

The reference point of this study is post-occupancy evaluation and therefore two hospitals were chosen for the case study: Çeşme and Tire State Hospitals. These have common as well as unique features. Both were constructed after 2010. Their capacities are different as well as the design of their patients waiting areas. Tire Hospital has a bed capacity of 150, while this figure is 75. Çeşme Hospital has one waiting zone for several specialized clinics while Tire Hospital has a waiting hall for each clinic branch. These also have separate doctor rooms and secretaries. In general, the average waiting time in the outpatient clinics in the case study hospitals varied between 15 and 50 minutes. This waiting depends on the patients density in clinics.

1.3. Method of the Study

In this study, first a literature survey was conducted as regards design criteria in hospital interior design. Books, articles and academic dissertations were studied as regards different clinics. Four visits were made to Tire Hospital and three to Çeşme Hospital in order to take photographs, make observations and preliminary assessments. Simultaneously a patient survey was conducted in each in order to nail fundamental problems.

12 surveys were conducted in Çeşme Hospital on 07.03.2017. This was followed by 5 on 10.03.2017 and 28 on 10.04.2017. As a result, a total of 45 survey interviews have been conducted in Çeşme. Survey participants were the users of waiting halls of different clinics. Such users were either patients or people accompanying them.

Tire Hospital was first visited on 15.03.2017 and 40 surveys were conducted. Other visits were made on 12.04.2017 (32 interviewees), 14.04.2017 (13 surveys) and 05.05.2017 (23 surveys). The survey questions were based on literature survey and included whether or not the following were satisfactory in design: physical and psychological needs of patients, aesthetic value; safety, privacy, ergonomics and hygiene. Survey participants also evaluated the following issues; design of waiting halls, correct choice of furniture, appropriate ventilation, use of natural and artificial lighting, acoustic comfort of the space, correct selection of color and texture of materials, suitability of materials chosen, auditory comfort and use of stress diminishing elements.

A method of 'random sampling' has been adopted while considering general hospital data and number of total patients. In Cesme State Hospital while daily average of patients is 600 during winter months, it can increase up to 1200 in the summers. This study has accepted an average of 900 person per day. In Tire State Hospital clinics receive a daily average of 2500-3000 persons, although figures change seasonally. It was consequently decided that a sample of %5 of daily clinic users had to be surveyed. As a result, 45 surveys were conducted in Çeşme Hospital and 125 in Tire. Data obtained from these surveys were first organized with Excel program and then transferred to the SPSS (Standard Package for Social Sciences) Program. Assessment of problems and formulation of proposals of this thesis very much depends on our field survey.

1.4. Limitations

As a result of the examination of the hospitals, private hospitals were found to be more regular and sensitive. For this reason, state hospitals were selected for the study area. Another reason why state hospitals are preferred as a sample hospital is the fact that they are more crowded and dense. Tire and Cesme state hospitals were selected as a case study in this research. Both of these hospitals are in the general hospital category and are medium-sized. Medium-sized hospitals have been preferred in order to conduct a more detailed and accurate research. The reason for this is that time was limited, and that the work was conducted individually. Since interviewers were people with health problems and that they were physically and emotionally disturbed, many showed unwillingness to reply to the survey questions.

1.5. Organization of the Thesis

The definition of the problem, aim and significance of this research, the method(s) used and literature survey have been mentioned in this first section.

The second chapter looks at concepts and definitions of hospitals and tries to put the contents in order. This chapter includes general definitions of clinic waiting areas, their architecture, interior design, parameters, significance of waiting areas and their interrelationship with users. Hospitals have different waiting areas. Each of these waiting areas has different characteristics and users. For example, outpatient clinic, emergency room, intensive care, x-ray, blood collection and initial registration waiting area are un similar. In this study, waiting areas of the outpatient clinic were examined.

The reason for this is that the most intensive department in hospitals is the polyclinics section. Patients are forced to wait for a long time to arrive at their clinics. This affects patients, relatives and employees.

The fourth chapter makes an analysis and evaluation of the selected hospitals based on evidence collected by plan sketches, photographs and other information. The fifth chapter evaluates survey findings. How survey results can be interpreted is also a question examined in the same chapter. The results of the surveys show that the Tire State Hospital is more regular. In this hospital patients complain about the colors used in waiting areas and the sitting elements. There is more concentration and congestion in Çeşme State Hospital. The reason for this is that the waiting area for polyclinics in this hospital is not designed. Patients and their relatives who have applied to the outpatient clinics in this hospital are expected to arrive in the corridors where the medical examination rooms are located. In Çeşme state hospital, outpatient clinics are not divided into different branches and all are located in different rooms of the same saloon.

In the sixth and the final chapter, all information gathered from observations and the literature survey are put together with the field survey results. This chapter discusses whether the hypothesis formerly put forward have been reached or not. It is in this chapter that an attempt is made to formulate an interior design guide for the interior designs of hospital waiting halls.

1.6. Literature Survey

It has been observed that comprehensive research conducted on clinic waiting areas of hospitals is bleak. One study is that of Barışık (2013), where he has studied, at a master level, “the relationships of spatial organization and behavioral and auditory comfort parameters”. This researcher has analyzed the feeling of comfort and the psychology of its perception as well as the design parameters which play a role in human-space relationships.

The study is based on behavioral and perception of comfort parameters. Color, light and noise quality of waiting spaces have been analyzed on the basis of evidence drawn from surveys.

A second study is that of TUIK (2010) “where design guidelines for nonclinical areas in hospitals” have been analyzed. Such areas included circulation spaces, dormitories and waiting halls all of which are public areas. These were looked at from the point of

view of spatial and perceptive quality. Waiting halls were classified according to the type of hospital and their functions and evaluated in various ways. This study analyses spatial demands of waiting spaces and their impact on human psychology.

A third research belongs to Başkaya, Yıldırım & Muslu (2005) where İbni Sina Hospital in Ankara is examined from the functional and perceptive-behavioral viewpoints as regards its clinic waiting zones. It too is based on research findings. Planning and functional quality's impact on user perception and psychology are studied, the study evaluates findings on way-finding and spatial perception.

Andrade, C., Lima, M., Fornara, F., Bonaiuto, M. (2012) have written an article titled "User's views of hospital environmental quality, validation of the perceived hospital-environment quality indicators (PHEQIs)". Their article is concerned with human-space relations and the impact of space quality on human psychology. Their findings, based on scientific evidence, indicate that quality of space affects all users and positively encourage recovery. Researches also indicate that even if the performance of doctors and nurses remain the same, patients are satisfied with the care they receive, if their spaces are of good quality and warm.

Ünver (2006) has written a thesis on "The physical and non-physical assessment of way-finding in hospitals". This study explains that hospitals are complex premises and that the patients are tense. As a result, complications in way finding increase patient stress and therefore constitutes important criteria in interior space design. This study, after examining the impacts of way-finding on human psychology, makes proposals in resolving problems.

Dalke and others (2006), in their article titled "Color and lighting in hospital design" have come up with the conclusion that correct selection of color and lighting has a positive effect on the recovery of patients. Effects of colors; on the psychology of patients and in way-finding were also analyzed in this article. Şahin (2016), in her master thesis titled "Special interior materials used in hospital buildings", draws attention to correct material selection which conforms functional needs and that materials need to be analyzed in various respects. The author also indicates that length of use period, purpose of use as well as physical and psychological demands of users would be taken into account in selecting materials.

Berberoğlu (2010), has written a thesis on "Perception, limits, concept of personal space and hospital design". His main point is the significance of human-oriented design. The author draws attention to designer and user relationships; that designers

need to take into account patient psychology, their limits as well as their personal spaces and privacy. Some of the existing research stress the architectural features of spaces, while others have examine spaces from the physical and psychological aspects. However, there is as yet no study which has questioned the architectural, physical, psychological and sociological impacts of hospital waiting areas on users and/or their satisfaction level. This research will thus represent a first attempt, based on scientific evidence, on an issue which has been ignored up to the present. It makes certain proposals which may improve interior space quality and may act as a stepping stone for future investigations.

It is hoped that this study will indicate standards by which waiting spaces in hospitals can be improved. These may also help in formulating new design proposals. Patient satisfaction will no doubt increase with new designs. But also doctors, personal, administrators and other decision makers will benefit from this new viewpoint.

As yet there is no doubt that correct and well-designed interior spaces shorten the recovery period of patients and better their psychology. It is hoped that this study will make contributions in this direction. Despite the fact that the case study has included only the state hospitals of Tire and Çeşme, it may still come up with design principles and criteria which can improve interior designs and applications.

CHAPTER TWO

DEFINITIONS AND CONCEPTS RELATED TO HOSPITALS

2.1. Hospital Definition and History

In a hospital, patient's illness is first defined, after a series of examinations and if necessary they are cared for afterwards. They have a significant place in human life with their buildings, equipment, doctors, nurses and other personnel. They diminish pains, cure patients, prevent the spreading of contagious illnesses, and protect the wellbeing of the public. Hospitals carry out scientific research and also educate doctors, nurses and others for a healthy national environment (Yılmaz,2012). Human beings have faced health problems since the beginning of time. Good health is of prime significance for all. Therefore, the history of health buildings go back many thousand years. Allegedly the first hospital was built 1200 BC. Asklepion in Bergama is cited among the oldest health centers of the world. This was a city "where death could not enter, and wills were never opened" (Menekay, 2009).

In antique Greece it is known that special temples were built on order to look after and cure ill people. These were built in green wilderness and near water sources (springs) with curative features. First century AD, hospitals developed and special premises built for soldiers, slaves and civilians. The first of its kind in Turkey was Gevher Nesibe Sultan Hospital and Health Madrasah in Kayseri. A noteworthy development was seen during the Byzantine and Muslim Seljuk Periods. The latter named health premises as "darüşşifa" meaning house of health.

The Ottomans developed further on the Seljukian heritage. With increased life standards of the 20th century, new and specialized spaces became a necessity and treatment sections turned into smaller bedroom areas (Yılmaz 2012).

After the declaration of the Turkish Republic, fundamental changes took place in health premises and new laws and regulations were formulated. The construction and management of hospitals were done by local governments or city governors. In order to encourage hospital treatment, new hospitals were built in Ankara, Istanbul, Sivas, Trabzon, Erzurum and Diyarbakır in 1924. The typical hospital designs of the 1940's

and 1950's had mainly 'T'; 'U' and 'L' shaped plans. During the 1960's, with an increased population, demand for hospitals and clinics augmented and hospital capacities were increased. The typical hospital designs of the 1970's show one nucleus type of plans and tile covered roofs. Treatment rooms were collected in high-rise blocks, clinics and operation halls at ground level and joined together with the nucleus. In 1980's high-rise hospitals were no longer desired. In 1990's and following the year 2000 witnessed a serious increase in the numbers of private hospitals (Uzunay, 2011).

2.2. Plan Scheme of Hospitals

Circulation areas not only join various spaces, but also those where people talk, get information and pass their time. A correctly solved circulation system increases hospitals efficiency in the long run. Different units would have individual circulation systems, would be kept at a minimum distance and prevent people entry to sections with important functions (Karakaşlı, 2010).

Warnings provide information which directs user behavior. These would change in intensity, diversity, complexity and level of secrecy. High frequency noises, bright lights, sharp and unexpected noises and colors initiate reactions. The shape of a space, its direction and level of light affect emotions directly. If no impact occurs, this leads to confusion; if it occurs at a high level it leads to loss of emotions (Başkaya, 2005, s.59).

Karakaşlı (2010) has defined the principles of circulation in hospitals in the following manner: 'The first principle of circulation is to protect patients. Secondly these would be designed as short routes and separate different functions. Yet another principle is to segregate dissimilar sections from each other's and to control them" (p.18)

Hospitals, according to their plan types, are either composed of pavilions or of a block system (Uzunay, 2011).

Pavilion System: This was the design approach employed until the beginning of 1900's. Its main purpose was to prevent the spreading of a contagious illnesses. Each special unit was designed as a separate entity. But it prevented inter- departmental communication and was an expensive system. In time, other design approaches were adopted.

Block System: Through time it was seen that many illnesses were not contagious and that isolation can be provided within hospital sections.

Consequently, the pavilion system was changed to the block system. In this alternative, various hospital sections grow vertically and/or horizontally around a central circulation nucleus and connected by corridors. Present block hospitals are generally of I, L, T, H and Y shapes and/or a certain combination of these (Figure 2.1).

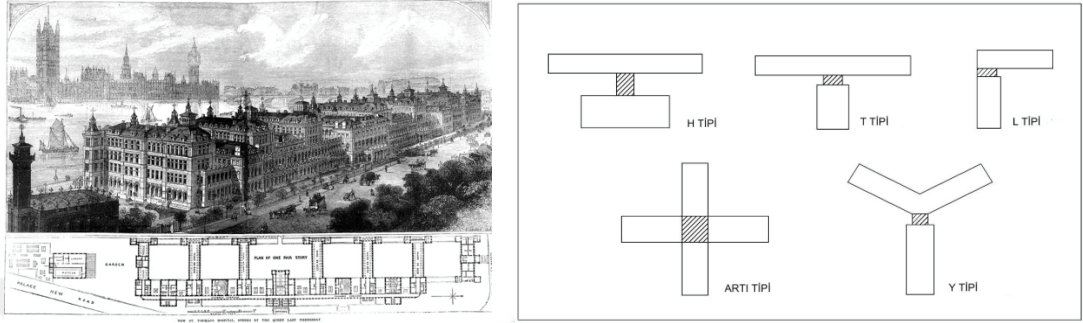


Figure 2.1. a. Pavilion style plan solution, St. Thomas Hospital (http://hedefaof.com/documents/Ders_kitaplari/sak202u.pdf, 06.2017). b. Schemes of block type hospitals (Uzunay, 2011).

Sections where an illness is diagnosed after certain examination are called the diagnosis sections. Consequently, a patient is either treated at his domicile or at the hospital. Such section has three sections: radiology, laboratories and nuclear medicine. Frequently, comprehensive hospitals maintain all three sections. Certain hospitals are aided by external medical facilities. In general, all three have similar pedestrian traffic conditions and uses and therefore grouped together. The diagnosis units are located on the axis of pedestrian traffic for easy reach of users (Karakaşlı, 2010).

One of the main factors in design is the location of waiting halls. These needs to be segregated from corridors and placed individually. Yet they should not be far away from circulation spaces. Plan solution would cater for privacy, as well as for socialization.

2.3. Classification of Hospitals

Hospitals can be classified with regard to the services provided and/or their size/capacity. According to the regulations on the Management of Healthcare Units with beds, they are grouped under 5 headings (Karakaşlı, 2010):

- District/locality hospitals
- Daily used services
- Special branch hospitals

- Education and research hospitals
- General hospitals

District hospitals: They provide 112 ambulance, urgent services, birth, care while standing or lying, consultation and care units. But when in depth analyses or intervention is needed, patients are sent to bigger units.

Daily services: Patients are consulted, intervened and treated without occupying a bed. They have a minimum of five beds and act in several health branches.

Special branch Hospital: Patients of a special age or gender group, as well as a special group of illnesses (of a special organ or group of organs) are diagnosed, examined, treated or rehabilitated in these premises.

Education and research hospital: People receive education here (or make research in), to be specialists or auxiliary branch experts.

General hospitals: Disrespectful of their age and gender all urgent cases and all patients related to existing branches of the hospital are accepted and treated in such hospitals. These have a minimum of 50 beds. In these hospital's there are 6 branches: clinics (patient care units), daily clinics, operation rooms, diagnosis section, treatment section and assistive health services (Guide of Min. of Health, 2010).

2.4. Sections of Hospitals

Hospitals basically have three sections: health, administrative and technical services. In addition, assistant services are provided in the form of personnel bedrooms, gatekeepers or car parking (Genç, 2009).

Health facilities: These are grouped under six sections: clinics, daily clinics, operation halls, diagnosis, treatment and auxiliary services.

- Clinics: These are sections of hospitals where patients receive in-bed treatments of all kinds. They contain the following facilities: patient rooms, station for nurses, doctor and nurse rooms, toilets, bath(s), laboratory of the floor, office, daytime room, cleaning room and depots.
- Daily clinics (or called 'Poliklinikler' in Turkish): Diagnosis of illness and first treatments are made here. Preliminary interventions and analyses are possible. Generally, patients do not stay here more than a few hours. According to Uzunay (2011) these are “units which at least one area of specialization (or more) is provided with a least two doctors at a time” (p.35).

Patients consult daily clinics during daytime hours. Therefore, they display a density of crowds in hospitals. Patients and people accompanying them pass longer periods in their waiting halls than other sections of hospitals. According to a decree issued by the Ministry of Health (No: 2010/80) priority in these sections are the following: urgent cases, the disabled, pregnant women, people above 65 years of age, children below 7 years, wounded or disabled soldiers and court cases (<http://tiredh.saglik.gov.tr/>). Daily clinics contain the following spaces: Registration and waiting areas, doctor's diagnosis rooms, intervention room, small laboratory, nurses' room and other service rooms. Since a number of different specialized branches exist, the planning of waiting areas of daily clinics needs attention (Figure 2.2).

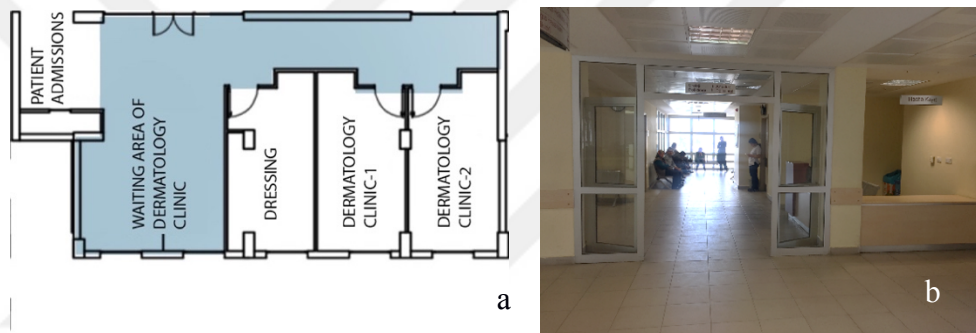


Figure 2.2. a. Plan of Dermatology Clinic in Tire State Hospital (Head Doctor in charge), b. Entrance to Dermatology clinic in Tire State Hospital (Personal archive, 2017)

Users of hospitals are intense in daily clinics. It's malfunctioning can therefore affect negatively the management of a hospital significantly. One of the main reasons for this is that each clinic takes care of incoming patients as well as those stationed in the hospital (Figure 2.3).

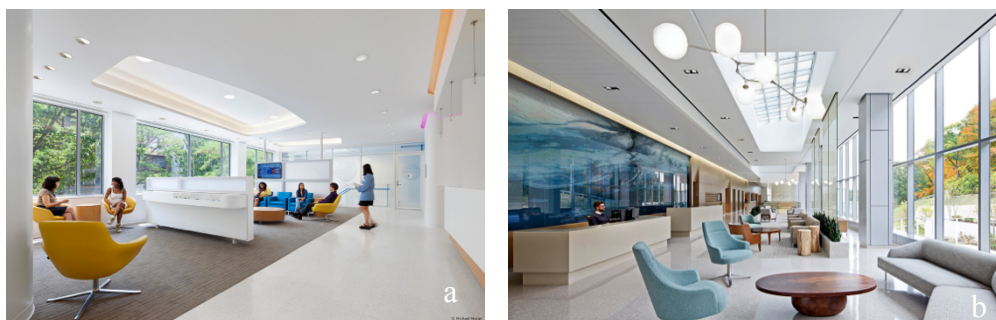


Figure 2.3. a. Diane L. Max Health Center, b. MSK Regional Ambulatory Cancer Center (<http://bustler.net/news/5064/winners-of-the-2016-aia-national-healthcare-design-awards>, 06.2017).

Daily clinics have a number of specialized branches. These can be divided into two types are: specialized or normal. The first need special physical facilities and equipment. They include: Gastroenterology; Cardiology; Endocrinology; Neurology; Otorhinolaryngology; Ophthalmology; Dermatology; Aesthetic, Plastic and Reconstructive Surgery; Urology; Physical Therapy and Rehabilitation; Gynecology and Obstetrics; Pediatrics, Psychiatry and Orthodontics. Service units which lie outside specialized zones are expected to arrange as in daily clinic areas. These sections are: Orthopedics and Traumatology; Pulmonology; Internal Diseases and Preventative Health Care (Ministry of Health Guide, 2010).

- Operation Halls: Patients are operated here. Depending on the medical branch these can be located and functioning differently. General operation rooms, birth-giving section and operation hall and orthopedics require special spaces and equipment (Genç, 2009).
- Units for Diagnosis: After a general examination, patients are analyzed from a number of points, in order to define their illness. Several laboratories and an endoscopy section is needed. In order to serve both in and outpatients, this section need to be connected to daily clinics (Fig. 2.4).
- Treatment Units: Serve both in and out- patients. A diagnosed patient receives here the treatment prescribed for him.
- Section of Assistant Health Services: It includes the following: urgent cases unit, pharmacy, patient registration, blood bank and morgue.



Figure 2.4. a, b. Section of Health Services (<http://www.livhospital.com/en/liv-hospital-ulus/1>, 06.2017).

- Section of Management Services: General management functions are run here, as well as the buying and registration of necessary materials. The size of this

unit changes according to the size of a hospital. This section is related to daily clinics, diagnosis, patientcare and technical services units.

- Section of Technical Services: This section is composed of (a) service units for patients and (b) technical services. The first serves sections of a hospital which are used by out-patients and is comprised of kitchen, washeteria, hairdresser, tailor and funeral services. The second group refers to heating of buildings, climatization, lifts, painting and demands of similar facilities.

2.5. Minimum Design Standards of Clinics¹

The need for change in the minimum architectural design standards of health care structures in Turkey is determined by relevant commissions and necessary changes are made at regular intervals. In this section, the minimum standards for these properties are examined. Designing, constructing, maintaining and repairing new, renovated, or supplemented health buildings must meet such standards. The planning, construction and operation of a health care facility must aim at patient safety and take precautions to ensure it requirements. The relevant legislation should be considered in this respect. The size and location of each service area will depend on the number and type of services offered. They are areas where patients live and receive services. Patient areas should be designed to allow each patient and equipment to act routinely. Some topics that need to be considered in hospital design can be listed as follows:

Light and views: In the health care facility, all areas where patients and employees are located should receive as much sunlight as possible. Looking out from the inside of the building, there should be relaxing and beautiful views. Access to natural light should be achieved without going to private places. Staff should not have to enter a patient's or resident's room to reach the natural light. For example, the windows at the end of corridors, skylights looking towards the deep areas of a building's dense passage, door-to-door windows, and the lights from the door can be used as natural light sources.

Way finding: These are signs which define places where people want to go at the highest possible speed and with the least need to ask questions.

¹ This section is summarized from Akdag, R., Tosun, N. and Caylan, A.K. (2010).

Corridors: They are areas that provide inter-unit accessibility. Wide corridors add spaciousness, ease of use and security features to the building.

Security: It is important to ensure the safety of patients or their relatives and others in certain medical conditions.

Privacy: Patients' privacy should be maintained at physical and documentation levels from their relatives, strangers, and unrelated medical personnel.

Polyclinic Unit:

The outpatient clinics should be close to the hospital's entrance and should carry the following characteristics because hospitals are the most used and most trafficked areas. It is intended to provide information on the specific areas of waiting, patient registration, the examination room / rooms of the same subject, the secretariat, sampling room, preparation room, results display, the areas where small intervention procedures are performed, areas where small tests are performed and services.

Polyclinic Service Areas:

These are areas where incoming patient take appointment in order to be examined by a doctor. This is done by giving patients a number by which the queue up. They are sent to laboratories and other check-up units after consulting the doctor again.

Polyclinic Waiting Areas:

Polyclinic waiting areas are areas of sufficient size foreseen by the number of people accompanying patients to be examined. Patients and their relatives will sit in these areas and benefit from services to meet their basic needs. In these areas, wheelchair users should also have technical equipment showing waiting areas and inspection order lists. These areas should be soundproofed to accommodate a crowded community. If possible, these areas should be separated according to the outpatient clinic characteristics; so the crowd must be distributed in order to protect patient privacy. With each patient, the average attendance rate of a polyclinic is 1.8 and in the emergency service is 2.2 (Ref. Kayseri Health Campus Needs Program). If a waiting area serves both inpatient and outpatients it should be designed to ensure visual confidentiality of patients and should carry the following characteristics:

- It should be the area where patients and their relatives have a system fix that they can do their turn.
- Where patient examination rooms open directly to waiting areas some noise barriers need to be put between these two spaces.
- Regulations should consider wheelchairs and stretchers and the future of patients.
- There should be an area where the secretary and hostess fills in patient records and preliminary information.
- A space should be provided that allows for the necessary preparation of the patient's examination as prescribed.

Polyclinic Room:

The doctor, nurse or related technical staff using various instruments (such as ultrasonic, ECG, biomicroscope) represent areas of examination. According to the characteristic of the polyclinic, the patient is examined in bed, sitting or on a special stretch. The equipment and the compartments of the examination room may vary according to the medical problem. It must carry the following features.

- Every outpatient clinic should receive daylight as much as possible;
- The polyclinic room should be in accordance to requirements and should be capable of protecting the patient's privacy against those accompanying the patient;
- Depending on the nature of the polyclinic, the patient is seated, lies down or is examined on a special stretch. Since the equipment and compartments of the examination room may vary, the internal arrangement of the polyclinic should protect the patient's privacy (eg gynecology, surgery, forensic polyclinic and child polyclinics). There must be at least 13 m² of free floor space in these rooms and at least 100 cm of clearance should be provided on all three sides of the table / chair. The area per person in the study area is at least 4-5 m². With the assumption that at least one physician, a nurse or a medical secretary and a

patient will be present in the polyclinic room, general polyclinic rooms should be at least 20 m²;

- The physician must provide the patient a nurse or the related technical staff where they have examine the patient using various instruments (such as ultrasound, ECG, various ophthalmoscopes). A mechanism should exist to reduce the light, which facilitates the use of the instruments;
- If the polyclinic room is opens to the waiting room, in terms of patient and employee safety and satisfaction, the examination room should have no noise from the outside and should have acoustic isolation.

Polyclinic Intervention Room:

There must be a 24 m² room where some intervention and examination can be done. Medical gas equipment and hand washing area should be located in all intervention rooms.

Toilets:

Toilets should be located in the outpatient area both for patients and their relatives. The characteristics and numbers of these toilets should be appropriate for use by the disabled. Patient toilets must be separate for men and women. The number of washrooms must be calculated according to the number of users. Toilets should also be planned for personnel employed at the hospital and for general use.

Polyclinic Entrances:

Health facilities are always exposed to intense human traffic, and patients, companions and staff who spend a lot of time there. Therefore, the dimensions of patients' waiting areas should be well adjusted. In particular, spaces should be reserved for main entrance, outpatient clinic, emergency room entry areas, intensive care operating room entrance areas, and patient relatives' waiting areas. The dimensions of these areas should be large enough to fit the characteristics of the clinic, the number of possible patients and companions, and adequate facilities to meet the physiological needs of the people (such as sitting, drinking, eating and toilet).

Arrangements must be made at all levels of the polyclinic for safety. These may include areas such as application, diagnosis and treatment. The specialty of these areas is to distribute crowds rapidly; but it must be done as soon as possible in case of a patients' operations. Patient entry records will be made at each "Polyclinic Unit" according to the status of operations.

Featured Polyclinics:

Apart from general outpatient clinics, this section deals with outpatient clinics that require specific structuring and equipment. Other adjunct areas outside the specific areas will be arranged in accordance with General Polyclinic Unit areas. Featured polyclinics are Internal Diseases, Cardiology, Neurosurgery, Physiotherapy, Neurology, Urology, Pediatrics, Pulmonology, Aesthetic, Plastic Surgery, Infectious Diseases, Gynecology and Obstetrics, Otorhinolaryngology, Psychiatry, Orthopedics and Traumatology, Pediatrics, Ophthalmology, Dental, Cardiovascular Surgery, Dermatology, Gastroenterology and General Surgery Polyclinics.

CHAPTER THREE

WAITING HALLS OF CLINICS²

In view of the fact that patients and people accompanying them will need to be waiting for long periods of time, the size and refurbishment of waiting halls need to be confirm the ‘Minimum Design Standards’ of the government set in 2010. Each patient is accompanied by 1.8 persons in average.

If the waiting hall is serving both bed-occupying and daily patients, then they have to carry certain characteristics which envisage privacy issues.

In waiting areas there needs to be a system by which patients can follow their position in the waiting list. The location, design and refurbishment of waiting areas must be so that the noise of waiting halls do not reach doctor’s consultancy offices. Design must cater for wheelchairs and rolling beds. A secretary desk will be needed for registration and filling of patient information forms. Also, a place is needed in order to prepare the patient for analysis.

3.1. The Role & Significance of Waiting Halls

Hospital waiting areas serve a number of functions. They need to be of appropriate size. Narrow and long waiting areas can increase the stress lived by patients and people accompanying them (Figure 3.1).

Waiting can occur in the following hospital sections: clinics, patient bedrooms, waiting halls, in corridors, treatment units, diagnosis offices, daily clinics, urgency section, operation halls and intensive care units. One of the most significant elements of waiting halls is the information unit. Patients will need to know where they are, where they need to go, what they need to do and what to do with the results given to them. The information unit answers all these questions. Interior design, signs and verbal information answer such inquiries (Karakaslı, 2010).

² Although clinics and daily clinics have been defined individually earlier, the second will be referred to, in the next sections of the thesis, simply as clinics.



Figure 3.1. a. Clinic waiting area

(http://www.moranbrown.com/asp_scripts/print_image.asp?WebsiteID=15908&GalleryID=60220&MediaID=5678389&Print=0, 06.2017), b. Waiting hall for Children's Diseases Clinic, Lenox Hill-Greenwich Village Hospital (<http://americanbuildersquarterly.com/2015/north-shore-lij-health-system/>, 06.2017)

3.2. Types & Sizes of Waiting Areas

Akalın, Baskaya & Yıldırım (2006) researched a hospital having different waiting areas. These were: pharmacy hall, clinics and radiology section. In the first scheme, pedestrian circulation cut through the waiting hall. In the second one, circulation passed around sitting areas diagonally. In the last one, circulation passed along waiting and sitting areas in parallel (Karakaşlı, 2010).

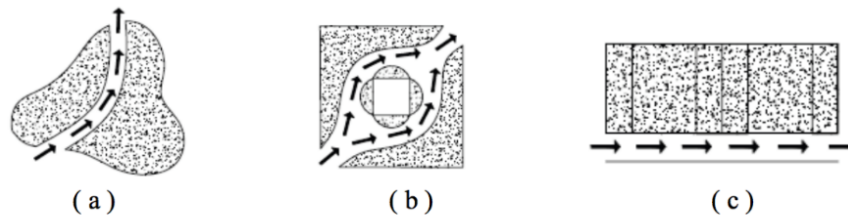


Figure 3.2. Schemes indicating waiting halls and flow of circulation: (a) Pharmacy waiting hall, (b) Clinics waiting hall, (c) Radiology section's waiting hall (Karakaşlı, 2010).

According to the results obtained from a survey interviewees preferred the last where waiting areas were kept outside the flow of circulation. This design was found more quiet, clean, wide and comfortable. This waiting hall is rectangular in shape and one facade faces a garden. This study has shown that if pedestrian flows are correctly designed with respect to waiting areas the consequence is better on users. The waiting hall of the pharmacy was rejected by all interviewees as it created noise and chaos. All users preferred a waiting area with limits and located away from pedestrian traffic.

3.3. Meeting Conditions of Psychological Comfort

Human needs encompass all social and environmental conditions which are needed for a healthy life and for people to be efficient and useful in what do, such needs are personal and intangible concepts. Only when they turn into spatial behavior can they be tangible. Under this heading three aspects are examined below: way-finding, privacy and boundaries (Barışık, 2013).

3.3.1. Way-Finding

This is a type of behavior and comprises of knowing where you are, knowing the route, following it, and knowing the way to the target and the way out (Ünver, 2006). Way-finding problem is not only concerned with hospitals but also in airports, universities, shopping centers, museums and big hotels.

Karakaşlı (2010) has defined wayfinding as: "If it represents all activities involved in finding one's way from one place to the other. It is not the same thing as signalization systems. It is related to behavior. Signalization is related to design which affects behavior" (p.31).

Hospitals have complicated functions. In such places where a majority of users are patients, way finding becomes an issue of significance. Going from one section of a hospital to the other represents complications for patients because they are physically and emotionally disturbed. They are also under stress and have low level of perception. Problems encountered by waiting patients and people accompanying them can be decreased by giving them information. Correct signalization system, rest spaces, accessing telephones and cafeterias can decrease their stress. Brochures and signs explaining them where to go and how to register provides them ease of use (Karakaşlı, 2010).

Hospitals can at first glance be perceived as chaotic and labyrinth like. This is due to multiple functions. If hospitals which are originally small and expand in time with additions, they may become chaotic. Correct signs, maps, lighting, way-finding, guides and landmarks can be used jointly (Karakaşlı, 2010).

Karakaşlı (2010) has explained why people get lost in hospitals. This is related to five basic reasons related to hospital architecture and interior design:

Reflection of unplanned development to spaces, unqualified space design, architectural dimensions, monotonous architectural elements and inefficient signalization system (p.32).

If the information given is too concentrated, finding the right answer and remembering it may involve complications. Since too dense information involves concentration, efficiency of perception falls and tires users. Certain methods can be employed to strengthen user perception by visual symbols. In order to enhance perception through visual signs, the following need attention:

- Correct selection of decision point
- Location of a sign
- Style and size of signs
- Horizontal and vertical effect of writings
- Pronunciation and abbreviation in text.
- Design of arrows
- Color contrast between the background and text
- Use of materials, symbols and colors
- Maps, hand maps, "you are here" diagrams should be correctly designed and understood by foreigners (Barışık, 2013).

Variation in design helps people in finding their way. This is because dissimilar designs in different sections of a complex ease spatial definition. Further changes can be made in texture, form and color of indicators. This variety helps people in visual perception (Ünver, 2006). Using similar details in one space or differentiating designs of different places also help in identifying places. If a person in one space perceives others of different character, this may help him in finding his direction. Visual access, in this sense, may play a significant role.

The concept of way-finding depends on the success of spatial organization. Consequently, plainness or clarity of architectural plans and easy comprehension are significant. Lifts and staircases need to be easily seen and understood. These need to be closely located. Also, placing similar or closely-related functions in proximity to each other will ease movement of patients (Ünver, 2006).

Complicated floor plans and difficulty in identifying them will cause problems. Plans which repeat itself symmetrically negatively affects wayfinding. On the contrary, asymmetrical and readable plans positively affects this activity (Karakışlı, 2010). Among the interior elements which affect direction finding in waiting areas are: the type of plan, color, material selection, lighting and sign systems.

3.3.2. Privacy and Boundaries

Privacy is a fundamental and natural need of human beings and among the most valued. It brings the feelings of safety, respect and sincerity. It is also the nature and depth of information shared with others which determine the variety of human relations. If shared information is not variable relations stay monotonous. Also, if a person desires, privacy can provide people freedom to stay alone (Kuruçelik, 2009).

Doctor- patient relationships are different than others. Because privacy is momentarily shared between two partners. Designs therefore would adopt an approach to mitigate patient tension. The patient needs to feel that he has the control (Berberoğlu, 2010).

Privacy of patients and secrecy can be achieved by one of the following ways:

- Keeping patient consultations and documents secret,
- Providing separate waiting areas for those who wish to be alone,
- Seclusion of some patients from general consultation rooms for their privacy.

This is especially required in mental and genital illnesses as well as alcohol and drug addicts.

- Correct placing of doors and windows for the protection of patient privacy.

Some solutions have been proposed in this direction: selection of noise absorbing materials, separation of quiet and noisy areas and making management changes. (e.g. taking safety precautions where the mentally ill are concerned (Kuruçelik, 2009).

There is a distance and space in human contract which cannot be seen with our eyes. Human beings are social creatures and therefore have social boundaries and physical dimension and ratios. This intangible space which can cause disturbance if violated is called "personal space". The distance by which people protect themselves and their privacy defines the boundary. Best way a person can protect himself is to isolate himself from his environment. In close relationships, the boundaries can be minimal. Personal distance, although similar to personal space, does not mean the same thing. Personal space appears if there are more than one person at a location. Personal space defines a person's own limits. Personal space can be within or outside an individual space. When alone, a person does not face any threat for his personal space and his distance does not change.

The social-animal needs to feeling of possession of space, and thus acts accordingly. Ownership indicates men's liberty and a person feels secure and comfortable when he is free. People define their freedom by secluding themselves from their environment and for him this is a mechanism of defense (Berberoğlu, 2010) (Figure 3.3).

Each object has its own boundaries and takes form according to these. Objects in nature has it boundaries. Human beings have settled and existed after seeing and experiencing limits in nature. The object defined as a boundary does not have to be full or even tangible. These can sometimes be invisible. The object is to have a separation function while maintain the relationship between separated sections (Berberoğlu 2010).

Berberoğlu (2010) has defined boundaries as: “Rather than being separate, they are dynamic intersections formed by relationships and overturning changes” (p.10).

A wall is the most tangible of all boundaries. Each wall is a boundary but all boundaries are not made up of walls. Human perception play a role in the formation of boundaries. A boundary joints different sides of architectural activity and space while accentuating man-space relationships. In addition, a different meaning of a boundary is that it indicates the last point where space may be expanded; in other words, wherever the “inside” finishes the “outside” starts (Berberoğlu, 2010).

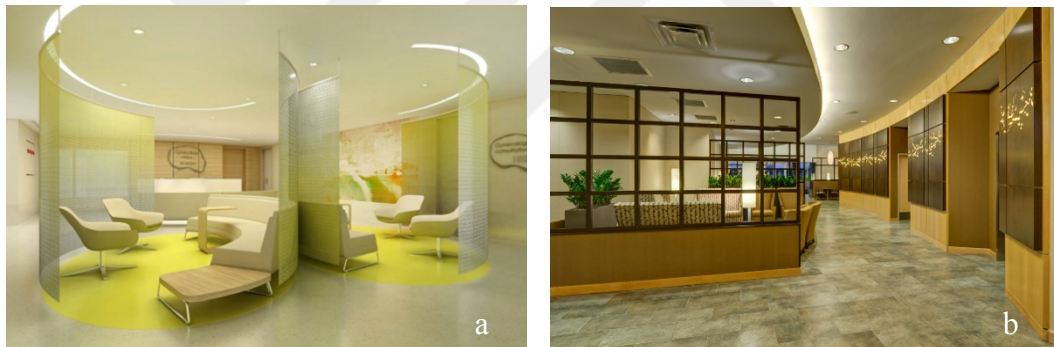


Figure 3.3. Waiting areas with protected personal space, a. The Emirates Hospital waiting area (<http://www.designmena.com/insight/samuel-creations-delivers-new-design-for-5-star-hospital-in-the-uae>, 06.2017), b. Baylor Medical Center waiting hall (<http://idgrouptx.wpengine.netdna-cdn.com/wp-content/uploads/2014/06/baylor1.jpg>, 06.2017).

3.4. Elements of Interior Design in Waiting Areas

Designers, while thinking of man-space relationships, aim to provide spaces suitable for human comfort. In this respect comfort here means a suitably designed reception areas, sign systems and electronic indicators which help people in wayfinding and finally information desks. Additionally, a system would be set out: for the cleaning and ventilation of spaces; adjusting artificial lighting at suitable levels and the prevention of noise. Plan solutions would cater for both greater socialization and the need for privacy (Başkaya, Yıldırım & Muslu, 2005) (Figure 3.4).

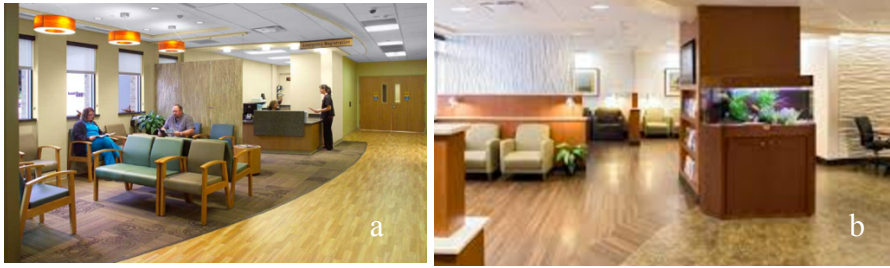


Figure 3.4. Waiting areas with defined limits a.

(<http://www.forumstudio.com/resources/content/1/6/images/Mitchell-County-Waiting-Room.jpg>,06.2017),

b.

(https://www.thaarch.com/files/project/1511_715_Baylor%20Roberts%20Surgical%20Waiting_Other%20Hero_01.jpg,06.2017).

Clinics need a special entry point. This would be followed by suitable signalization so that people reach their destination without crossing other users. This can only be provided by a well formulated “Registration-Reception-Queuing-Waiting” system each having its own physical spaces (Karakaşlı, 2010).

The features of hospital interiors are significant not only for patients but for other users such as doctors, nurses, visitors, people accompanying patients. Its functions and their relationships are well thought out, then all users would be positively affected from such designs (Barışık, 2013, s.32).

Clinics are the most commonly used and therefore most crowded sections of hospitals. They, therefore, would be in proximity to the entrance. In addition, a certain number of conditions must be met. A clinic would have individually designed registration, waiting, diagnosis rooms, secretary’s office, sample taking, preparation and results sections. In addition, there would be intervention, small tests, nurses, toilets sections. Each clinic would have access to natural lighting wherever possible. Clinic rooms would suit their functions and protect patients’ privacy as well as of people accompanying them. Patients are examined while lying down, sitting or at a desk. Interiors of rooms would need to be suitable functionally as well as for privacy. These rooms would have a minimum of 13 m^2 of free space and 100 cm of free space around three sides of desks. A 4-5 m^2 space is needed for each person in these rooms. Clinic rooms would be at least 20 m^2 . In examination rooms lights must be adjustable in order to use equipment properly. They would also have acoustic isolation in order to prevent outside noise. An office of 24 m^2 is also required for initial interventions and analyses. Intervention rooms need to be supplied by medical gas and a sink (Ministry of Health Guide, 2010).

3.4.1. Color/Texture

Çetindağ (2007) has defined color as ‘‘the light reflected or diffused by objects and its tone, shininess and absorbance.’’ (p.4)

Color plays a significant role in our happiness and healthiness and is therefore a significant design factor. Color differences help all objects and surfaces of a space to be perceived better. Choice of color is important in that spaces and furniture cannot be changed easily. The following factors affect a person’s choice of color: psychological effects, identity of the users, conditioned reflexes, styles of the period, fashion, age and gender, societal values, symbolic meaning of colors, suitability of a spaces’ function and size of spaces (Özdemir, 2005, s.391).

Of the many functions of colors, hospitals use them in way-finding and in signalization. These may help define a space better. Colors and coding must be of a clear definition in order to ease way-finding (Dalke et.al., 2006, p.349) (Figure 3.5).

A designer needs to know well how colors affect human psychology. A color may have positive or negative effects -significant is the way by which they are controlled. The saturation level of colors is also a noteworthy factor (Özdemir, 2005, p.393) (Table 3.1).



Figure 3.5. a. Coding must not be confused with colors used, b. Color coding on the floor, (Dalke vd., 2006).

Human beings correlate certain colors with certain materials. When an object is seen in a different color, he feels strange. Same colors may create different reactions on different people. This is due to their personalities, level of education, their culture, ages, gender and suppressed emotions. Blue can represent ‘‘peace of wind’’ for some

and coldness or sincerity on others. People's color preferences go long back in history. The perception of color in spaces has changed not only from one nation to the other, but also according to the styles of the period. For example, pastel colors have never been used in walls during the Renaissance period (Özdemir, 2005, p.395).

Özdemir (2005) has claimed that: "When we wish to reflect the style of a period in a contemporary work, we need to examine color types of that period, their values and level of saturation of colors" (p.395).

Depending on its function and size, color selection for a space is one of the main criteria in its design. Colors that match the type of use help activities to be continued in comfort. For example, colors of high level of contrast need to be used with care in places dedicated to rest. The color value and saturation level of colors gain significance with functions. For example, red color can be irritating in a living room. But the same red may be pleasing on a detail. The dimensions of a space affect color selection. Because colors can make a space look bigger or smaller, higher or lower and wider or narrower than its actual size (Karakasli, 2010).

Table 3.1. Psychological effects of colors (Özdemir, 2005, p.393).

Color	Effects
Red	Increases attention, draws attention, creates excitement, represents health, liveliness, energy, courage and power. If exaggerated represents violence, danger and sin.
Light pink	Politeness, softness, sweetness, timidity.
Orange	Creates liveliness, directs towards unity; if exaggerated creates instability, richness and represent light.
Yellow	Most luminous, bright and lively color, symbolizes richness, abundance, honor and affiliation.
Brown	Decisive, determined, directs forwards solemnity, represents seriousness.
Green	Quietness, fertility, life, growth, nature, knowledge and belief. If exaggerated represents vulgarness and mockery.
Blue	Content, good will, honesty, flexibility, agreement and represents peace. Calms excitement and is soothing.
White	Symbol of unity and purity. Reflects the ideal of openness and transparence.
Black	Represents sorrow, grievance and quilt; symbolizes quietness, eternity or structural power.

The effects of colors on the dimensions of space ceiling, floor and walls can be summarized as follows:

High ceilings: They are perceived lower with warm colors and dark tones. Low ceilings look higher with cold colors and light color values.

Side walls: They look under apart with cold colors and light tones; warmer colors and darker tones bring them closer.

Opposite wall: Warmer colors and darker tones bring them closer; cold colors and darker tones push them further away.

Floors: Warm colors and darker tones make them look safe and closer while cold colors and soft tones represent cleanness and wider space effect (Özdemir, 2005, p.400) (Table 3.2).

Table 3.2. Spatial effects depending on color properties (Çetindağ, 2007, p.39).

	Warm color dark tone	Cold color dark tone	Warm color soft tone	Cold color soft tone
On ceilings	Gloomy Threatens	Covers and darkens	Emotional Pressure	Higher up
On walls	Encircles Embraces	Cold	Creates action	Cool directs
On floors	Strong Safe	Heavy	Lifts up, Elevates	Flat, Encourages running

There are rules which apply to the use of color in buildings of health. Colors used in specialized care and cure sections require ultimate attention. For example, yellow color is not proposed for immature children's care units because this complicates the determination of jaundice cases. Green has been used for a long time in operation units because green opposes better red blood stains (Dalke et.al., 2006, p.352).

The power of green color over red makes blood stains look less impressive. Not only operation halls but also the garments of doctors are therefore green.

Children after birth show indications of various illnesses and one of these is jaundice. To detect this color of the skin of babies need to be seen correctly. This is why a correct color needs to be chosen for such children's care units (Fig 3.6).

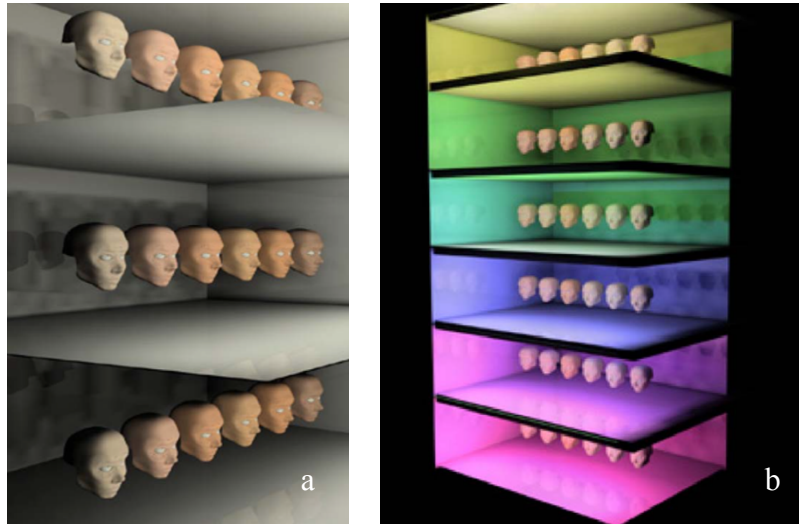


Figure 3.6. a, b. For skin color of patients and width of pigmentation a neutral grey is ideal for observation and evaluation. But this is not an attractive color for an interior (Dalke et.al., 2006).

Selecting a color for hospital clinic areas is not an easy task. The reason for this is the physical and psychological disturbances of patients. Patients turn inwards, loose self-confidence and physically tired. Colors chosen must help them recover from such conditions. But also, colors exiting people and creating sharp contrasts with saturated colors must also be avoided. By mixing white into sharp colors, color tones can be lowered and their effects diminished. If patients have to look at ceilings for a long time, such surfaces must be lightly colored. Otherwise, darker tones can encourage catastrophe in patients (Barışık, 2013).



Figure 3.7. a, b. Correct color selection for waiting areas, a. (<http://www.designmena.com/insight/samuel-creations-delivers-new-design-for-5-star-hospital-in-the-uae>, 06.2017), b. Florida Hospital For Women (<http://www.voa.com/website/images/projects/florida-hospital-for-women-030416/fhfw-030416-01.jpg>, 06.2017).

The colors used in hospital waiting areas should have soothing, calming and tear-dispersing effects. Doors of different sections of hospitals can be painted in different

colors. But red color must be avoided as it recalls blood. Different colors used in one space create different feelings in different people. Colors used on walls can evoke soothing or gloomy feelings. Certain colors have a “narrowing effect” which seems to bring walls closer. But the opposite effect can also be created by other colors (Barışık, 2013) (Figure 3.7).

3.4.2. Material Used

Visual impact, with their unique features, is created by materials used. But, besides their aesthetic value, materials also need to conform technical demands in design. When abundant choice and multiple effects are considered, choosing materials becomes significant.

Aesthetic value of materials may play a primary role for a designer. But their cost, durability and maintenance demands are other factors which need to be taken into account. (Poulin, M. C., & Aia, A, n.d.).

When materials are to be chosen for a hospital, first their physical suitability is taken into account. In other words, materials need to be safe, easily cleaned, and suitable for different uses and user types. If a material is appropriate in these respects, then visual quality can be considered. For example, in waiting halls, natural materials such as wood create a positive impact on tense and stressful patients (Erdemli et.al., 2012) (Figure 3.8).

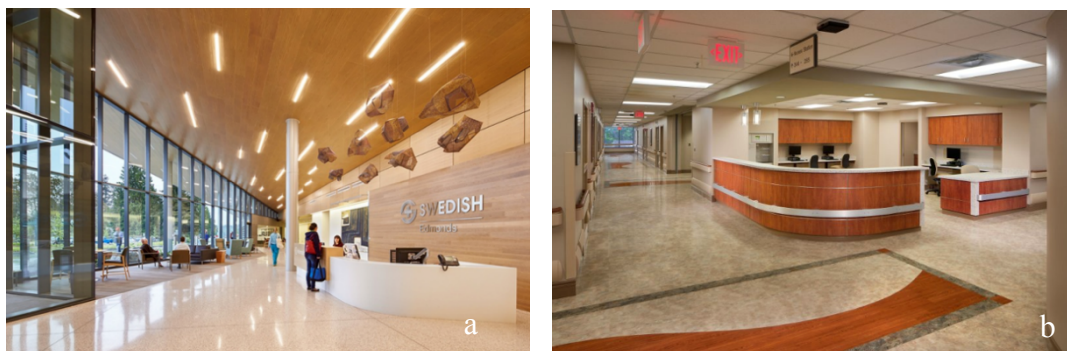


Figure 3.8. a, b. Use of wood in hospitals, a. Swedish Edmonds Medical Center (<http://www.swedish.org/locations/edmonds-campus>, 06.2017), b. St. David’s South Austin Medical Center (<http://www.gouldturner.com/assets/gallery/16/106.jpg>, 06.2017).

Interior designers reach a desired level of space formulation with the materials they select. These may be natural or artificial wood, plastics, glass, rock, metal or baked-earth. Each of these has different chemical, physical and mechanical characteristics.

But other factors such as color, texture and size must be considered. With all their features materials create an impression of depth, lightness, width, coldness, heat, hard or soft effects. For example, metals create an effect of coldness; but, a red color applied to it and a warm light above it can warm up this effect (Göler, 2009).

Some materials can create pseudo effects in perceiving spaces. For example, transparent and/or reflective materials, graphic images and mirrors can create such perception. The latter, by including human vision in space, fortify human-space relationships. This perception can be real or confusing (Gezer, 2012).

Creating a sterile space can be one of the main design objectives in a hospital environments. All materials in a hospital need to be anti-bacterial, durable, non-leaking and easy to clean. Special materials would be needed on floors, walls, ceilings and on doors and desks (Şahin, 2016). Besides their visual effects, materials in hospital interiors need certain technical qualities. Yet another selection criteria is that of their noise decreasing quality. Research has shown that noise pollution is detrimental for illnesses and that healing them requires longer periods of time. Designers therefore need to think of methods in decreasing noise (Ulrich, 2001).

Floor Coverings: Due to overuse floors of clinic waiting areas need to be covered with durable materials: non-slippery, antibacterial and easy-to-clean materials would be chosen. The degree of wear on materials is significant in that the greater the wear, the less would be materials antibacterial quality. Paying attention to sterility means greater use of chemicals used in cleaning. This increases the degree of wear and tear and thus materials need a higher degree of resistance to chemicals. Global and Turkish standards emphasize that floor materials be without joints and easy to clean. It is therefore now recommended that PVC is used instead of ceramic or marble. For easy and a more sterile cleaning wall-floor joints are made oval rather than perpendicular. Corners would also be rounded for the same purpose (Şahin, 2016) (Figure 3.9). Ceramics may also be used. This material can be washed or easily cleaned. But joints do create a problem. In addition, they absorb liquids and smell (Poulin vd., n.d.) (Figure 3.10).

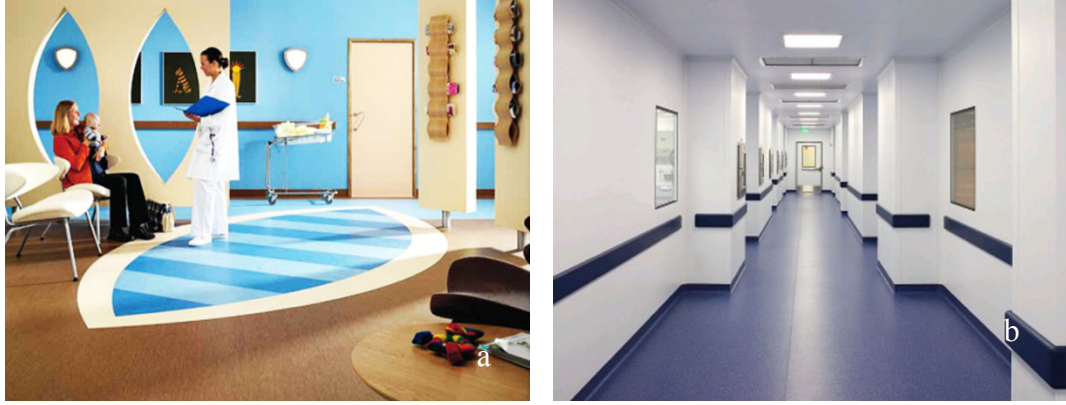


Figure 3.9. a, b. PVC floor covering, a. (<http://www.r2wykladzinyobiektove.pl/wp-content/uploads/2012/12/pcw4.jpg>, 06.2017), b. (<http://www.pvczeminkaplamam.com/wp-content/uploads/2016/03/pvc-400.jpg>, 05.2017).



Figure 3.10. a, b. Floor spaces covered by ceramics, a. (<http://www.brandcorpmena.com/segment-health-care/>, 06.2017), b. Aiyuhua Hospital for Children and Women, by HKS, (<http://wikoffdesignstudio.com/wp-content/uploads/2015/08/2.png>, 06.2017).

Carpeting is a safe material to use in that it prevents slipping. They also provide foot comfort, are noise absorbent and provide a warm atmosphere. But they are problematic in cleaning an infection control. Regulations therefore permit their use under specific circumstances. They are commonly used in children's play areas (Poulin vd., n.d.) (Figure 4.11).



Figure 3.11. a, b. Carpeting in a waiting area (Poulin, M. C., & Aia, A, n.d., 05.2017).

Wall Coverings: One of the main criteria in using materials is their inflammability and the degree of fume formation. The expansion of flames and/or the degree of burning are indicated by standards based on laboratory tests. These show, how fast a material burns, how fire spreads and level of smoke content (Şahin, 2016).

Other selection criteria are easiness in cleaning and cost of maintenance. Vinyl wall covers are frequently preferred. This material is resistant to spots, resists damages better, is easy to clean and requires little maintenance. Paints are also preferred in hospitals. But correct type of paint must be chosen for each space at hand. Where there is a high degree of dampness, paints need to be washable. High gloss paints have advantages as well as disadvantages. High level of shine eases cleaning but may disrupt perception. They resist detrimental effects better. Of the two types of paint the latex group (water based paints) are resistant, dry fast, easy to clean, and easy to apply. The other group refers to ‘alkyd paints’ which are oil based. The main point in a correct implementation is the correct preparation of the wall. The surface of walls must be clean, smooth, damp free and treated with a base coating before painting (Poulin, M. C., & Aia, A, n.d.) (Figure 3.12).



Figure 3.12. a. Vinyl flooring (Poulin, M. C., & Aia, A, n.d.), b. Paint covered wall, Masonic Children’s Hospital in Minneapolis (<https://s-media-cache-ak0.pinimg.com/564x/53/21/83/53218305f3e4e603d32c89fb426db3f2.jpg>, 06.2017).

Covering walls with tissue (or cloth) is rarely used. Not that it costs more than others, but also because sewing and implementation is complicated and long. Damp absorbing quality of a material would also be taken into account as well as its effects on health. Wall covering may create mold due to dampness (Poulin vd., n.d.).

Ceiling Materials: These should resist water, be easy to clean and antibacterial. Usually suspended ceilings are preferred as they allow ease the laying of certain infrastructure and their maintenance (Figure 3.13)

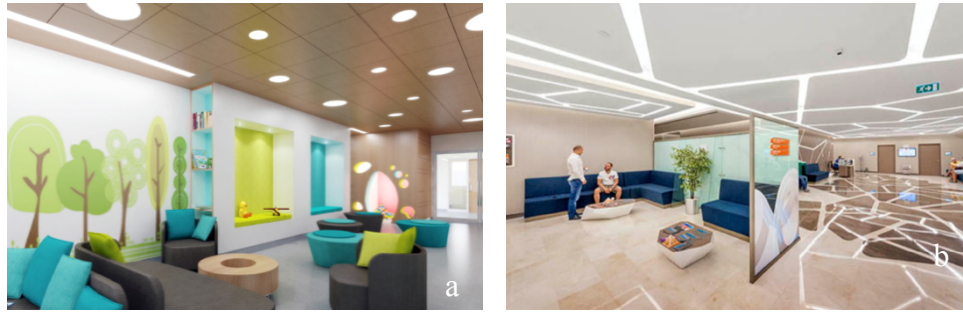


Figure 3.13. a, b. Ceiling design in hospitals, a. (<http://www.parkin.ca/blog/institutional-design-for-women-and-children-healthcare-facilities/>, 06.2017), b. Liv Hospital, İstanbul (<http://www.livhospital.com/>, 06.2017).

3.4.3. Furniture

The selection and design of furniture is an important factor in preparing interior design projects. If they are unfitting the waiting area furniture will make a space look insufficient. Certain criteria are employed in selecting furniture: the profile of users; function of that space; correct choice of color and material; proper size of objects; easy to clean and maintain and appropriate price. Thus, furniture can take special forms. For example, in chemotherapy of cancer pains furniture should suit patients and help them calm down. In the children's illnesses section color, size, form and materials of furniture should be suitable for children. Ergonomics and furniture size are important elements in making a choice (Poulin vd., n.d.) (Figure 3.14).

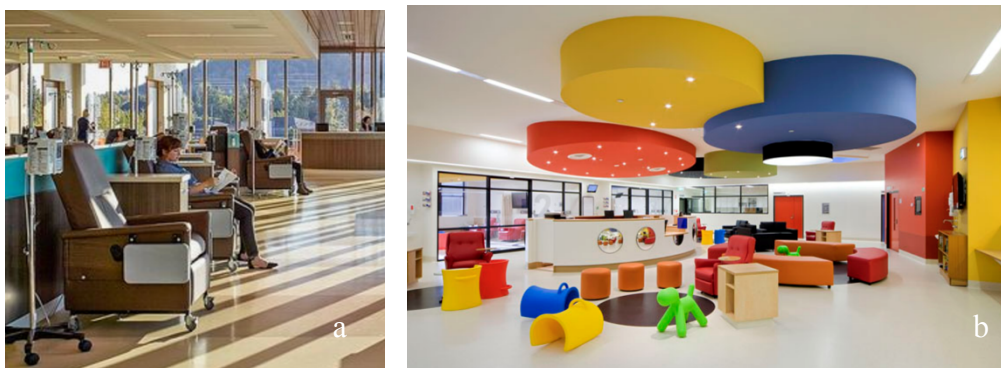


Figure 3.14. a. Centre for Cancer Treatment (<https://tr.pinterest.com/pin/248120260696617317/>, 06.2017), b. Children clinic (<https://s-media-cache-ak0.pinimg.com/originals/84/f2/ad/84f2ad71d9bc0f8013486f47d30a4587.jpg>, 06.2017).

Selection of Furniture: In the interior design of waiting areas fixed, moveable and furniture with wheels need to be taken into account in terms of their size.

User needs would also be considered in selecting furniture. Some other criteria can be noted as below (Poulin vd., n.d.):

- Proper size: Height, width and depth of sitting area and hand-rest height must be looked at. Armrests must resist users' weight and extend till the front of the chair. Armchair height must be a little higher than normal armchairs and firmly stable.
- Density and firmness: Cushions must back up the user, not be too hard or too soft to sink in.
- Upholstery: Linen chosen must be natural, feeling comfortable, non-stainable and waterproof. This can be leather or polyurethane vinyl if the cost is to be low. These two materials are proposed in areas where user density is high. If user are patients there should be a gap between the back piece and the cushion for easy cleaning (Figure 3.15).
- Correct weight: Furniture to be placed in waiting areas or patient rooms with multiple functions and flexibility, such as stackable chairs, need to be light enough for staff and visitors to move while still providing a safe stable frame with arms that will not tip over easily.
- Suitability to standards: Armchairs used in health services need to comply with local and national standards which relate to fire resistance, fire distribution and smoke production.

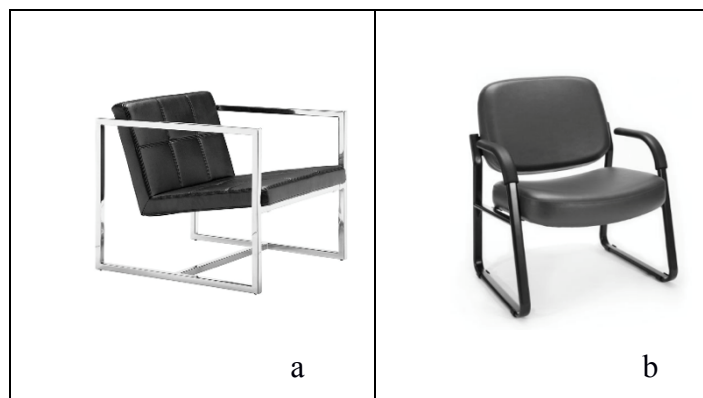


Figure 3.15. a. Anti-bacterial leather upholstery (<https://www.eurway.com/carbon-chair-modern-lounge-chairs.html>, 06.2017), b. Vinyl covered armchair (<https://www.eofficedirect.com/products/big-tall-anti-microbial-anti-bacterial-vinyl-guest-reception-chair-with-arms.html>, 06.2017).

Placing & Furniture: Positioning of furniture can deter or encourage social contact. Placing units as to permit alternative arrangements and to increase eye contact is favorable (Evans & McCoy, 1998).

Spatial proximity is related to how users shape their environment and limits of social contact between people. It has been observed that seats gathered around a coffee table or those located to encourage eye contact are efficient in socializing people. Seats put side by side in a waiting area has been found to decrease social contact (Altman, 1975) (Figure 3.16).

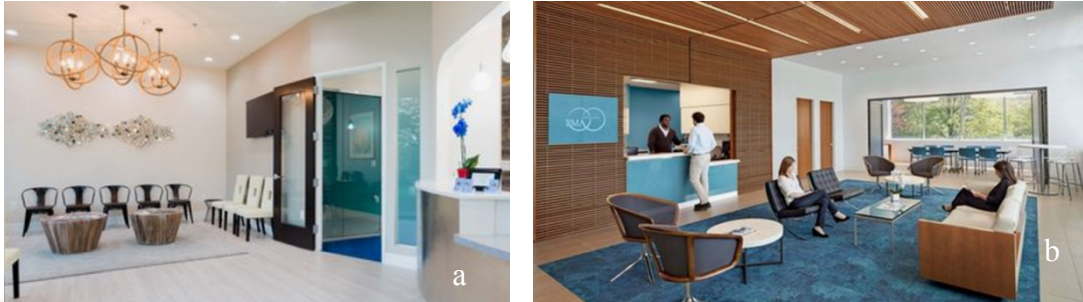


Figure 3.16. a. Positioning furniture which affects social contact negatively (<https://tr.pinterest.com/pin/48385553697040895/>, 06.2017), b. Positioning furniture which affects social contact positively (<https://tr.pinterest.com/pin/91901648625778833/>, 06.2017).

3.4.4. Lighting/Visual Comfort

It is light which enables objects to be seen. Sources of light are the sun, the moon and various artificial methods. Light does not illuminate all sides of an object; areas closer to the source are lit more clearly than far-away sections. The sections between the clears and darkest parts indicate the real color of the object. The effect of light and shade bring out the third dimension of objects (Çetindağ, 2007).

In order to see better and to protect our optical health requires correct lighting design. The effectiveness of a work also increases if we see better. Seeing better also increases human psychology positively as in such a place people feel safe and happy. There are two types of lighting; first is provided by natural methods and the second by artificial (Göler, 2009).

The lighting of a space is achieved by an ideal combination of natural and artificial light. This also represents energy efficiency. Lighting equipment is place according to user needs and the function of that space. This represents control of lighting (Artuncu, 2009).

Types of Lighting: Normal light is provided by the sun during the day and by the moon at night. Sun light changes according to hours, days, seasons and geographical location. Moonlight dispenses various tones of color and real form of objects appear. But it may be difficult to use moonlight as it is sensitive to light coming from highly

lit areas (Çetindağ, 2007). Since sunlight exists outside buildings, making use of it inside requires that sufficient openings are created on the shell. These are windows and/or roof openings. The degree of light is assessed according to function and sizes of windows decided accordingly (Göler, 2009) (Figure 3.17).



Figure 3.17. a. Natural lighting, Pantheon, Rome (<https://gezipgordum.com/wp-content/uploads/Pantheon-Oculus-2.jpg>, 06.2017) , b. Moon lighting (<http://kolokyum.com/files/gallerythumbnails/3bb78e01c327535ec8d825d9477d6522.jpg>, 06.2017).

Artificial lighting is used in interiors when daylight is insufficient. Its source is the lightbulb. It is a matter of design and engineering. In order to prepare a good project all technical criteria of lighting must be known (Göler, 2009).

Artificial lighting elements are used according to a plan prepared by the designer. In such a plan many sources of light are used together according to user needs. The organization of lighting is controlled by a system (Altuncu, 2009).

Artificial lighting is of two types: general and regional (or partial). In designing any of these, source of light and type of lighting needs to be determined. The aim in general lighting is to enable people to see properly and with all characteristics of objects. The aim here is to provide same level of lighting within all the space. The simple lightbulb, hanging in the center of a room is a typical example of general lighting. Regional lighting is done at a specific location. It aims to draw attention and therefore lights certain details of objects and/or spaces. The quality and quantity of regional lighting is defined and determined by the user. It lights up only a section of a space (Göler, 2009) (Figure 3.18).



Figure 3.18. a. General lighting, b. Regional lighting, Florida Hospital for Women (<http://www.orlandosentinel.com/health/vital-signs/os-florida-hospital-for-women-nears-opening-20160107-post.html>, 06.2017).

The lighting of a space is related to its functions. Therefore, before preparing a lighting plan, the function of a space need to be known. The characteristics of lighting will depend on these uses or functions (Göler, 2009).

Lighting in Hospitals: Lighting is significant in that is not only provides light for a specific purpose, but is also an element is creating aesthetics in space. This effect is called “intangible effect of light” and affects human psychology significantly. Abundant research has been carried out in this field. Light affects periodically calling depressions, increasing worker performance at nights and in regulating brain activities. In hospitals, good lighting positively affects patient psychology and may shorten the period of recovery (Altuncu, 2009).

Lighting in hospitals would cater for user comfort and safety as well as for seeing well. In the Turkish legislative standards have been set for different sections of hospitals. It is mentioned that patient bedrooms must receive direct and sufficient daylight. Legislation does not mention design, but rather efficient use and care. Power of light changes according to the sections of a hospital. Especially operation hells and diagnoses rooms need attention (Barışık, 2013) (Figure 3.19).

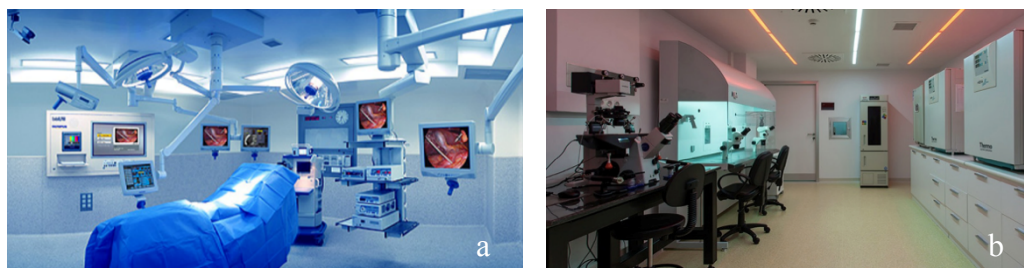


Figure 3.19. a, b. Different lighting design in special units, a. (<http://hospitalarquitetura.com.br/images/itmedico/salacirurgica.jpg>, 06.2017), b. (<https://gergitavanistanbul.files.wordpress.com/2014/09/gergi-tavan-hastanede-uygulanmasc4b>, 06.2017).

Lighting in clinics: Lighting is one of the most important elements in designing waiting halls. A well-lit space decreases stress and anxiety created in patients whereas poorly lit places produce additional stress.

Many research indicates that lack of windows in hospital waiting halls creates psychological problems. Legislation demands the need for access to natural light, views of landscapes and fresh air.

According to research conducted by Başkaya, Yıldırım & Muslu, %74 of users of waiting halls in İbn-i Sina Hospital demanded natural light. Surveys have indicated that natural light increases user satisfaction (Erdemli, 2012) (Fig 3.20).



Figure 3.20. a, b. Lighting design in waiting areas, Healthcare Montefiore Medical Center (<http://www.montefiore.org/>, 06.2017).

Correct lighting in diagnosis rooms of doctors is crucial as poorly lit spaces may lead to mistakes in visual diagnosis. In waiting halls, as well as other circulation spaces, correct lighting is achieved by striking a balance between natural & artificial light. Correct lighting may decrease stress experienced by patients and people accompanying them and increase the quality of perception (Barışık, 2013).

3.4.5. Acoustic/Auditorial Comfort

One of the best methods of communication is by speaking. People let others know of their feelings, knowledge and problems by speaking to them. In all places where people talk, auditory perception and comfort becomes important. Auditory comfort is among the criteria which defines user satisfaction in any one space. Where this comfort cannot be provided and that noise level not kept at an acceptable level, human health can be endangered physically and psychologically. Acoustic comfort represents auditory conditions required by active or passive conditions of users. If high and irritating noise levels exist and if it momentary and/or continuous noise can cause

disorders. There are several sources of noise within or outside buildings. Outside noises can be controlled by placing and glass types of windows. Interior noises are created by different functions, machinery and equipment and those created by men. The widest type of noises those created by users consciously or otherwise (Barışık, 2013).

The reflection and echoing of noise creates different effects on those who perceive it. A long reflection of a noise in a particular space may end up perceiving it as small. Type and texture of materials used in any space affect level of noise heard. Objects in front of a diffusing noise shadows that noise. Objects put outside buildings and the source of that noise provide a noise barrier and decreases its negative effects (Göler, 2009).

Acoustic Comfort in Hospitals: One of the most important factors creating stress in hospitals is noise, when patients lie in their beds doctors and nurses who wander about, aching patients and discussions of visitors irritate patients and create stress. Acceptable level of noise has been recommended as 35 decibels by many researchers. But observations have shown that this figure is about 45-65 decibels (Ulrich, 1991).

Correct level of auditory comfort is one of the criteria in soothing patients. Patients are generally sensitive to noise because of their pains and insufficiency in controlling it. But too quiet spaces may increase fear and anxiety. Like other three space elements, correct acoustic comfort can affect the healing period of patients.

The regulations set by the Ministry of Health has indicated standards related to noise levels. The best way to achieve this is to use noise-absorbing materials on the floors, walls and ceilings of hospitals. One of the areas where acoustic control is essential is the waiting halls of clinics. This is because they are generally very crowded. Lack of noise control creates the feeling that other interior elements have also been incorrectly used. Due to their high density of use, the Ministry has specified that acoustic isolation of waiting halls is necessary (Erdemli, 2012).

One study has proposed that in order for prevent shoe-heel noises and its dispersion, anti-bacterial carpeting should be used. They have also proposed a library (bookshelves) in order to indicate that people should be quiet. Standards can be achieved by masking noise generators and/or by using building materials which help acoustic control (Zoom TPU archive, 2008).

Olds & Daniel have made several proposals which help acoustic control in clinic waiting areas:

- Acoustic tiles, curtains and tissue covered furniture which absorb noise;
- Windows which prevent entry of noise;
- Correct covering of interior walls;
- Noise and vibration control of mechanical systems used in buildings;
- To provide air-tight barriers between spaces which prevent noise transfers;
- Playing of soft music which will not hinder communication between people and which help the healing process and
- To use materials of different height (ceilings and furniture) in order to prevent echoing of noise and to use noise absorbing surfaces (Olds & Daniel, 1987).

Noise masking methods can also minimize noise levels in waiting halls:

- Masking methods can increase privacy in conversation. This is a process by which unwanted noises are prevented by other noises created at the background. This can be achieved if the second source of noise creates a higher decibel level. The background noise can be achieved by playing music;
- To design a separate waiting hall for each clinic and to divide them by using noise absorbing panels;
- To prevent noise generation by making continuous maintenance of materials used in interiors;
- Correct selection of furniture and mobile equipment such as wheelchairs and food transportation equipment and;
- To install bookshelves in waiting areas in order to warn people that they have to remain quiet (Armstrong Ceiling System, 2003).

3.4.6. Ventilation

The history of ventilation goes back to the beginning of the 18th century. The first ventilation theory, named Miasma, was developed for a hospital used in fighting contagious diseases. In this system, channels were opened to chimneys piercing the roof. Thus, anything that carries a disease to others were exhausted outside before reaching to other people.

The system was further developed by engineers in time. Natural ventilation was also used during the Ottoman period. Süleymaniye mosque is one of the buildings where the system was used by Sinan the architect (Bulgurcu, 2015) (Figure 3.21).

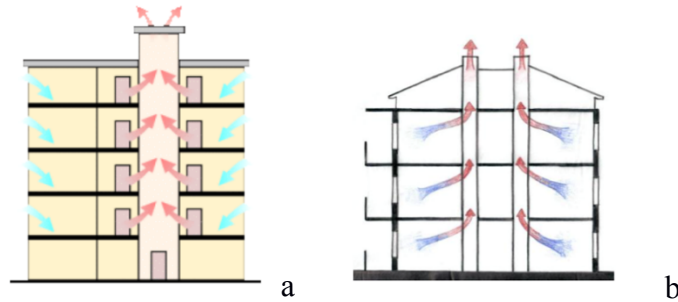


Figure 3.21. a, b. Air ventilation by using chimneys (Bulgurcu, 2015)

Ventilation is one of the factors which affect quality of interiors and is examined under the heading of “controlling interior atmosphere”. This heading also includes the controlling of dust, odors, humidity and quality of air (Dikmen, 2012).

Degree of temperature and cleanness of air are primary factors. People breathing, sweating and dissipating warmth and smells create the need for ventilation. Some conditions must be met in achieving successful ventilation: entry of clean air, not to have drafts which irritate people, the collection and dispersal of air by the system and a quiet functioning in systems using ventilators (Bulgurcu, 2015) (Figure 3.22).

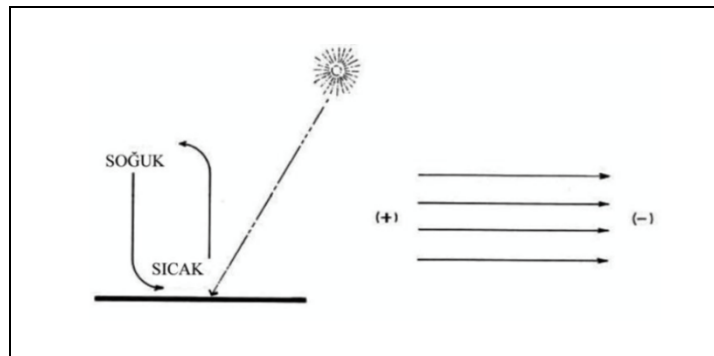


Figure 3.22. The creation of air movement due to natural convection and changes in pressure (Bulgurcu, 2015).

In ventilating a building a natural, mechanical or a combination of these can be used. The most economical and environmentally acceptable system is the first where air is cleaned and oxygen provided by natural circulation. This necessitates intake of fresh and clean air and the exhaust of dirty air. The system is directly related to the building; its form, plan, location and the correct placement of voids so that circulation evolves

in a system. If this is provided and used correctly, it represents a healthy system, low energy consumption, non-polluting energy use, and which does not increase investment and user costs. The second system is mechanical ventilation. Movement of air in this system is provided by ventilators. The last method involves a combination of the two former systems. In this, the flow of air depends on natural forces and when natural ventilation falls below the desired level, mechanical pumping enters the system (Darcin, 2012, p.41).

Ventilation in Hospitals: Artificial ventilation in hospitals is provided by air conditioners. The equipment used in hospitals are different due to special reasons. There are certain dangers which await patients and personal alike. To get rid of them means the provision of climatic conditions. Besides clinical needs, the sustainability of hygienic conditions is important. Therefore, hospital ventilation must be provided carefully and consciously. Different parts of a hospital need their own ventilation systems. The ventilation of special units need their individual systems: operation surgery halls, emergency units, isolation rooms with high pressure as well as negative pressure rooms. Besides providing heating, cooling and ventilation, the system must prevent contagious infection transfer and meet toxicological needs (IX. National Plumbing Engineering Congress, n.d., p.1207).

Since accumulation of gases along the air circulation units increase, filtration may be insufficient in cleaning the air. Consequently, a position of the polluted air must be changed with fresh and clean air coming from the outside. In order to prevent nosocomial infections, filtration in hospital ventilation systems becomes essential. Hospital ventilation systems have two different filtration methods. One of these is efficient at 30% and/or more. The other must be 90% and/or more. Certain filtering systems can hold up 99,97 % of the particles. Due to its high efficiency it is installed in orthopedic surgery halls and immunosuppressive patients' bedrooms (Doğanay & Ünal, 2003, p.400).

Hospitals are evaluated as regards their different sections vis-a-vis international standards. DIN 1946/4 standards consider administrative, financial, management offices and non-care offices outside its standards. All of the other spaces (or units) are considered under Class 1 or Class 2. The spaces listed under the first are required to have a high degree of micro-organism free conditions. Class 2 has been evaluated as areas free of microorganisms under normal conditions. Here the need of Class 2 offices are, in many ways, the same as classic comfort conditions. In Class 2 areas a minimum

of two level filtration is required. Class 1 areas are named as clean and DIN 24184 & DIN 24185 areas require a minimum of three level filtration in their air conditioning systems. In such air conditioning systems 1 level EU-4 is required. This figure is EU-7 at second level and higher levels at EU-12 or upper classes. The flow of air must be provided hygienically superior places towards those which demand less care (Özel & Hançer 2005).

Clinical waiting areas are considered under Class 2 spaces. This means that such places must be free of irritating odors, temperature level always adjusted and that sufficient ventilation is provided. Medicines, cleaning materials, medical rubbish and the own smells of kitchens and air conditioning can cause disturbance. But certain measures are to be taken for odor control. If standardized equipment are used in ventilation; if their maintenance is periodically made; if measurements of particles are regularly and frequently made this is very useful. Also, natural ventilation is provided in patient rooms, doctor and diagnosis rooms, nurse stations and dining halls this too is very correct. Such precautions can be taken by correct orientation of buildings with respect to the sun and the winds; giving consideration to clean air and natural lighting in hospital design. This also requires the correct placing of lifts used in transferring food vertically (Özel & Hançer, 2005).

3.4.7. Elements Diminishing Stress

Illnesses, besides physical disorders, create fear, anxiety, tension and stress. Such feelings prolong the recovery period of ill people. Abundant research indicates that psychological disorders and stress of patients can even prohibit recovery from an illness (Poulin, n.d.). There is generally two sources of stress: physical problems and pains created by medical intervention. Yet a third source can be of environmental noise pollution, lack of privacy, bright color or strong odors. Environmental stimuli of low levels can lead to boredom and depression (Ulrich, 1991).

Not knowing the procedures of curing or lack of information can also increase the stress of patients and/or people accompanying them. This increases the actual period of waiting. Therefore, informing users of waiting areas can create positive consequences (Erdemli, 2012). There is a delicate line between the positive and/or negative effects of factors which disperse our attention. An incorrectly arranged system would create its negative consequences. If such factors are not controllable by the patients, they will possibly create negative effects (Ulrich, 1991).

Waiting areas are for long and difficult hours of stay under tense conditions. In order to diffuse concentration, calm people down and provide them with a comfortable medium requires certain criteria (Erdemli, 2012). It is also possible to create a positive energy space and decrease patients stress by placing artifacts, use of nature and music. In addition, TV screens, brochures and newspaper placed in waiting halls help in distributing users stress. Social support of other people also help users in a foreign and stressful environment (Andrade & Devlin, 2015).

Artifacts: Research has shown that correctly chosen works of art speed up the healing of patients and positively affect their psychology. Appropriate artifacts can diminish pain, decrease blood pressure, mitigate the need for painkillers and bring peace to those in waiting halls. Since such objects cannot be easily changed, care is needed in choosing them. The following create a peaceful environment and are stress free: flowers, landscapes, pictures of water and figurative pictures. But undefined and/or emotionally disturbing pictures may create undesirable effects on patients (Erdemli, 2012) (Figure 3.23).

Natural Elements: These are among the most efficient of factors which decrease stress as natural environments and/or feelings which contribute to recovery of illnesses. Green spaces outside hospitals create two positive effects: they give the health personnel a chance to relax and provide patients and people accompanying them an attractive landscape. The following methods may be employed for this purpose: dynamic use of daylight, visual and acoustic reach to water elements, emotional attachment to nature and fundamental natural forms. It is evident that where access to a natural environment is impossible daylight can be actively used by windows facing the exterior (Poulin, n.d.) (Figure 3.24).



Figure 3.23. Use of artifacts in waiting halls, a. Pediatricians office (<http://rodican.com/wp-content/uploads/2013/05/Wonderful-Natural-Modern-Pediatrician-Office-Design-Floral-Green-Atmosphere.jpg> , 06.2017), b. T. Denny Stanford Pediatric Center (<https://schulershook.com/projects/pediatric-clinic>, 06.2017).



Figure 3.24. Use of natural elements in waiting halls, a. (<https://www.mskcc.org/sites/default/files/styles/large/public/node/35562/images/mo-nmouth-interior.jpg>, 06.2017), b. Lancaster General Health Ann B. Brashinger Cancer Institute (<https://s-media-cache-ak0.pining.com/originals/91/cb/9c/91cb9c33181bfb5afd301e40fcab6164.jpg>, 06.2017).



Figure 3.25. Stress decreasing features in waiting halls, a. Victoria's New Royal Children's Hospital (<https://s-media-cache-ak0.pining.com/originals/f0/37/04/f0370461733d2a046ca2266939f45a14.jpg>, 06.2017), b. Nationwide Children's Hospital (<https://s-media-cache-ak0.pining.com/originals/0b/83/49/0b8349330f70f5446098b03fcce883a1.jpg>, 06.2017).

Elements having a different type of natural feeling can also decrease stress significantly. For example, an aquarium in a waiting hall may serve this purpose (Erdemli, 2012) (Figure 3.25).

Music: In eradicating negative feelings and in decreasing stress, music is a useful tool. It disperses concentration by eliminating undesirable feelings. But the type of music to be played must be selected. Classical music has the same effects as tablets and help people to calm down (Erdemli, 2012).

CHAPTER FOUR

CASE STUDY

Clinic waiting areas of two hospitals were taken as the basis of this proof-oriented research. The first is the Çeşme State Hospital and the second Tire State Hospital. In terms of their architectural design and their patient handling capacity they show differences. But they were chosen due to similarities between them, which do exist in other hospitals: Both are state hospitals, both appear in the general category of hospitals and that they have been renovated after 2010. This study looked into the degree of suitability of interior spaces of clinic waiting areas, level of user satisfaction and expectations for the future. The techniques used have been that of literature survey observations, consultations, photographs and an interview survey of users.

First, written documents, literature, past research and the legal framework was studied. On spot observations were made as regards: interior objects, relationship of the waiting area with its surrounding, space-user relationship of waiting areas and expectations of users of waiting areas. Photographs were taken and the quality and quantity of spaces have been examined. Problems and parameters of importance were determined after the assumptions which appeared after the first round.

The survey questions were thus formulated. The survey comprised of five pre-survey questions and 33 other questions. Different criteria were employed in formulating the questions in order to cater for users showing different characteristics.

The first section of the survey is comprised of five questions in order to highlight user characteristics: reason for being in the waiting hall, gender, age and state of health. These define who the interviewees are and the type of users. First section of the survey (Questions 1 to 6) are related to way-finding, whether chaos has been lived in waiting lists and the location and atmosphere expectations of users. In the second section, user satisfaction and expectations from colors and materials were measured.

The third asks users about furniture, colors, materials and layout plan. These questions assess present conditions as well as future expectations. These are followed by questions related to lighting, acoustics, and suitability of artifacts present at the interior

and nature-space relationships of the waiting areas. People were also asked to identify their expectations. This survey has not only highlighted user evaluations but also their level of satisfaction from the spaces studied.

4.1. Çeşme State Hospital

The 2016 population of the district is 40.312 persons. It is 80 km to Izmir. Its State Hospital came into service in May 2015. With the equipment of new technology purchased lately, numbers of patients have considerably increased. While 125.000 persons were cared for in 2009, this number increased to 155.000 in 2010. This hospital has 75 beds. The numbers of patients vary acutely during the summer and winter months. The intensity of use of the summers diminish during other seasons (Personal contact with Hospital Management, 26.02.16).



Figure 4.1. Exterior view of Çeşme State Hospital (YU, BAP048 no. archive archive, 2017)

4.1.1. Clinics

The hospital has a total of 19 clinics. With the exception of dental clinic, all other clinics have only one common waiting area. While daily average of patients is 600 during winter months, it can increase up to 1200 in the summers. This study has accepted an average of 900 person per day.

The clinics of the hospital are: Infectious Diseases, Internal Diseases (1-2); Otorhinolaryngology, Pediatrics, Ophthalmology, General Surgery (1-2), Orthopedics and Traumatology (1-2-3) Anesthesiology, Dental and Psychiatric Clinics.

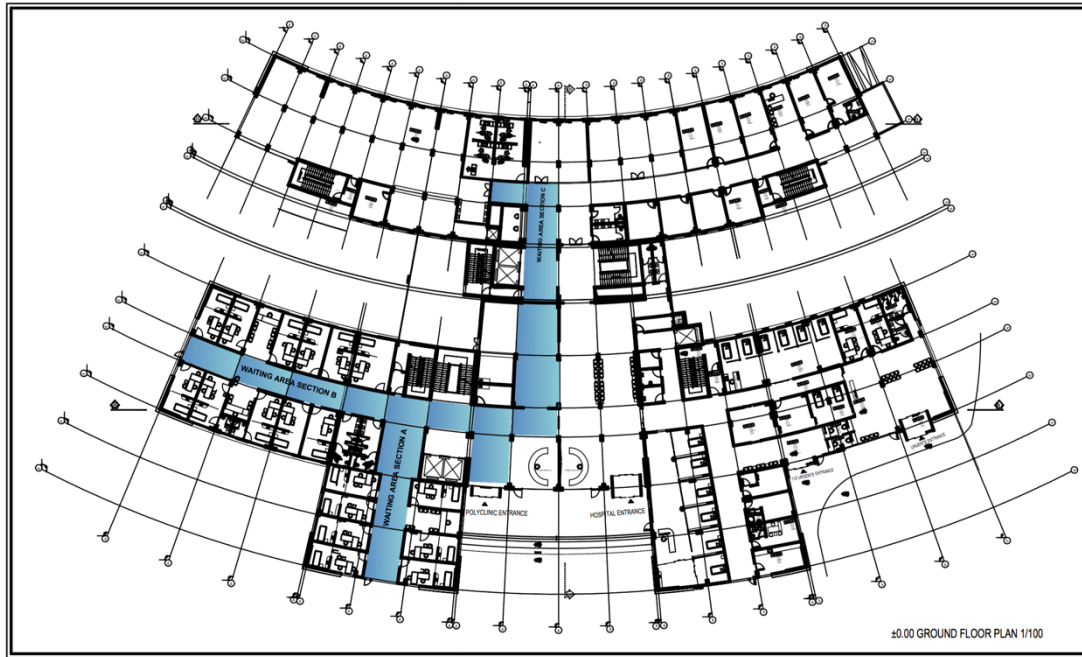


Figure 4.2. Ground Floor Plan of Çeşme State Hospital (Min. of Health, İzmir Directorate, Dept. of Investments archive).



Figure 4.3. a, b. Clinics of Çeşme State Hospital (Personal archive, 2017).

4.1.2. Waiting Area

Hospitals face a variety of user types. Four types of users are identified: outpatients, inpatients (bed occupying), visitors and the medical personnel. Outpatients are examined and treated while present at the hospital. They do not occupy beds and use only the clinics and diagnosis sections. Inpatients occupy beds are cared for within the premises. Visitors are those people who come to see their friends and relatives who are ill. Their stay is temporary. The personnel comprise of people working for medical, service and management purposes (Karakaşlı, 2010).

Çeşme State Hospital has a total of 4 floors: basement, ground floor level and two other floors. It has four entrances: hospital, clinics, emergency and 112 urgently. All are located on the ground floor. Outpatients and visitors use the general and clinic entrances. All clinics of the hospital are located on the ground floor and grouped

together. Only the dental clinic is separately placed. Clinics of the hospital have been indicated under the headings of A, B and C (Fig. 4.4).

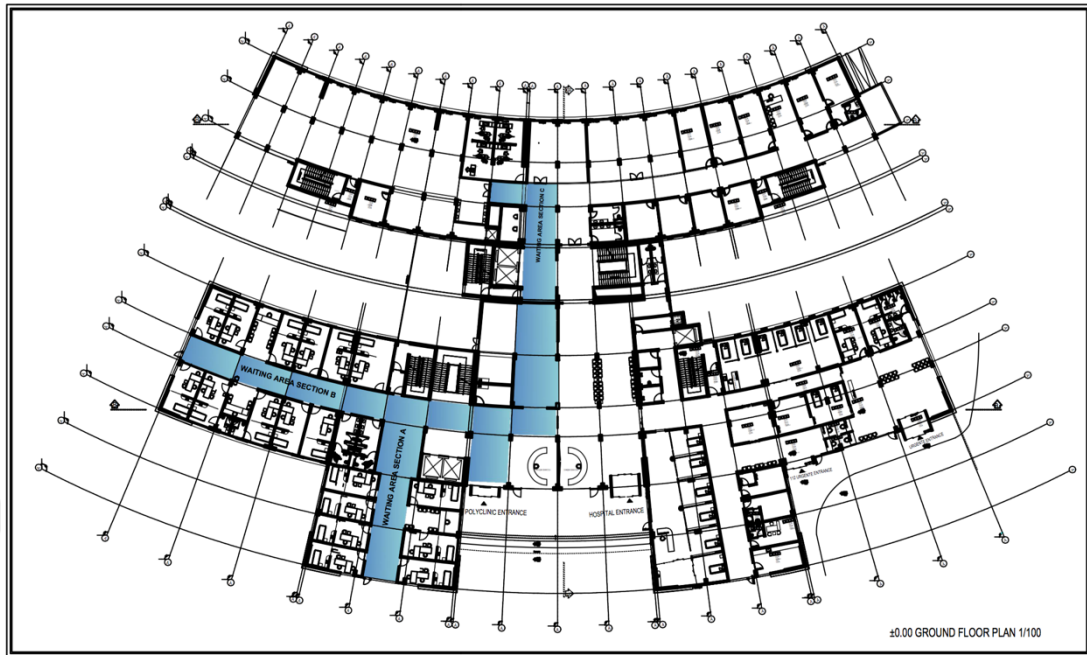


Figure 4.4. Çeşme State Hospital ground floor plan (Min. of Health).



Figure 4.5. Waiting area of clinics- sections A, B (Min. of Health).

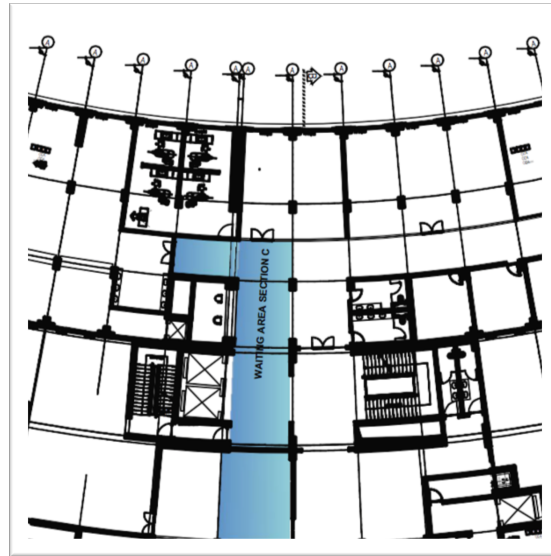


Figure 4.6. Waiting area of clinics- section C (Min. of Health).

The waiting area of all clinics is at one location and corridor. In section A, Ophthalmology, General Surgery, Internal Diseases, Psychiatric, Orthopedics and Traumatology clinics are grouped. The waiting area is common and a secretary desk is provided (Figure 4.7).



Figure 4.7. a, b. Clinics waiting area-A (Personal archive, 2017).



Figure 4.8. a, b. Clinics waiting area-A, Orthopedics and Traumatology Section (Personal archive, 2017).

Other clinics have been placed in waiting zone B, at the extension of the same corridor. This zone includes Infectious Diseases, Anesthesiology, Gynecology and Obstetrics, Dermatology, Otorhinolaryngology, Urology and Pediatrics Clinics (Figure 4.8).



Figure 4.9. a, b. Çeşme State Hospital Clinics waiting area-B (Personal archive, 2017).



Figure 4.10. a, b. Çeşme State Hospital Clinics waiting area-B, a. Secretariat of Pediatric Clinic, b. Secretariat of Gynecology and Obstetrics Clinic (Personal archive, 2017).

Waiting area B has two secretary desks serving Pediatric and Gynecology and Obstetrics clinics. The waiting area is the corridor itself (Fig 4.10).

The only individually placed clinic is that of the Dental section. It has a secretariat and waiting area of its own. Its patients use the entrance of the clinics. Other clinics use a different circulation area in reaching this section (Fig. 4.11).



Figure 4.11. a, b, c, d. Waiting Hall of Dental Clinic -C, (Personal archive, 2017).

4.2. Tire State Hospital

Tire is one of the 30 districts of Izmir province and located at a distance of 80 km to central İzmir. The districts population was 82,102 people in 2015 (TUIK data) The first health facility in Tire was provided many years ago. Şanizade Atullah Efendi, who was exiled to this city by the emperor Mahmut II, formed the first thoughts of a hospital in 1826. In the same year, a small house, located next to the courtyard of YeniCami, started providing health services for the first time. But when the need for a bigger facility appeared the property of today's hospital was purchased, the building altered and renovated and the health service transferred here. In 1924, the building was converted into a State Hospital. Between 1924 and 1955, it continued to serve as the Municipal Hospital and its management transferred to the Ministry of Health in the latter date (<http://tiredh.saglik.gov.tr/>).

Hospital's bed capacity was 100 in 1986. Until 1992 existing units continued to serve the city. But it was renovated, due to lack of physical premises.

All services and clinics have been modernized and a new building built for urgent cases. Tire Hospital was re-handled as from 1995 onwards, and furnished with modern equipment, more developed and rapid materials and care units.

After its unification with the Tire SSK (Social Security Institution) Hospital in 2005, the hospital's bed capacity increased to 150. The annex building taken over from SSK has the following units: Pediatrics; Gynecology and Obstetrics and Hemodialysis. The new block added to the main building has laboratories, clinics and specially designed rooms. ISO 9001-200 Quality certificate works have been initiated in January 2006. Tire State Hospital was designed by architect Fatih Kart. It is in this direction that the hospital continues to serve the public (<http://tiredh.saglik.gov.tr/>).



Figure 4.12. Exterior view of Tire State Hospital (Y.U., BAP048 no. archive, 2017).

4.2.1. Clinics

These has been located on three different floors. They have a common entry point. People visiting the clinics use the gate of the clinics. Patient who call at the hospital find their area of specialization on the information panels placed on each floor.

Tire State Hospital uses an e-prescription system and no paper documents. The appointment system can be operated using to internet, an automated card system or by way of secretaries located inside and outside premises. Patient registrations star at 8:00 o'clock. Doctors are at their clinic services between 9:00-12:00 and 13:30-16:00 hours (Hospital Directorate). This hospital contains 22 different clinics and branches: Internal Diseases, Cardiology, Neurosurgery, Physiotherapy, Neurology, Urology, Pediatrics, Pulmonology, Aesthetic, Plastic Surgery, Infectious Diseases, Gynecology and Obstetrics, Otorhinolaryngology, Psychiatry, Orthopedics and Traumatology, Pediatrics, Ophthalmology, Dental, Cardiovascular Surgery, Dermatology, Gastroenterology and General Surgery (Fig 4.14).

4.2.2. Waiting Areas

These have been organized separately according to grouping of different branches. Each clinic has an individual secretary office and doctor(s) rooms. Waiting areas have a capacity of 1500-1600 persons in total (Personal contact with Fatih Hayali, 19.02.16).

The first clinic section is located next to the entrance of the clinics located on the ground floor. These clinics are: Internal Diseases, Orthopedics and Traumatology, Pediatrics, Cardiovascular Surgery, Cardiology and Gastroenterology.



Figure 4.15. Tire State Hospital ground floor waiting areas (Hospital Directorate).



Figure 4.16. a, b. Clinic units of the ground floor, Tire State Hospital (Personal archive, 2017).



Figure 4.17. a, b. Pediatrics Clinic, Tire State Hospital (Personal archive, 2017).

Yet other clinics are located on the first floor: Neurology, Ophthalmology, Otorhinolaryngology, Neurosurgery, Psychiatry and Aesthetic (Figure 4.18).



Figure 4.18. Waiting areas of the first floor, Tire State Hospital (Hospital Directorate).



Figure 4.19. a, b. Clinics of the second floor, Tire State Hospital (Personal archive, 2017).



Figure 4.20. a, b. Women's illnesses and Birth Clinic:
Secretary's office and waiting hall, Tire State Hospital (Personal archive, 2017).



CHAPTER FIVE

ANALYSIS OF WAITING AREAS

This study, the internal quality of patients' waiting areas of hospitals has analyzed by looking at the performance of the users. Human oriented design approach was emphasized and the physical and psychological effects of interior spaces on the users were investigated.

As post-occupancy evaluation based constitute the reference point for the research, two similar state hospitals where chosen as study cases. Both of them have been renovated after 2010. The most significant difference between these hospitals is the positioning and functioning of the outpatient waiting areas in their plans.

While the waiting areas in Tire State Hospital are divided for each outpatient clinic, there are common waiting areas at Çeşme State Hospital. Comparisons between these two have been made in order to examine the effect of these different schemes on users. In comparison, literature-based surveillance and observation were conducted as well as evidence-based data collection (by a questionnaire survey).

Questions 1, 2, 4, 7, 19, 20, 23 and 29 of the questionnaire have not been analyzed. The reason for this is the same as the other questions in the same category. For this reason, the questions asked for common purposes were selected for analysis. These were more comprehensive and detailed questions.

In addition to comparing the plan layout of outpatient clinics of the two hospitals, interior elements of these areas such as materials, color/texture, lighting/visual comfort, ventilation, acoustic/audial comfort, furniture, stress diminishing elements and the concepts of wayfinding and privacy/boundary issues were investigated. It was found that there were some differences between the two hospitals in terms of acoustic comfort, privacy, natural lighting and ventilation all resulting from the differentiation of the plan scheme of the clinics' waiting halls.

5.1. Comparison of Waiting Areas

How the surveyed users preferred to design polyclinic waiting areas was also analyzed. (in common and/or separate spaces) Also users' satisfaction with the current situation of outpatient waiting areas was investigated on the basis of the evaluation of questions 3, 5, 6, 8, 9, 10, 12, 14, 21, 22, 24, 25, 26, 27 and 28.

Çeşme State Hospital

Polyclinic waiting areas in the Çeşme State Hospital do not benefit from sufficient natural light because they are located on a corridor inside the hospital.

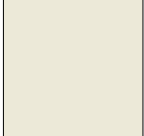
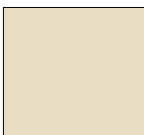

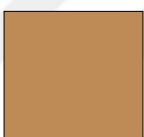
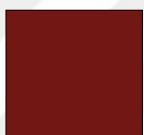
While clinic waiting areas A and B only receive light from the windows at the end of the corridor, the C polyclinic waiting area indirectly exploits natural light. Artificial lighting is provided by fluorescent bulbs located in suspended glass wood ceiling.

In polyclinic waiting areas, sitting elements with metal structure, armrest, back and seats covered with red leather are used. Ceramic coating was used as flooring material. In the walls, color code RGB 231-219-196 is used. The Secretariat's desk uses white color RGB 251-252-254 and RGB 169-111-74 color codes. (Figure 5.1) (Table 5.1)



Figure 5.1. a, b. Çeşme State Hospital Clinics; use of color in the waiting area (Personal archive, 2017).

Table 5.1. Colors and materials on the surfaces of the waiting areas in Çeşme Hospital

Surface	Material	Color	RGB
Floor	Ceramic		235-232-216
Wall	Paint		231-219-196
Ceiling	Wooden suspended ceiling		251-252-254
Door	Wood		189-138-90
Seating Element	Leather		114-24-23

Çeşme State Hospital Survey:

Çeşme State Hospital polyclinic waiting areas are not satisfy common usage standards of waiting areas for patients. This was shown by the results of the surveys answered by users. 93.3 percent of the users prefer to design the waiting areas separately and for medical branches.

The common use of polyclinic waiting areas, as in Çeşme State Hospital, causes the area to be crowded, loud, complicated and stress-increasing. Users prefer to design polyclinic waiting areas in separate rooms and / or separately with the help of separation elements (glass panel, full wall).

As a result of the evaluation of the questionnaires answered by the users of Çeşme State Hospital, the color field used in the outpatient clinic rooms show some spaciousness, leaving a distressing, passive and gloomy effect on the users.

The material used on the floor was found suitable by the users and the area is hygienic, regular, bright and wide. The sitting elements used in the waiting area are evaluated as comfortable, warm, aesthetic and hygienic.

Sitting elements were suitable for plan layout and ergonomics. The degree of natural and artificial lighting in the waiting areas were considered adequate and appropriate. Users indicated that they were not satisfied with the acoustic conditions of the waiting areas, and that they found the area noisy.

Survey Results:

3. What feeling do the common use of waiting halls create on you?

Wide	Crowded	Noise	Hygienic	Anti hygienic	Increases stress	Chaotic	Privacy violation	Increase mood	Lowers mood
8.9	91.1	80.0	8.9	33.3	60.0	80.0	24.4	15.6	31.1

As a result of the survey conducted, 91.1 percent of the participant's complaints from the crowd of waiting areas and that 80 percent of the participants think that the waiting areas are complicated and noisy. This problem is causing the stress increase in the users. In general, users are not satisfied with the clinic waiting areas in Çeşme State Hospital.

5. Each waiting area should be designed appropriate to that clinics paints and specially (for example children, birth, etc.)

Totally disagree	I disagree	No decision	I accept	Totally agree
0.0	0.0	6.7	42.2	51.1

As a result of the survey conducted in Çeşme State Hospital, 51.1 percent of the participants was totally agree with the specifically design of clinic waiting areas for different medical branches and 42.2 percent of the participants agree with this idea too. 6.7 percent of the participants was unstable in this regard. It is observed that users prefer to use uniquely designed waiting areas.

6. Please select your own method in designing waiting areas separated by medical branches.

Dividing by separator (glass panels, full walls)	42.2
By separating an individual space for each	55.6
Designing by placing seat and furniture	13.3
Other space dividing elements (greening, aquarium, etc)	42.2

In this survey questionnaire observed that, 55.6 percent of the participants prefers the separated design waiting areas for each medical branches. 42.2 percent of the participants was prefer dividing by separator or other space dividing elements.

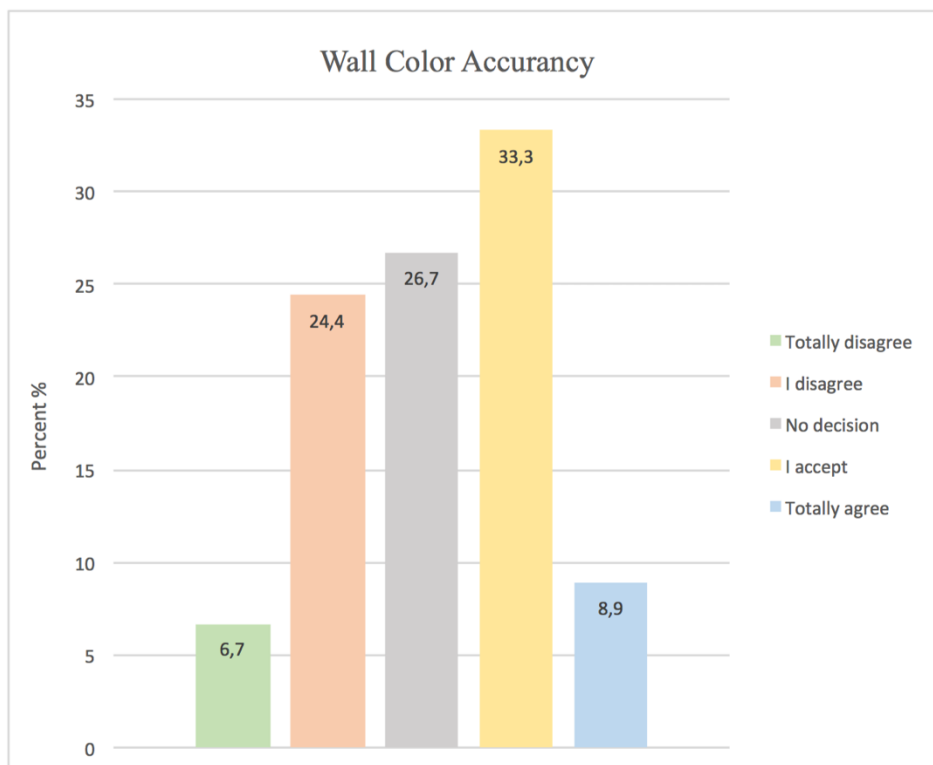
8. Which of the following feelings does the color of the wall create on you?

Exhilarating	Spacious	Comforting	Energetic	Passivating	Stress increasing
15.6	48.9	42.2	11.1	46.7	6.7
Gloomy	Boring	Depressing	Motivating	Soothing	
44.4	48.9	33.3	6.7	40.0	

As a result of the survey conducted in, the wall color in this space create spacious and boring feelings in 48.9 percent of the participants. That 46.7 percent of the participants feels passive in this area. That the color used was creates gloomy feelings in that 44.4 percent of the participants. In general, users are not satisfied with the wall color of clinic waiting areas in Çeşme State Hospital.

9. The color of the wall in this space is correct.

Totally disagree	I disagree	No decision	I accept	Totally agree
6.7	24.4	26.7	33.3	8.9



As a result of the survey conducted in Çeşme State Hospital, 33.3 percent of the participants think that the wall color used was correct and that 8.9 percent of the participants think that the color used was definitely the right choice. The second highest percentage of replies are represented by 26.7. The third highest percentage consists of participants who think that the wall color is not correct (24.4 percent). Those who do not like the color at all are represented by 6.7 percent.

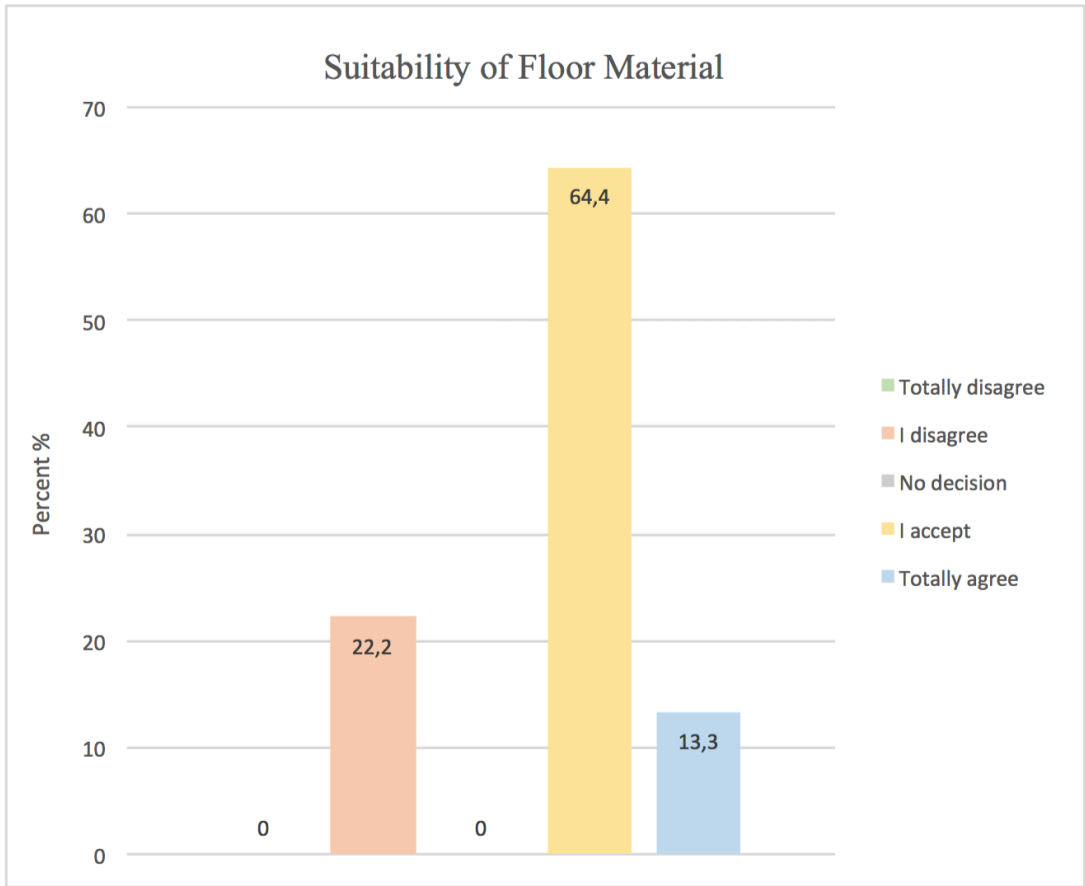
10. Which of the following definitions suit the role of the material used on the floor?

Warm	Spacious	Small	Narrow	Hygienic	Illuminous	Orderly
31.1	71.1	4.4	4.4	86.7	73.3	77.8
Cold	Boring	Big	Wide	Anti hygienic	Dark	Disorderly
33.3	6.7	68.9	73.3	6.7	4.4	4.4

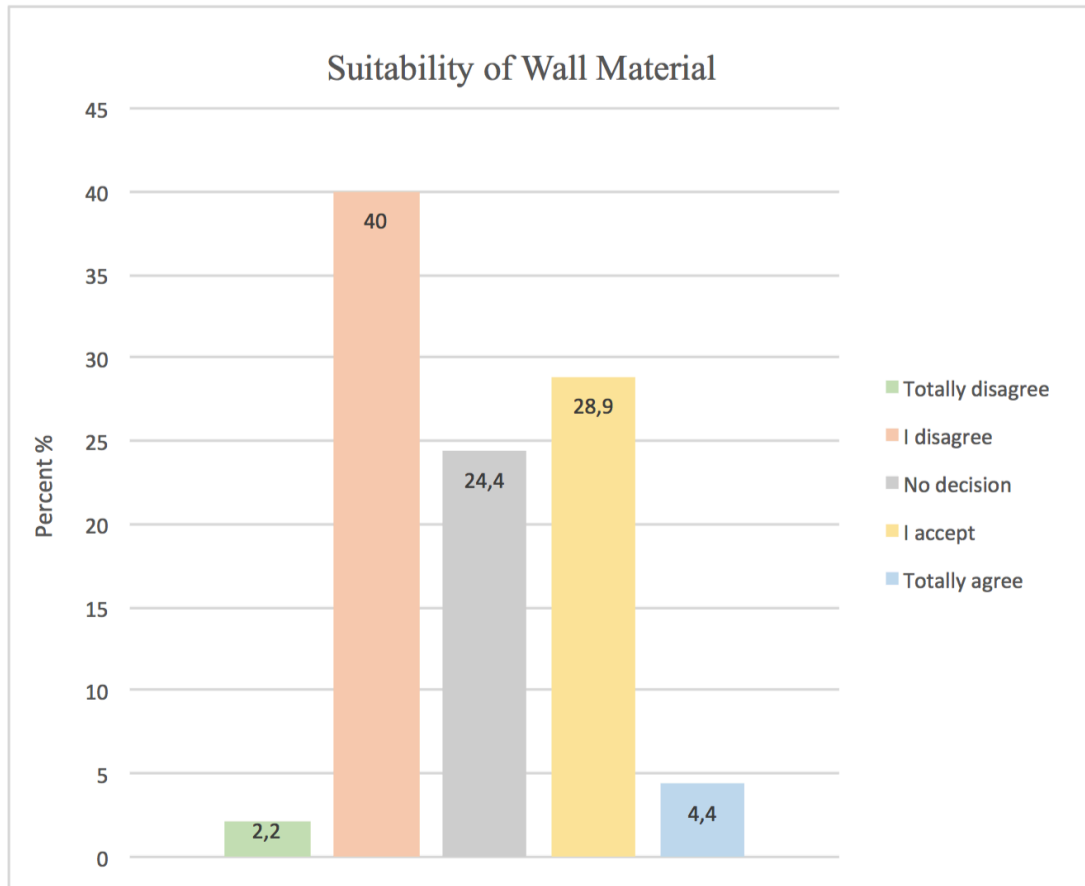
As a result of the survey conducted in Çeşme State Hospital, 86.7 percent of the participants think that the floor material used was hygienic and that 77.8 percent of the participants think that the floor material used shows waiting area more orderly. The third highest percentage consists of participants who think that the floor material shows this place illuminous and wide. In general, users think the floor material used in waiting area is definitely the right choice.

12. The materials used in the waiting area are suitable.

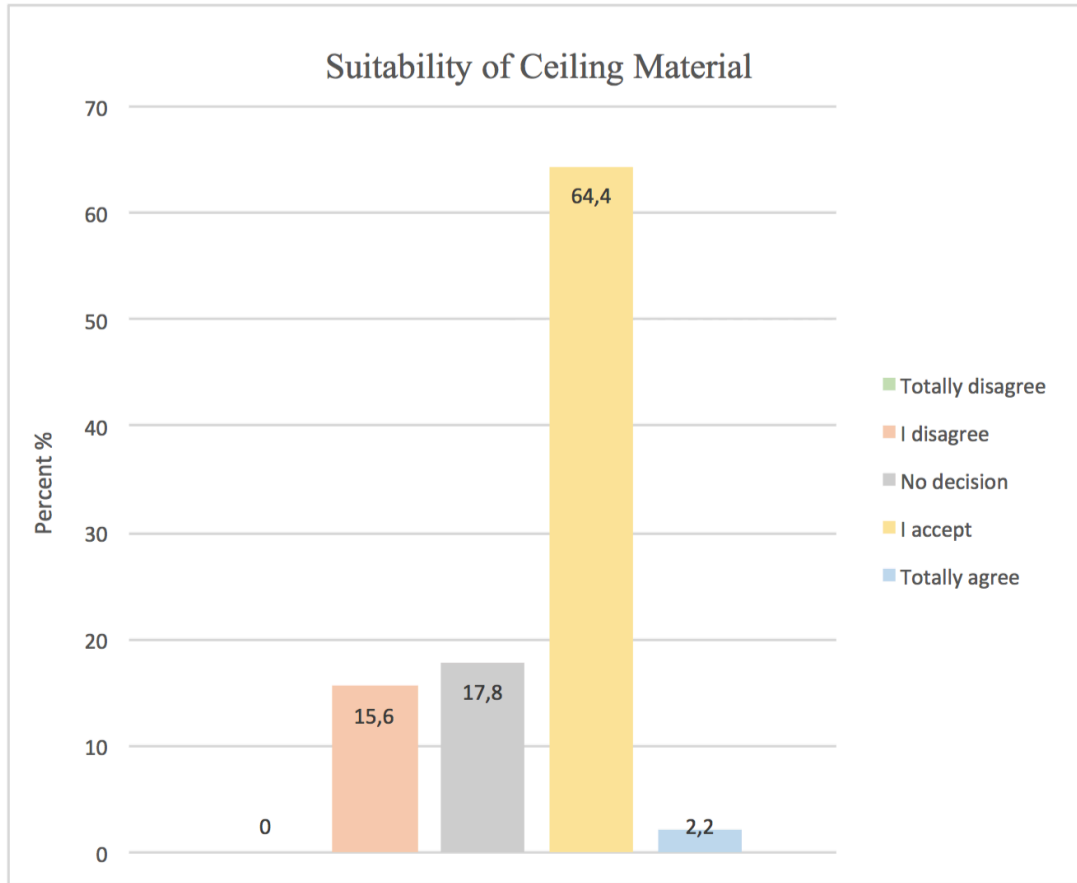
	Totally disagree	I disagree	No decision	I accept	Totally agree
Floor	0.0	22.2	0.0	64.4	13.3
Wall	2.2	40.0	24.4	28.9	4.4
Ceiling	0.0	15.6	17.8	64.4	2.2



As a result of the survey conducted in Çeşme State Hospital, 64.4 percent of the participants think that the floor material used was correct and that 13.3 percent of the participants think that the material used was definitely the right choice. The third highest percentage consists of participants who think that the floor material is not correct (22.2 percent). In general, users are satisfied with the floor material of clinic waiting areas in Çeşme State Hospital.



As a result of the survey conducted in Çeşme State Hospital, 40.0 percent of the participants think that the wall material used was not correct and that 28.9 percent of the participants think that the material used was definitely the right choice. The third highest percentage consists of participants who were undecided (24.4 percent). 4.4 percent of the respondents think that the wall material is absolutely correct and 2.2 thinks it is not absolutely correct. According to the result of the questionnaire, the percentage wall material is not the right choice.



As a result of the survey conducted in Çeşme State Hospital, 64.4 percent of the participants think that the ceiling material used was correct and that 17.8 percent of the participants was unstable. The third highest percentage consists of participants who that think the material used was not correct (15.6 percent). 2.2 percent of respondents think that ceiling material is absolutely correct. According to the result of the questionnaire, the material used in ceiling is the right choice.

14. Please indicate the effect of the cover material of sitting elements in this space.

Warm	Cold	Comfortable	Uncomfortable	Hygienic	Anti-hygienic	Aesthetic	Unaesthetic
77.8	8.9	100.0	0.0	80.0	8.9	55.6	24.4

In this survey questionnaire observed that, 100 percent of the participants think that the cover material of sitting elements was comfortable and that 80 percent of the participants think that the seats was hygienic. The third highest percentage consists of participants who that think the seats material used was warm (77.8 percent). According to the result of the questionnaire, the cover material of sitting elements is suitable.

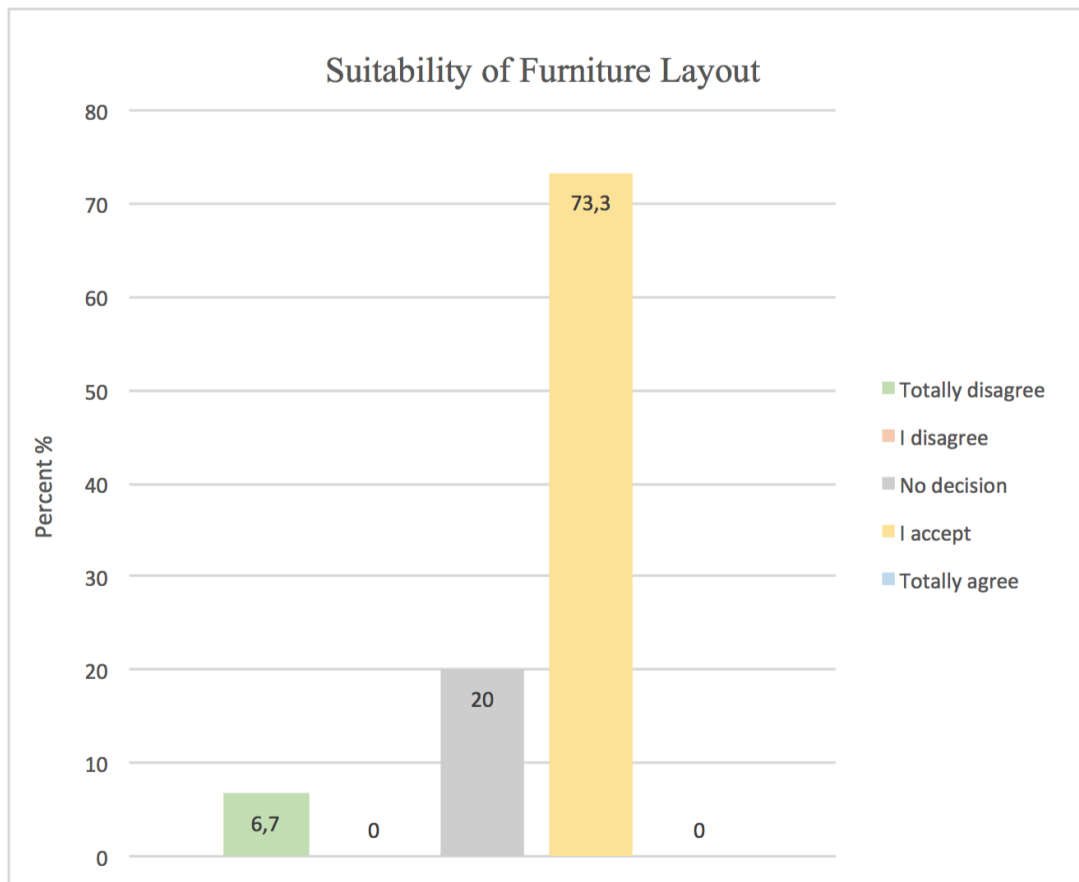
21. Mark the effect that color of furniture creates on you.

Warm	Comforting	Spacious	Heavy	Hygienic	Aesthetic
82.2	24.4	20.0	8.9	44.4	48.9
Cold	Stress increasing	Boring	Light	Anti-hygienic	Anti-aesthetic
0.0	53.3	11.1	6.7	24.4	40.0

In this survey questionnaire observed that, 82.2 percent of the participants think that the color of furniture was create warm effect in waiting areas and that 53.3 percent of the participants think that the color used was create stress increasing effect. The third highest percentage consists of participants who that think the color used was aesthetic (48.9 percent).

22. The layout of furniture in this space is suitable in terms of function.

Totally disagree	I disagree	No decision	I accept	Totally agree
6.7	0.0	20.0	73.3	0.0



As a result of the survey conducted in the Çeşme State Hospital, 73.3 percent of the participants think that the layout of the furniture was correct in the waiting area and 20.0 percent of the participants were undecided. The third highest percentage consist of participants who think that the layout of the furniture is absolutely incorrect (6.7 percent). According to the results of the survey, participants thinks the furniture layout was made correctly.

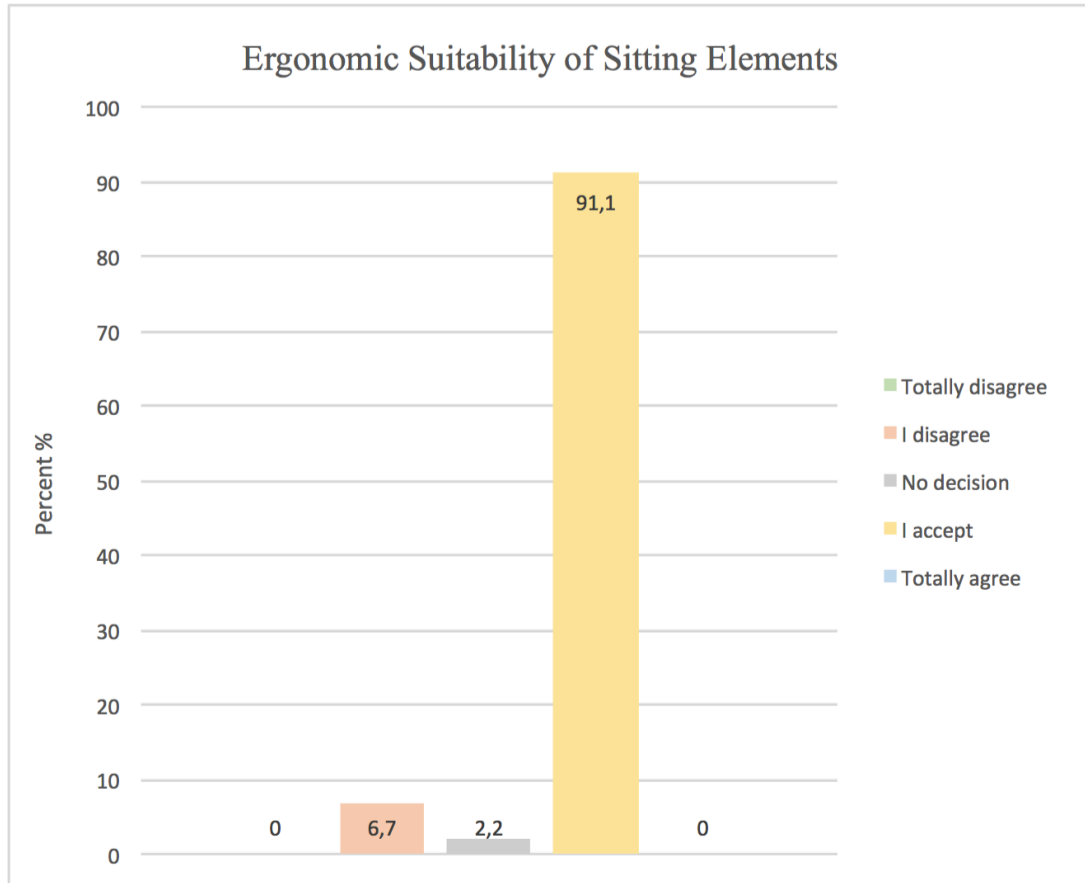
24. What emotions does the layout of furniture in this space create on you?

Spacious	Crowded	Calming	Stress increasing	Aesthetic	Anti-aesthetic	Plain	Chaotic	Boring
62.2	26.7	20.0	13.3	26.7	0.0	64.4	26.7	6.7

As a result of the survey conducted, the furniture layout in this space create plain emotions in 64.4 percent of the participants. That 62.2 percent of the participants feels spacious in this area. That the furniture layout was creates crowded, chaotic and aesthetic feelings in that 26.7 percent of the participants. In general, users are not satisfied with the furniture layout of clinic waiting areas in Çeşme State Hospital.

25. Sitting elements (chair, arm chairs) used in this room suit human dimension (form and size).

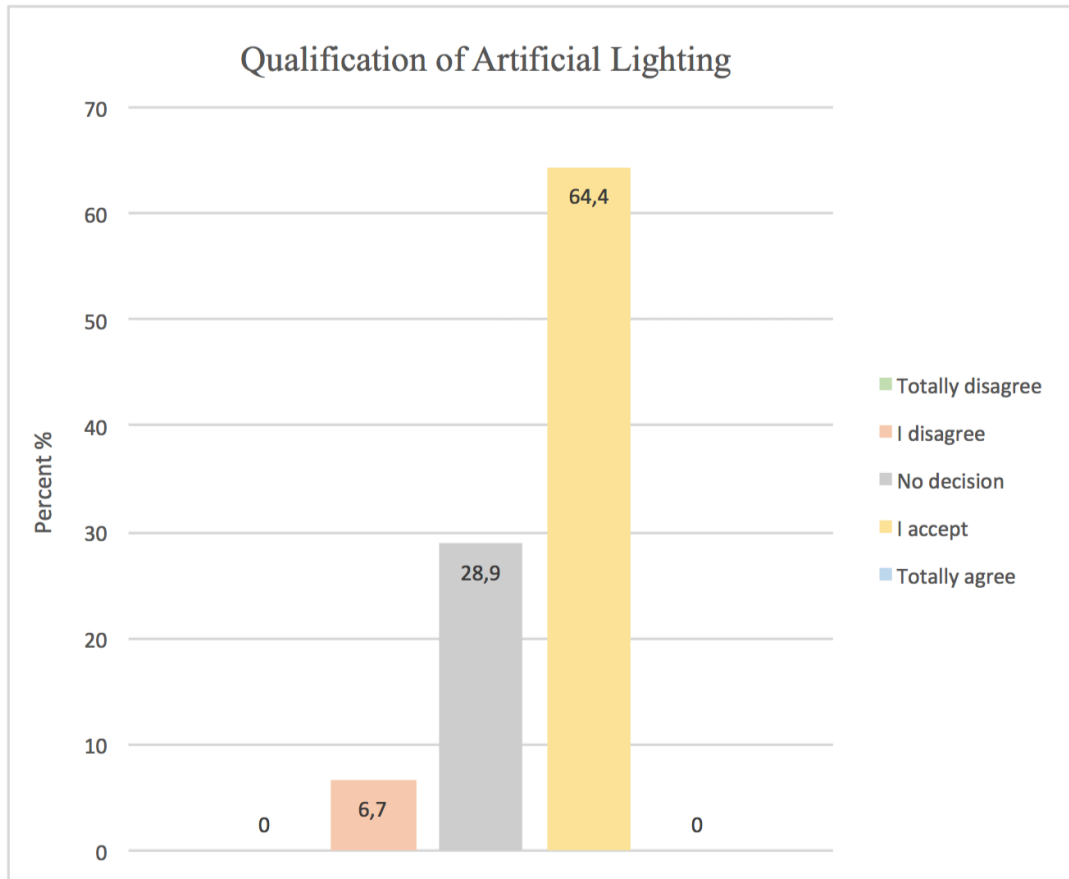
Totally disagree	I disagree	No decision	I accept	Totally agree
0.0	6.7	2.2	91.1	0.0



As a result of the survey conducted in the Çeşme State Hospital, 91.1 percent of the participants think that the furniture is ergonomically correct at the highest percentage, 6.7 percent of the participants think that furniture is not ergonomically appropriate and it is the second highest percentage. 2.2 percent of participants said that furniture is unstable. According to the result of the survey, the seat elements are suitable for the user and the user in terms of ergonomics.

26. Artificial lighting conditions are sufficient for this room.

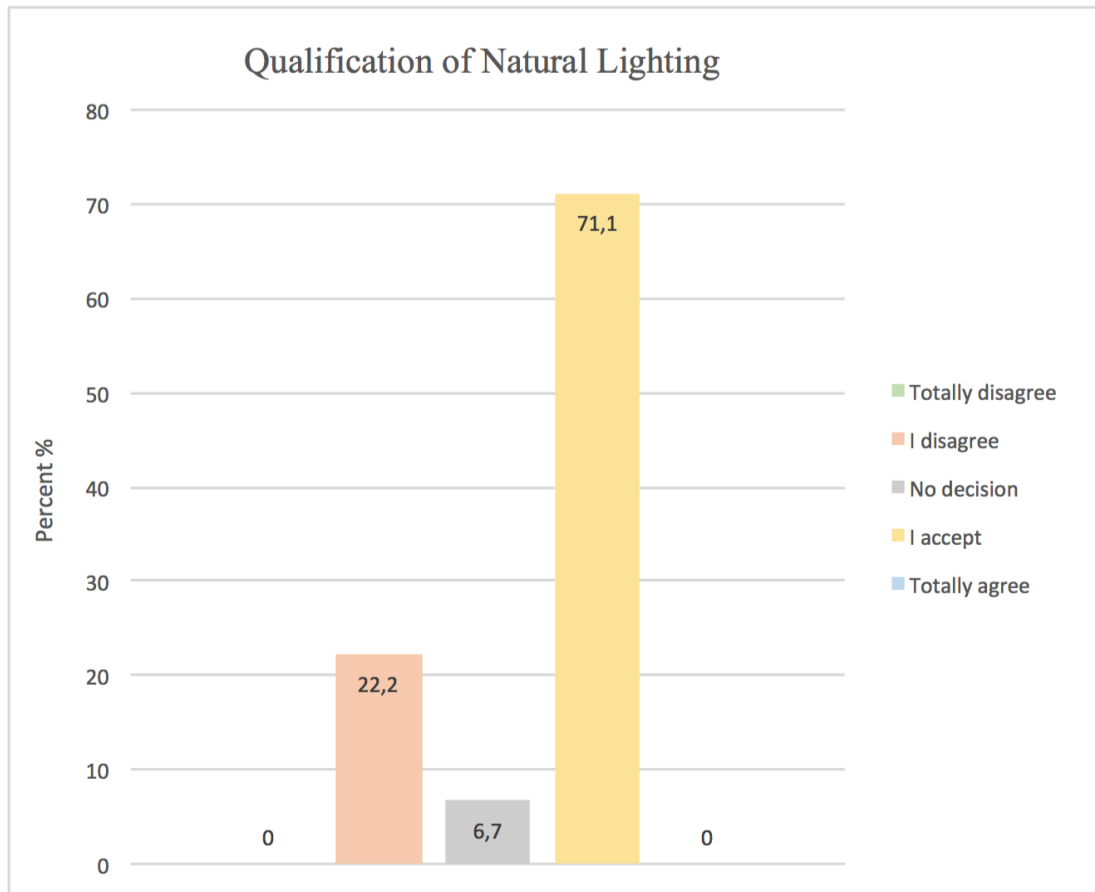
Totally disagree	I disagree	No decision	I accept	Totally agree
0.0	6.7	28.9	64.4	0.0



As a result of the survey conducted in Çeşme State Hospital, 64.4 percent of the participants think that the qualification of artificial lighting was correct and that 28.9 percent of the participants was unstable. The third highest percentage consists of participants who that think the qualification of artificial lighting was not correct (6.7 percent). According to the result of the questionnaire, the qualification of artificial lighting of clinic waiting areas was suitable.

27. Natural lighting in this room is sufficient.

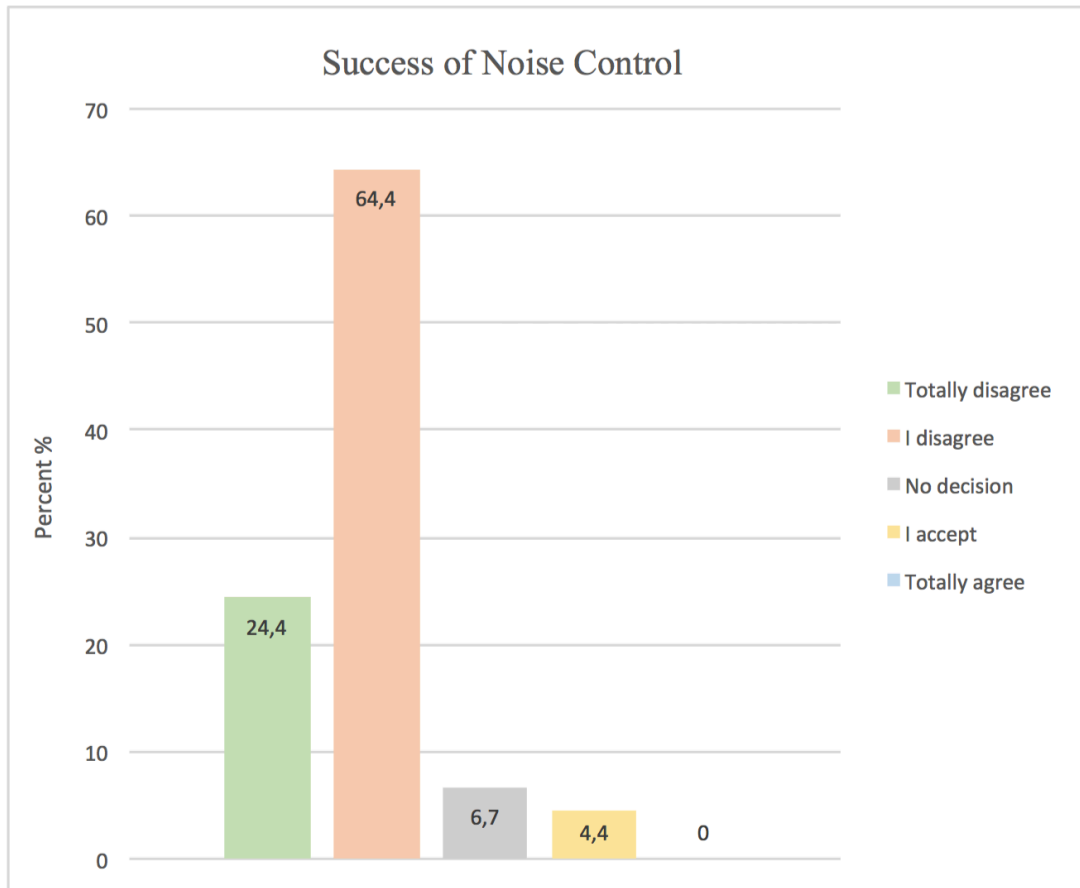
Totally disagree	I disagree	No decision	I accept	Totally agree
0.0	22.2	6.7	71.1	0.0



As a result of the survey conducted in Çeşme State Hospital, 71.1 percent of the participants think that the qualification of natural lighting was correct and that 6.7 percent of the participants was unstable. The second highest percentage consists of participants who that think the qualification of artificial lighting was not correct (22.2 percent). According to the result of the questionnaire, the qualification of natural lighting of clinic waiting areas was suitable.

28. Noise control is successfully done in this space.

Totally disagree	I disagree	No decision	I accept	Totally agree
24.4	64.4	6.7	4.4	0.0



As a result of the survey conducted at the Çeşme State Hospital, 64.4 percent of the participants think that the noise control in the waiting area was not successful and 24.4 percent of the participants consisted of users who think that noise control was not absolutely correct. The third high consists of participants who are unstable by 6.7 percent. 4.4 percent of respondents think that noise control is a successfully done. According to the result of the survey, noise control was not achieved successfully.

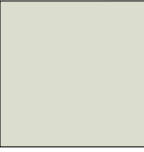
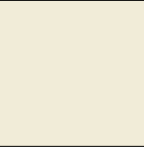


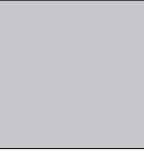
Tire State Hospital

Tire State Hospital polyclinic waiting areas are designed parallel to the two sides of a common corridor. In terms of plan layout, these are separated by different areas, so all waiting halls benefit from natural light at a sufficient level. Artificial lighting is provided by the luminous luminaires in the aluminum gypsum suspended ceiling.



Figure 5.2. A, b. Tire State Hospital, use of colors in the polyclinic waiting area (Personal archive, 2017).

Table 5.2. Tire State Hospital color and material of the waiting area surfaces

Surface	Material	Color	RGB
Floor	Ceramic		219-220-206
Wall	Paint		238-231-204
Ceiling	Wooden suspended ceiling		251-252-254
Door	Wood		255-255-255
Seating Element	Leather		198-198-198

In polyclinic waiting areas, the metal structure, without armrests, the back and the seats are metal. Gray color code 198-198-198 is preferred as metal color. Ceramic coating was applied on floors. Coded paint is used on the walls. The Secretariat's office used RGB wood color codes 69-26-34 and RGB 202-172-142. The leather-coated secretary seat used RGB 164-162-105 code. (Figure 5.2) (Table 5.2).

Tire State Hospital Survey:

According to the results of the surveys answered by users of the Tire State Hospital polyclinic waiting areas, patients do not prefer to use the waiting areas jointly. 81.5% of the users prefer to design waiting areas separately and specifically for individually each medical branch. Outpatient clinics were preferred to be designed separately with the aid of divisive staff, as in Tire State Hospital. Users are convinced that the common use of polyclinic waiting areas will cause crowds and confusion in the area. As a result of the evaluation of the questionnaires answered by the users of Tire State Hospital, the wall color used in the outpatient clinic areas is not suitable. The color that is used in this area creates ineffective, frustrating and overwhelming effects. The material used on the floor and in the ceiling is well qualified by the users. The material and color used on the floor shows the area cold, but bright and wide. One of the most important factors affecting the users in waiting areas are the sitting elements. The seats used in clinic waiting areas were not considered suitable. Users complain that furniture is uncomfortable, cold, brittle and not aesthetic. Bright level of light in the vicinity is convenient. Patients complain about the noise pollution caused by the crowd in the waiting areas.

Survey Results:

3. What feeling do the common use of waiting halls create on you?

Wide	Crowded	Noise	Hygienic	Anti hygienic	Increases stress	Chaotic	Privacy violation	Increase mood	Lowers mood
13.1	63.1	57.7	10.8	31.5	23.1	49.2	17.7	4.6	21.5

As a result of the survey conducted, 63.1 percent of the participant’s complaints from the crowd of waiting areas and that 57.7 percent of the participants think that the waiting areas are noisy. The third highest percentage consists of participants who think that the waiting areas were chaotic (49.2 percent). This problem is causing the stress increase in the users. In general, users are not really satisfied with the clinic waiting areas in Tire State Hospital.

5. Each waiting area should be designed appropriate to that clinics paints and specially (for example. children, birth, etc)

Totally disagree	I disagree	No decision	I accept	Totally agree
6.9	3.8	3.8	50.0	31.5

As a result of the survey conducted in Tire State Hospital, 50.0 percent of the participants was agree with the specifically design of clinic waiting areas for different medical branches and 31.5 percent of the participants was totally agree with this idea too. 6.9 percent of the participants was totally disagree. It is observed that users prefer to use uniquely designed waiting areas.

6. Please select your own method in designing waiting areas separated by medical branches.

Dividing by separator (glass panels, full walls)	60.8
By separating an individual space for each	41.5
Designing by placing seat and furniture	18.5
Other space dividing elements (greening, aquarium, etc)	34.6

In this survey questionnaire observed that, 60.8 percent of the participants prefers dividing by separator and 41.5 percent of the participants was prefer separated design waiting areas for each medical branches. That 34.6 percent of participants prefer other space dividing elements.

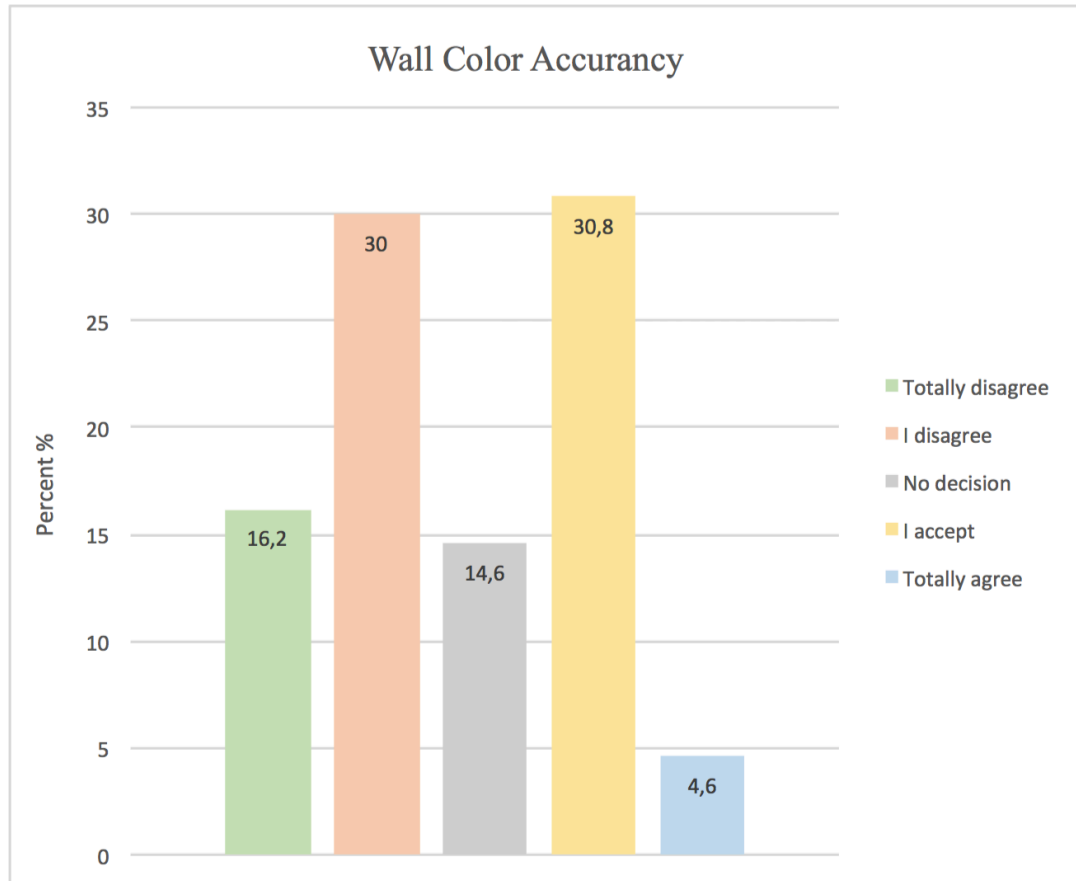
8. Which of the following feeling does the color of the wall create on you?

Exhilarating	Spacious	Comforting	Energetic	Passivating	Stress increasing
7.7	25.4	17.7	4.6	43.8	3.1
Gloomy	Boring	Depressing	Motivating	Soothing	
30.0	41.5	35.4	10.0	13.1	

As a result of the survey conducted in, the wall color in this space create passivating feelings in 43.8 percent of the participants. That 41.5 percent of the participants feels bored in this area. That the color used was creates depressing feelings in that 35.4 percent of the participants. In general, users are not satisfied with the wall color of clinic waiting areas in Tire State Hospital.

9. The color of the wall in this space is correct.

Totally disagree	I disagree	No decision	I accept	Totally agree
16.2	30.0	14.6	30.8	4.6



As a result of the survey conducted in the Tire State Hospital, 30.8 percent of the participants think that the wall color used was correct and that 30 percent of participants think that the color used was definitely the not correct choice. The third highest percentage consists of participants who think that the wall color used is definitely the fault choice by 16.2 percent. In general, users was not really satisfied with clinics waiting areas.

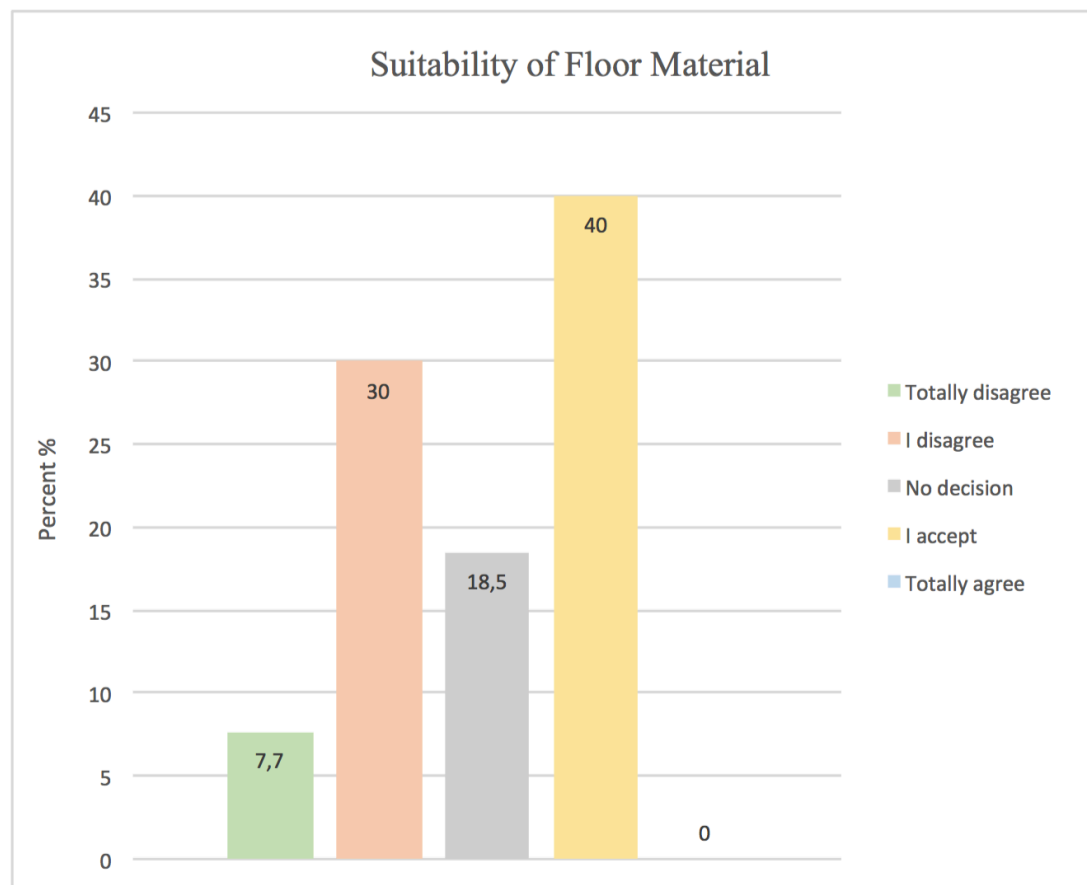
10. Which of the following definitions suit the role of the material used on the floor?

Warm	Spacious	Small	Narrow	Hygienic	Illuminous	Orderly
2.3	30.0	6.2	1.5	19.2	35.4	27.7
Cold	Boring	Big	Wide	Anti hygienic	Dark	Disorderly
47.7	25.4	30.8	33.8	31.5	5.4	13.1

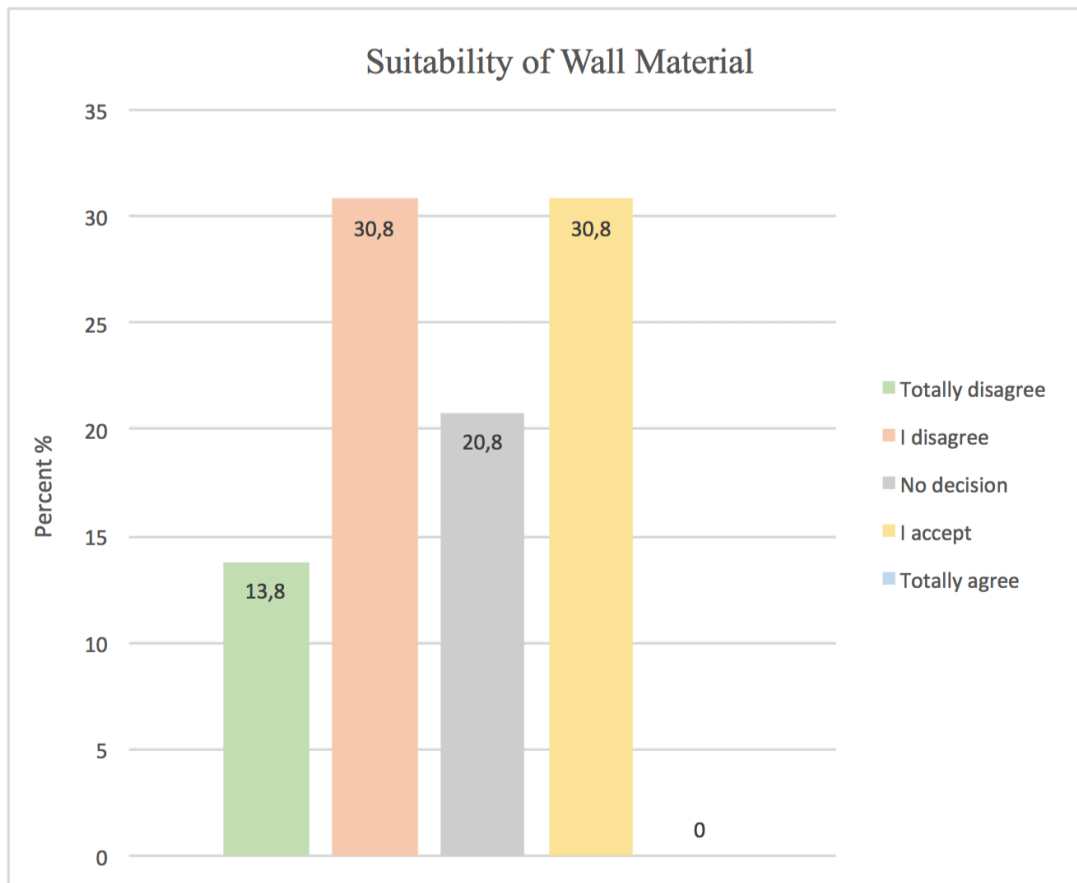
As a result of the survey conducted in Tire State Hospital, 47.7 percent of the participants think that the floor material used was cold and that 35.4 percent of the participants think that the floor material was shows waiting area more illuminous. The third highest percentage consists of participants who think that the floor material shows this place wide (33.8 percent). In general, users think the floor material used in waiting area is definitely the right choice.

12. The materials used in the waiting area are suitable.

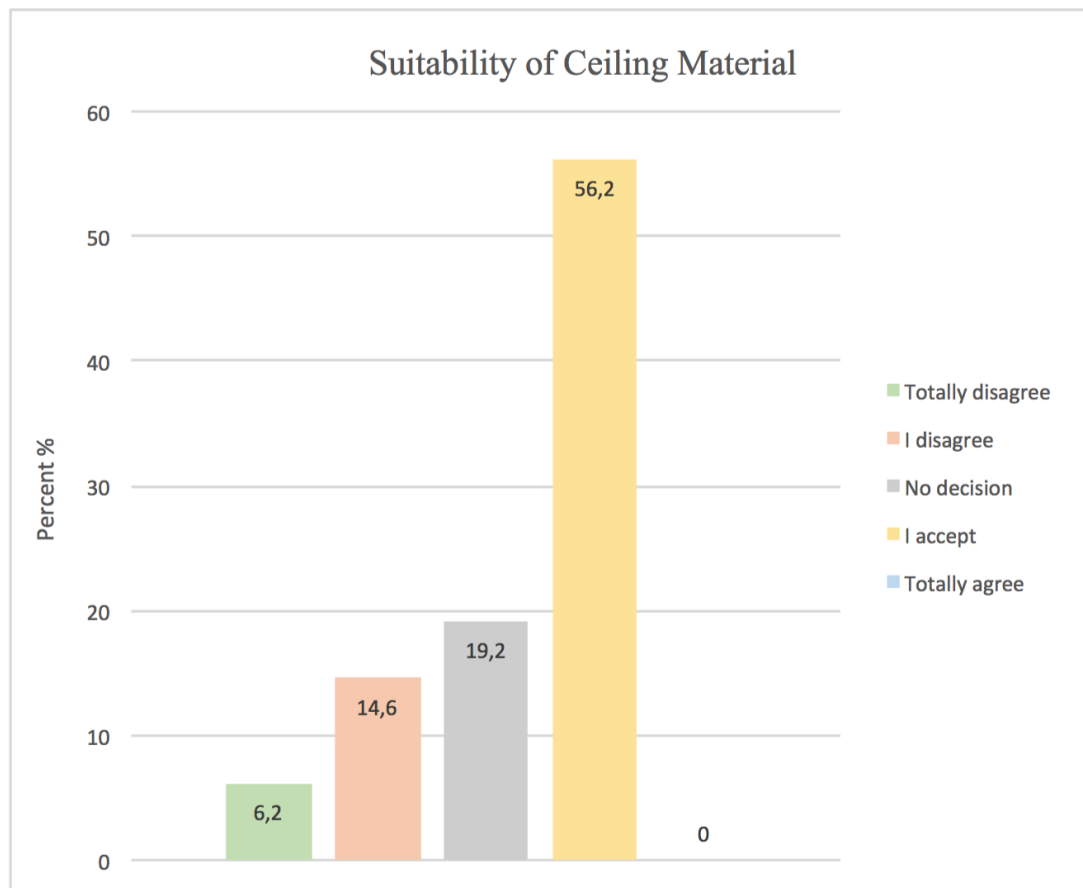
	Totally disagree	I disagree	No decision	I accept	Totally agree
Floor	7.7	30.0	18.5	40.0	0.0
Wall	13.8	30.8	20.8	30.8	0.0
Ceiling	6.2	14.6	19.2	56.2	0.0



As a result of the survey conducted in Tire state hospital, 40 percent of the participants think that the floor material used was correct and that 30 percent of the participants think that the material used was not correct choice. The third highest percentage consists of participants who were undecided (18.5 percent).



As a result of the survey conducted in Tire State Hospital, 30.8 percent of the participants think that the wall material used was not correct and also that 30.0 percent of the participants think that the material used was the correct choice. The second highest percentage consists of participants who were undecided (20.8 percent). 13.8 percent of the respondents think that the wall material is absolutely not correct.



As a result of the survey conducted in Tire State Hospital, 56.2 percent of the participants think that the ceiling material used was correct and that 19.2 percent of the participants was unstable. The third highest percentage consists of participants who that think the material used was not correct (14.6 percent). 6.2 percent of respondents think that ceiling material is absolutely not correct. According to the result of the questionnaire, the material used in ceiling is the right choice.

14. Please indicate the effect of the cover material of seating elements in this space.

Warm	Cold	Comfortable	Uncomfortable	Hygienic	Anti-hygienic	Aesthetic	Unaesthetic
0.0	82.3	11.5	63.1	6.9	21.5	2.3	39.2

In this survey questionnaire observed that, 82.3 percent of the participants think that the cover material of sitting elements was cold and that 63.1 percent of the participants think that the seats was uncomfortable. The third highest percentage consists of participants who that think the seats material used was unaesthetic (39.2 percent). According to the result of the questionnaire, the cover material of sitting elements is really unsuitable and uncomfortable.

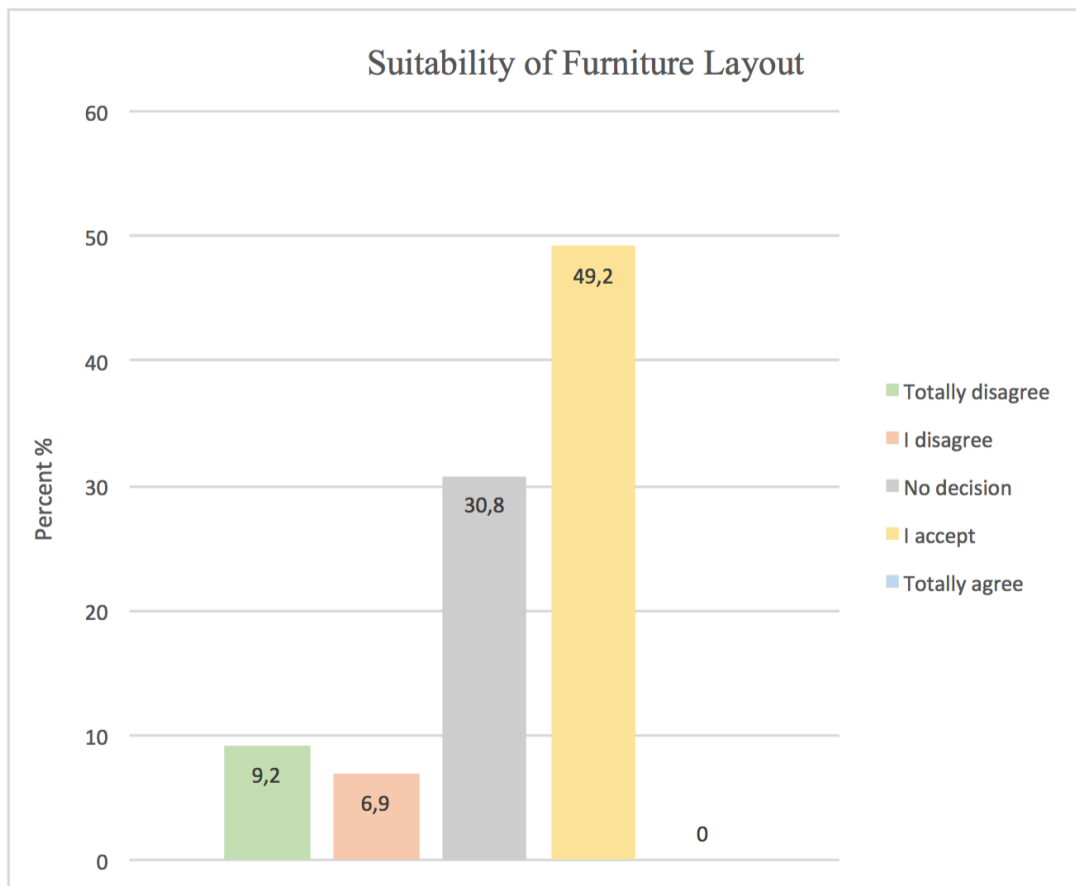
21. Mask the effect that color of furniture in this created on you.

Warm	Comforting	Spacious	Heavy	Hygienic	Aesthetic
0.0	12.3	11.5	16.9	7.7	7.7
Cold	Stress increasing	Boring	Light	Anti-hygienic	Anti-aesthetic
63.1	24.6	56.2	7.7	17.7	46.2

In this survey questionnaire observed that, 63.1 percent of the participants think that the color of furniture was create cold effect in waiting areas and that 56.2 percent of the participants think that the color used was create bored effect. The third highest percentage consists of participants who that think the color used was anti-aesthetic (46.2 percent).

22. The layout of furniture in this space is suitable in terms of function.

Totally disagree	I disagree	No decision	I accept	Totally agree
9.2	6.9	30.8	49.2	0.0



As a result of the survey conducted in the Tire State Hospital, 49.2 percent of the participants think that the layout of the furniture was correct in the waiting area and 30.8 percent of the participants were undecided. The third highest percentage consist of participants who think that the layout of the furniture is absolutely incorrect (9.2 percent). According to the results of the survey, the furniture layout was made correctly.

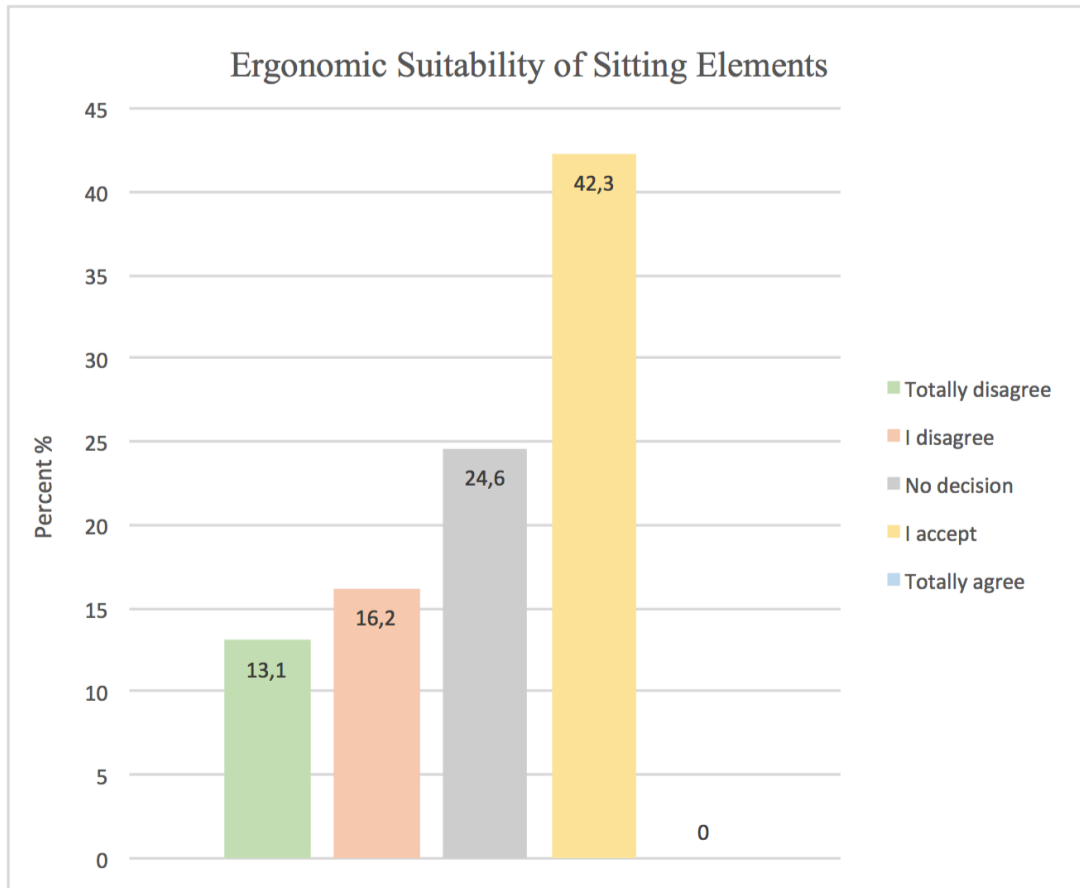
24. What emotions does the layout of furniture in this space create on you?

Spacious	Crowded	Calming	Stress increasing	Aesthetic	Anti-aesthetic	Plain	Chaotic	Boring
17.7	26.9	13.8	29.2	9.2	23.1	36.2	19.2	20.8

As a result of the survey conducted, the furniture layout in this space create plain emotions in 36.2 percent of the participants. That 29.2 percent of the participants feels stressed in this area. That the furniture layout was creates crowded feelings in that 26.9 percent of the participants. In general, users are not satisfied with the furniture layout of clinic waiting areas in Tire State Hospital.

25. Sitting elements (chair, arm chairs) used in this room suit human dimension (form and size).

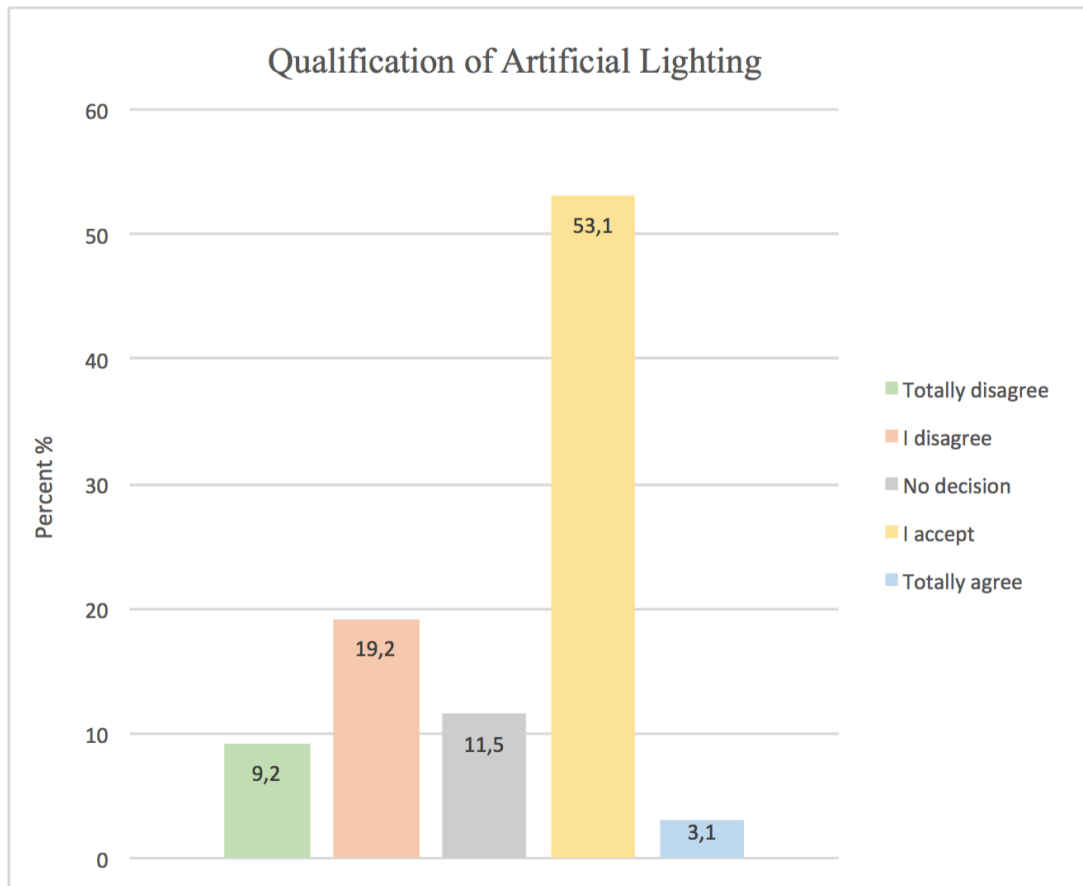
Totally disagree	I disagree	No decision	I accept	Totally agree
13.1	16.2	24.6	42.3	0.0



As a result of the survey conducted in the Tire state hospital, 42.3 percent of the participants think that the furniture is ergonomically correct at the highest percentage, 24.6 percent of the participants were undecided. That 16.2 percent of participants said that furniture is unstable. According to the result of the survey, the seat elements are suitable for the user and the user in terms of ergonomics.

26. Artificial lighting conditions are sufficient for this room.

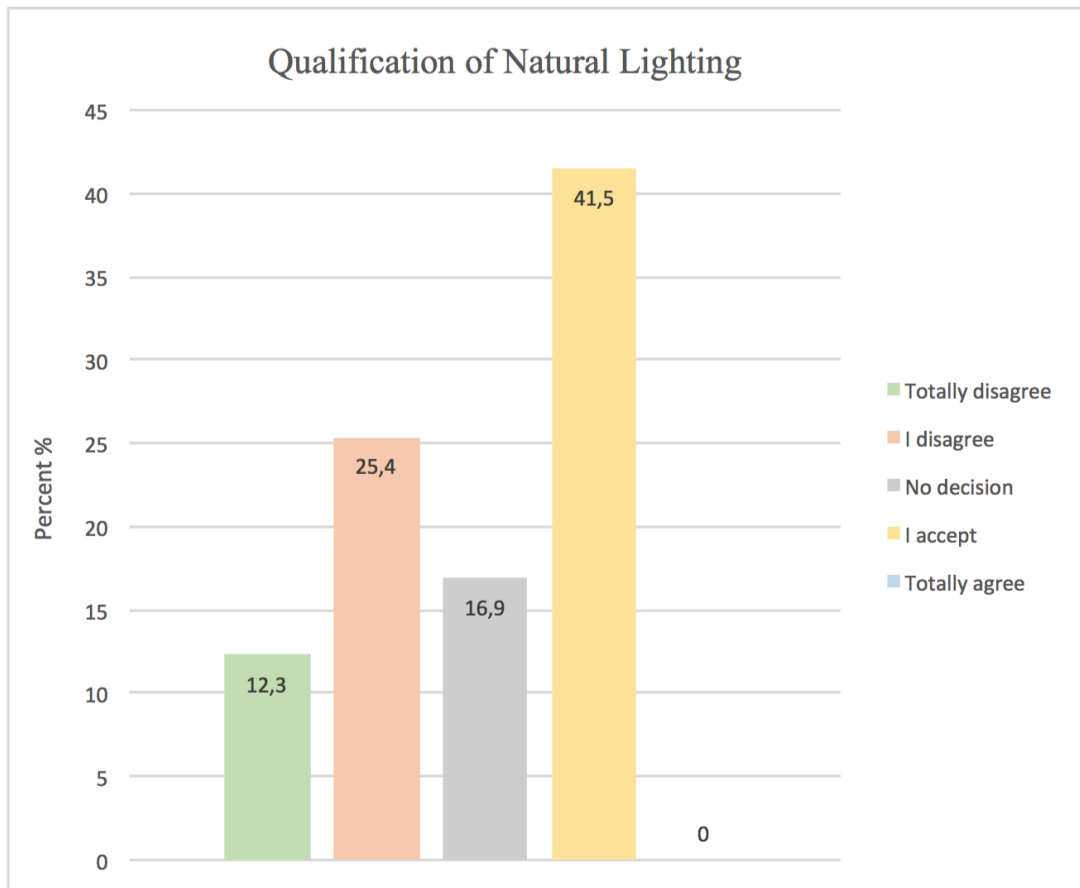
Totally disagree	I disagree	No decision	I accept	Totally agree
9.2	19.2	11.5	53.1	3.1



As a result of the survey conducted in Tire state hospital, 53.1 percent of the participants think that the qualification of artificial lighting was correct and that 19.2 percent of the participants think that was not correct. The third highest percentage consists of participants who were undecided (11.5 percent). According to the result of the questionnaire, the qualification of artificial lighting of clinic waiting areas was suitable.

27. Natural lighting in this room is sufficient.

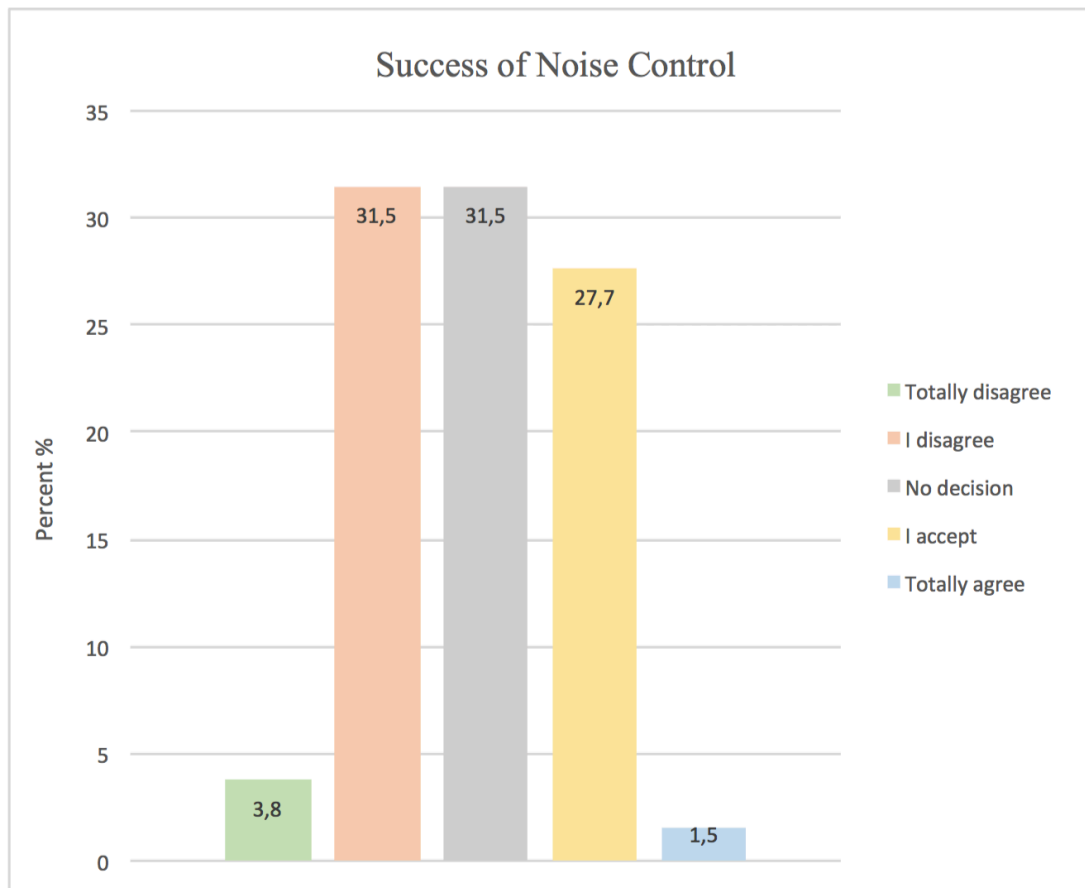
Totally disagree	I disagree	No decision	I accept	Totally agree
12.3	25.4	16.9	41.5	0.0



As a result of the survey conducted in Tire state hospital, 41.5 percent of the participants think that the qualification of natural lighting was correct and that 25.4 percent of the participants think that was not correct. The third highest percentage consists of participants who were undecided (16.9 percent). According to the result of the questionnaire, the qualification of natural lighting of clinic waiting areas was suitable.

28. Noise control is successfully done in this space.

Totally disagree	I disagree	No decision	I accept	Totally agree
3.8	31.5	31.5	27.7	1.5



As a result of the survey conducted at the Tire state hospital, 31.5 percent of the participants think that the noise control in the waiting area was not successful and also 31.5 percent of the participants were undecided. The second high consists of participants think that noise control is a successfully done (27.7 percent). According to the result of the survey, noise control was not achieved successfully.

5.2. User Expectations

As a result of the questions 11, 13, 15, 16, 17, 18, 30, 31 and 32, expectations of users from the policlinic waiting areas were analyzed. As a result of these analyses and the results of literature review, suggestions are presented in order to improve the quality of the waiting rooms.

The results of the survey indicate that users prefer materials that do not slip, anti-bacterial and easy to clean as flooring materials in the outpatient area. Users see more pastel colors in policlinic waiting areas as the wall color. These colors are mostly composed of the lightest shades of blue, pink and cream. Patients prefer to have plain, textured and glossy coatings on sitting elements. Users prefer the colors of mink, blue and dark gray in seat upholstery. As a result of the survey questions, the most suitable

sitting elements are leather trim, metal structure, armrest and 3-seat flat seat. As regards plan arrangement, plans people chose which increase socialization and help build eye contact. The view of nature that is used in the place causes stress levels of the users to decrease. Patients prefer active use of natural light and natural ventilation.

Survey Results:

11. Which of the following features suit the material used on the floor?

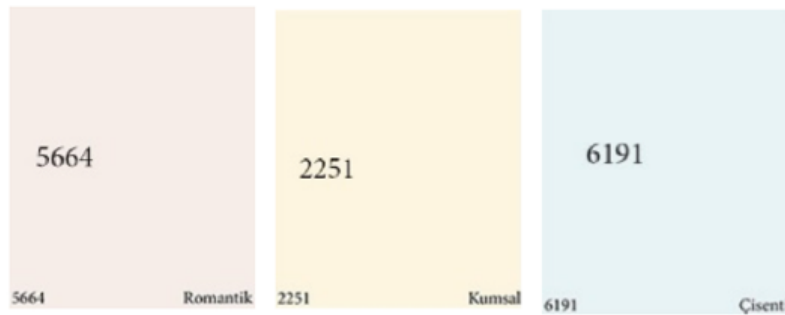
Non-slip	Shiny	Dull	One piece	Absorbs noise	Anti bacterial	Easy to clean	Non-stain
81.2	21.2	37.6	33.5	52.4	66.5	62.9	50.6

As a result of the survey conducted, 81.2 percent of participants prefers non-slip floor materials and 66.5 percent of participant prefers anti-bacterial floor materials. The third highest percentages consist of participant who prefer easy-to-clean floor materials for clinic waiting areas.

13. Please write three of your color choices (1 best) for the walls of this space.

Choice 1	Choice 2	Choice 3
5664/ 11.2	2251/ 9.4	6191/ 8.8





In this survey questionnaire observed that, 11.2 percent of the participants prefers the code 5664 color tone for wall color of waiting areas and 9.4 percent of the participants was prefer the code 2251 color. The third highest percentage consist of participants who prefer the code 6191 color for this space. In general, users prefer pastel colors in both hospital.

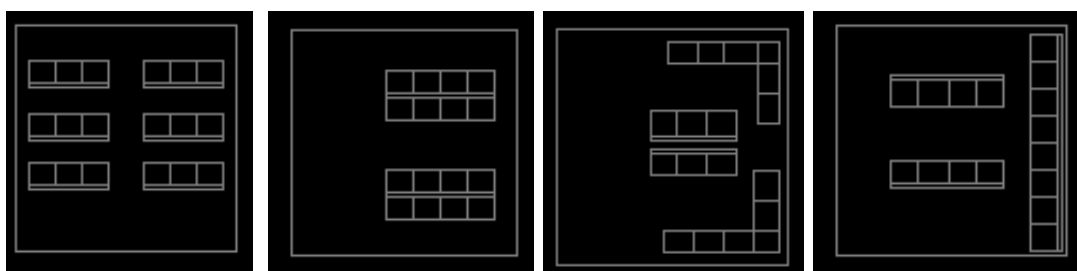
15. Indicate your expectations for the cover material of seating elements in this space.

Shiny	Slippery	With texture	With design	Plain
25.3	20.0	31.2	9.4	64.7

As a result of the survey conducted in both State Hospital, 64.7 percent of the participants prefers the plain cover material for seats and that 31.2 percent of participants prefer that cover materials with texture for sitting elements. The third highest percentage consist of users who prefer shiny cover material.

16. Which of the chair layouts below do you prefer for this space?

Plan 1	Plan 2	Plan 3	Plan 4
27.6	26.5	27.6	18.2



Plan (1)

Plan (2)

Plan (3)

Plan (4)

In this survey questionnaire observed that, the percentages are very close together. 27.6 percent of participant prefer plans (1) and (2) and 26.5 percent of participants prefer plan (2). In general, observed that layout of seats didn't make much sense for users.

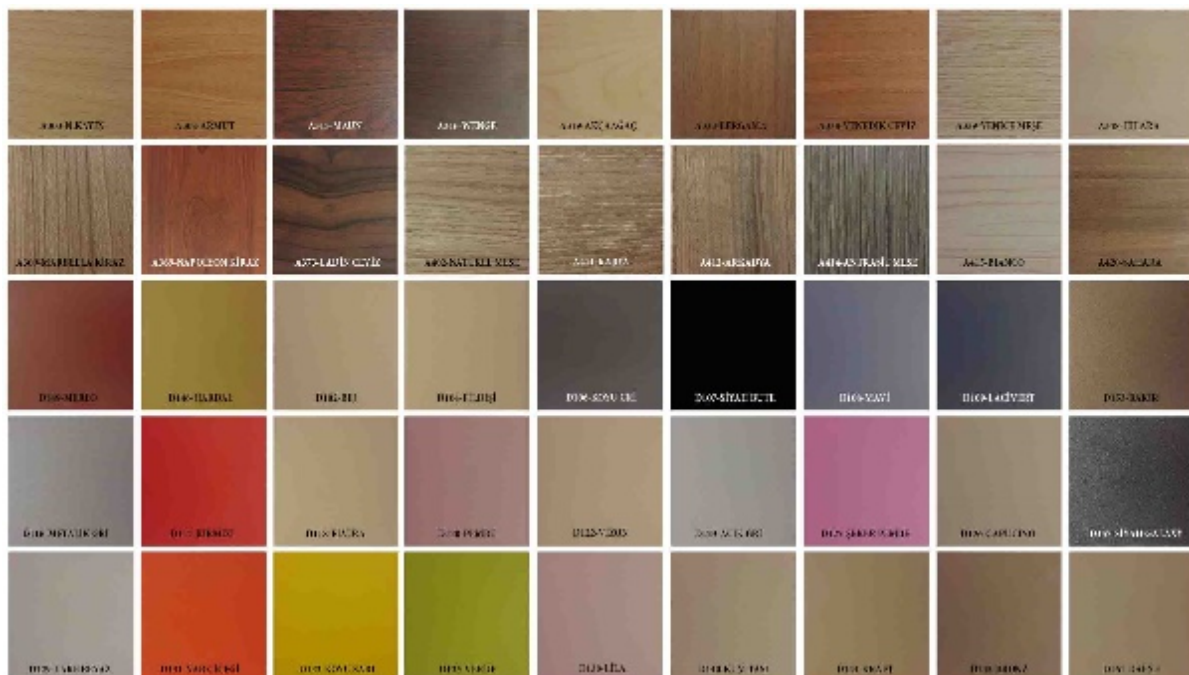
17. Which form and material do you prefer for the furniture in this space?

Leather coated sitting, Metal structure + Hand rail, Set of 3	62.4
Textile coated Sitting, Wood structure + Without hand rail, Set of 3	31.8
Metal sitting, Metal structure + Hand rail, with stand / Set of 2	18.8
Textile coated Sitting, Wood structure + With hand rail, with stand / Set of 2	29.4
Leather coated sitting, Metal structure + Set of 3 or 4	21.8

As a result of the survey conducted, 62.4 percent of participants think that the leather coated sitting, metal structure with hand rail was suitable for waiting areas and 31.8 percent of participant prefers textile coated with wood structure and without hand rail seats. The third highest percentage consist of participants who prefer the textile coated, with wood structure and without hand rail seats.

18. Make your preference (1 best) of color for the furniture of this space.

	1. choice	2. choice	3. choice
Arm chair	D108/ 10.6	D122/ 10.6	D106/ 8.2
Stand	A412/ 14.7	A308/ 13.5	A319/ 11.8





In this survey questionnaire observed that, 10.6 percent of the participants prefers the code D108 and D122 woods for arm chairs and 8.2 percent of the participants was prefer the code D106 wood.



In this survey questionnaire observed that, 14.7 percent of the participants prefers the code A412 woods for stand and 13.5 percent of the participants was prefer the code A308 wood. The third highest percentage consist of participants who think the code A319 was better choice (11.8 percent).

30. Which of the following have been visually preferred in this space?

Landscapes	77.1
Human portraits	21.8
Animal portraits	37.6
Aesthetic work	21.8
Sculpture	11.2

As a result of the survey conducted, 77.1 percent of the participants prefer landscape view pictures in this space and 37.6 percent of the participants feels animal portraits was better.

31. The natural parameters reduce stress in waiting areas.

	Totally disagree	I disagree	No decision	I accept	Totally agree
Use the natural light	2.9	4.1	7.6	49.4	35.9
Natural ventilation	0.0	7.1	5.9	53.5	33.5
Touching water	13.5	11.8	33.5	30.6	10.6
Listening natural noises	11.2	11.8	16.5	42.4	18.2
Watching water	10.0	5.3	18.8	40.6	25.3

As a result of the survey conducted in both state hospital in every option, users were always agree with the use of natural parameters in waiting areas. The highest percentage consist of participants who prefer natural ventilation (53.5 percent). 49.4 percent of participants was prefer the active use of natural light.

32. In which of the following ways would you prefer visual connections in waiting areas?

Direct connection to garden	57.1
Interior garden	39.4
A good landscape view	58.2
Do not want any	0.0

As a result of the survey conducted, 58.2 percent of participants prefers a good landscape view in clinic waiting areas and 57.1 percent of participants prefer to have direct connection to garden. The third highest percentage consist of participants who prefer interior garden in clinic waiting areas (39.4 percent).

CHAPTER SIX

CONCLUSIONS AND PROPOSALS

This study has analyzed the outpatient waiting areas of the two hospitals one of which has a common waiting area and the other is designed with separate areas according to different medical branches. The aim of the study was to clearly reveal the differences between indoor design factors of waiting rooms and the effects of these on user satisfaction, expectations and perception. In this study, firstly literature review was conducted and which internal factors are influential on user psychology and expectations was determined. Interior qualities of outpatient waiting areas of selected sample hospitals were analyzed. Users were asked questions in order to reveal their satisfaction and expectations depending on the place. Based on the answers given by the users to the questionnaire survey and the findings obtained from literature survey, some suggestions were finally made for the improvement of indoor quality.

Plan schema

Patients and their relatives who have applied to outpatient clinics are stressed and anxious for different reasons. Interior design plays a major role in reducing this stress and anxiety. One of the most important concern of users in the first place is that they cannot easily find the unit they are looking for. For this reason, positioning of waiting areas is one of the most important factors in a hospital. Polyclinics are units that serve both internal and external patients. Polyclinic unit brings complexity for their usage is intense. This is a particularly difficult situation for patients. For this reason, polyclinics should have their own entrance doors in general hospital. However, it should not be distant from other hospital units. It is necessary to separate the circulation of hospital units as much as possible. It is also important to keep circulation distances short. In polyclinic waiting areas, the size of spaces is an important factor in affecting comfort conditions. Patients may have to wait for long periods of time in order to arrive at the examination location in outpatient clinics. Waiting is an act which increases stress. The fact that this action takes place in a small and narrow area increases stress. For this reason, comfort conditions are important factors to be considered in terms of the spatial size of waiting areas in hospital design.

As a result of the questionnaire survey users of Tire and Çeşme State Hospitals polyclinic waiting areas observed that patients were mostly complaining about crowded and complicated waiting areas. The most important factor in a crowded waiting areas was found to be the common use of outpatient waiting areas. Users prefer to design waiting areas according to different medical branches, in special and separate spaces. Designed with the help of division elements (glass panel, full wall) and / or in separate spaces.

Material

Material selection is an important element of design in terms of aesthetic appearance and effects created by a place. Many features need to be considered when selecting materials. For example, durability, care, cleanliness, cost, and most importantly, impact on the perception of the place must be taken into consideration. The choice of material can be perceived differently in any one place. Visually, cold, hot, soft, hard, effect can be created. Hospitals are cold and tense environments and the characteristics of the materials used can warm up environment. For example, the use of wood in waiting areas can make the place warmer and reduce the stress of patients. The use of wood in living room is not used in all areas of hospitals as required by the standards. But the use of some wood elements in the walls and ceiling of waiting areas can provide a warmer and more comfortable atmosphere (Figure 6.1).



Figure 6.1. Use of natural materials in the waiting area, a. Madison Women's Health, LLP (<http://media.madisonwomenshealth.com//2013/12/MWH-Interior-2.jpg>, 19.07.2017), b. Deheng Clinic Waiting Room (<http://www.robartsspaces.com/en/projects/deheng-clinic#image1>, 19.07.2017).

Since outpatient clinics are crowded, it is necessary to perform noise control successfully. Noise control should be considered during the design phase of the hospital. One of the features that must be considered when selecting materials for waiting areas is to ask whether the material has sound absorbing properties.

Walls: It is important that the material used on the wall surfaces is durable, easy to clean, anti-bacterial and resistant to flame. The most preferred and recommended material is vinyl coating and latex paint. Vinyl coating is more resistant to stains and abrasion, easy to clean and maintain. It has the same properties as the vinyl coating on floors, but it must be absolutely washable in environments with damp conditions.

Floors: One of the most important features that should be considered on the surface of floors is that they should be non-slip materials. Anti-dirt, anti-bacterial, easy to clean and abrasion resistant materials should be used. In polyclinics, the most suitable material for floor covering is concealed PVC and ceramic coating (Figure 6.2).

Ceilings: Materials used in ceiling coverings must be water-resistant, anti-bacterial and easily cleanable. Suspended ceilings should be preferred in order to allow for the passage of intra structure installation and to intervene when necessary (Figure 6.3).



Figure 6.2. PVC flooring in waiting areas, a. Salisbury Hospital Children's Unit (<https://tr.pinterest.com/pin/435230751480015763/19.07.2017>), b. Kimball's Healthcare waiting room (<http://xoio.de/en/product-visuals-healthcare-brochure-for-kimball-office/19.07.2017>).

According to the results of the questionnaire, the most important feature of users in selecting materials is their antibacterial and hygienic quality. The expectation of users in selecting materials for floors is that they should be non-slippery, anti-bacterial, regular and hygienic. In selected hospitals, light colored ceramics were used as floor covering. According to survey findings, materials used in the floor is suitable for the space and the space is wider and lighter.



Figure 6.3. Acoustic ceiling application, a. Penn Presbyterian Medical Center (<http://www.interiordesign.net/slideshows/detail/9309-iida-announces-winners-of-5th-annual-healthcare-in/22/19.07.2017>), b. Swedish Edmonds Ambulatory Care Center in Edmonds (<http://www.interiordesign.net/slideshows/detail/9309-iida-announces-winners-of-5th-annual-healthcare-in/22/19.07.2017>).

Color

Colors have great influence on human psychology and spatial sensation. Color has an important place among design elements and plays an important role for the happiness and healthy life of individuals. Colors have different meanings, and each color creates different perceptions and effects in the environment.

Colors have important implications in navigation, one of the biggest problems for users. The use of clear colors will be helpful in finding directions in hospitals. Colors can provide effects such as depth, lightness, size and cleanliness. The use of light on colors will make them look lighter and bigger than they actually are. In the outpatient clinics, tranquilizing, calming, soothing light tones and pastel colors should be preferred. Vivid colors should be preferred in children's sections.

As a result of the survey one of the most important features of the users was observed to be the color used in bathrooms. In Tire and Çeşme State Hospitals, the color field used on the walls also shows a refreshing, passive and overwhelming feeling to the users. The most preferred colors on the wall surfaces of users have been found to be pastel shades. Users mostly prefer lightest shades of pink, blue and cream color. Some examples are given in the following six figures (6.4-6.9).



Figure 6.4. Waiting room of Shriners Hospital for children
(<https://tr.pinterest.com/pin/253397916513469603/> 1.08.2017)



Figure 6.5. Lobby of Aiyuhua Hospital for Children and Women
(<http://wikoffdesignstudio.com/aiyuhua-hospital-for-children-and-women-in-beijing/>18.07.2017)



Figure 6.6. Waiting Room of Aiyuhua Hospital for Children and Women
 (<http://www.hksinc.com/places/aiyuhua-hospital-for-women-and-children/18.07.2017>)



Figure 6.7. American Sino Hospital Audong Clinic
 (<https://tr.pinterest.com/pin/351210470927544366/18.07.2017>)



Figure 6.8. Upstate Cancer Center Waiting Room
(http://www.usalighting.com/stuff/contentmgr/files/1/4d30864f2c899cf1ba5d6f3e6ae9b4ef/slides/suny_upstate_cancer_center_41.jpg, 18.07.2017)



Figure 6.9. Memorial Sloan Kettering Regional Ambulatory Cancer Center
(<http://new.aia.org/showcases/14981-memorial-sloan-kettering-regional-ambulatory-cancer-center>, 19.07.2017)

Lighting

Artificial and natural lighting in waiting rooms of polyclinics positively affect patients who have a stressful process. Only the spaces illuminated by artificial lighting are low in terms of the visual comfort of interior space. Lack of connection with the outside environment affects the user negatively. In natural lighting, windows are of great importance. The more the glazed surface is, the more it is possible to take advantage of it without natural illumination. The active use of natural light in the building positively affects patients' stress control, and at the same time helps the patient to navigate. The use of lighting items such as vertical windows and roof skylights in appropriate sizes in polyclinic waiting areas play an important role in user satisfaction. Illumination of the waiting areas of the outpatient clinic should be arranged to provide comfort to users. Artificial lighting suitable for waiting areas should be in the color spectrum close to daylight, at the same time not less than 300 lux.

Survey results show that both hospitals' users were found to be satisfied with the brightness level of waiting rooms. The users place great emphasis on natural lighting. It has been observed that the materials should be those which an area brighter.



Figure 6.10. Natural lighting in hospital, a. Sir Robert Ogden Macmillan Centre (<https://tr.pinterest.com/pin/253397916510425969/> 01.08.2017), b. Saint John of God Hospital (<http://www.interiordesign.net/projects/10191-2014-boy-winner-health-care/> 01.08.2017).

Ventilation

In hospital environments, medical wastes, garbage, medicines, cleaning materials and the smell of the cafeteria can be disturbing. With proper ventilation, it is possible to get rid of these smells.

In general, ventilation systems in accordance with standards must be made in hospital environments and regular maintenance is essential. Natural ventilation is of great importance in polyclinic waiting areas.

For this reason, the natural ventilation system should be considered while the hospital is in the planning phase, and the waiting area of the outpatient clinic should be positioned so as to be able to receive fresh air and natural light.

Survey results show that it is important that ventilation systems are correctly adjusted due to different odors that occur in hospital environment. Another features that is important for users to have adequate natural ventilation.

Audio visual comfort

The use of sound-absorbing materials in living spaces is very important for noise control. In the polyclinic waiting areas, voice masking systems can be used to increase speech privacy by adding white voices and background noise. Establishment of separate waiting areas for each outpatient clinic and the separation of these areas by sound absorbing panels are effective in noise control. Regular maintenance of materials, as well as the use of sound and sound absorbing materials also prevents sound pollution. A library can be an effective solution can be an effective solution or noise prevention, since the presence of a library in the waiting area indicates silence (Figure 6.11).

Survey results show that users most complain about noise. Designing waiting areas in separate spaces will be effective in preventing this pollution. Users are careful in selecting sound absorbing properties in all materials.

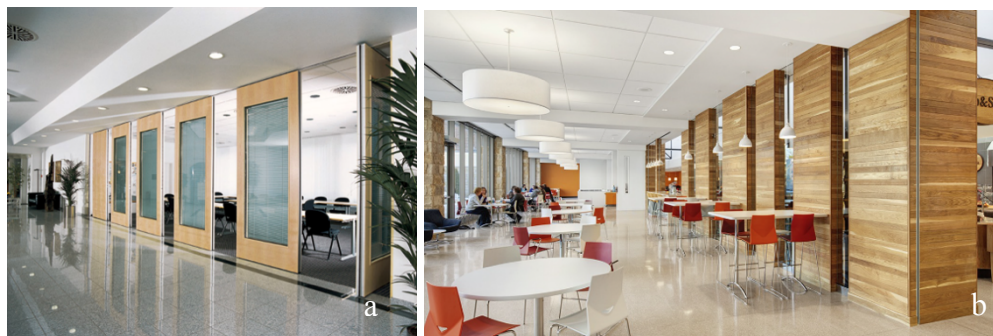


Figure 6.11. Separator panel providing sound insulation, a. (<https://www.sesyalitimi.web.tr/images/stories/human-bolme-duvar-5.jpg>, 18.07.2017), b. St Elizabeth Hospital (<http://www.atmosphereci.com/projects/healthcare/#st-elizabeth-hospital-fremont-tower>,18.07.2017)

Furniture

Furniture used in waiting areas should be anti-microbial and anti-bacterial. That should have water proof property. Use of leather cover on seating elements is recommended.

Leather coating is stain resistant, easy to clean, antibacterial and water resistant. Since the skin coating is more expensive, vinyl coatings having same properties can be used. In waiting areas, ergonomic, stationary and mobile seats (with textile, plastic and metal materials) are easy to clean, durable, anti-bacterial, dirt and water resistant. They should be preferred for the seating elements. A color selection should be made showing the stains for the seats (Fig. 6.12-6.14).

Survey results shows that, selection of furniture is a very important factor for users. They pay attention to the fact that they are more comfortable and warm in furniture. One of the factors that patients mostly complain about is that furniture is metal and cold. The type of seats that the users prefer is the seat, seat and armrest with metal structure with seat and seat. It has been observed that more pink, blue and dark gray colors are preferred for seat upholstery. Users prefer anti-bacterial and easy-to-clean features in furniture upholstery. In the waiting areas, it was seen that the seat layout plan was chosen as the positive effect of socialization and helped to establish eye contact (Fig. 6.13).



Figure 6.12. Furniture samples in polyclinic waiting areas, a. MD Anderson Cancer Center Waiting Area (<https://tr.pinterest.com/pin/256212666276730831/23.07.2017>), b. waiting area of Milford Regional Medical Center (<http://www.milfordregional.org/medical-services/emergency-department/01.08.2017>).



Figure 6.13. Furniture samples, a. (<https://tr.pinterest.com/pin/466052261410349669/01.08.2017>), b. (<https://strongproject.com/image/7993>, 23.07.2017)



Figure 6.14. Furniture samples in clinics, a. Medstar Health Georgetown University Hospital (<http://www.voa.com/portfolio/medstar-health-georgetown-university-hospital-pediatrics-relocation-ob-gyn-expansion/01.08.2017>), b. Coast Medical (<https://medaesthetics.wordpress.com/category/doctors-office-design/01.08.2017>).

Stress-reducing elements

Patients and relatives who are waiting in polyclinics are stressed because they have to wait long hours. The use of natural elements is one of the most important factors in reducing this stress and in accelerating the healing process. Natural environment, daylight, natural ventilation, access to water, use of natural materials, interaction with nature and natural sounds are the most used objects. The use of indoor plants causes serious reductions in stress levels of patients. Because bacteria can spread and cause infections, indoor plants must be selected consciously (Figure 6.15).



Figure 6.15. Use of nature elements, a. Franklin Woods Community Hospital (<http://www.usa.skanska.com/SkanskaNuGet/ImageScaler/Services/GetScaledImage.ashx?id=2c81c6d0-e168-42ca-868c-fd629d26cfa1&h=413>, 18.07.2017), b. Upstate Cancer Center (<https://s-media-cache-ak0.pinimg.com/736x/f5/62/58/f562583d18c5b4edc9b2106ce59dcc02--childrens-healthcare-healthcare-interior.jpg>, 18.07.2017).

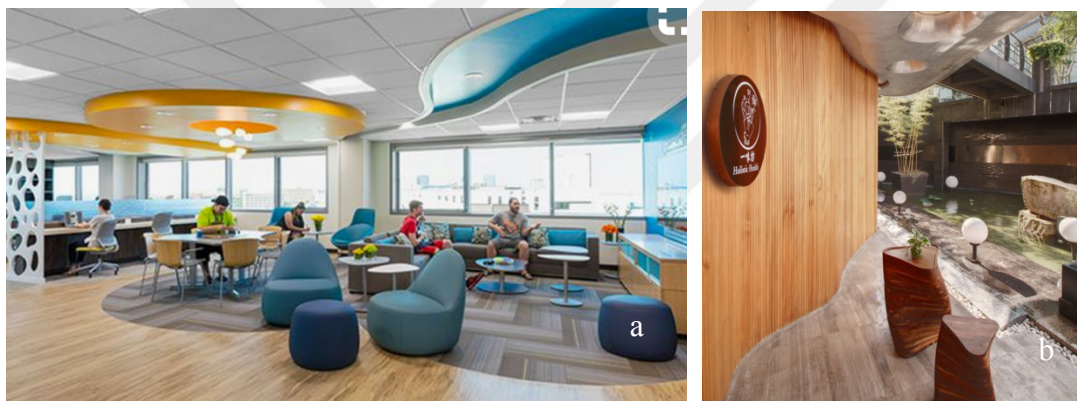


Figure 6.16. Use of natural elements in healthcare, a. Fort Worth Adolescent and Young Adult Oncology Coalition unite (<http://www.healthcaredesignmagazine.com/projects/cancer-care/photo-tour-fort-worth-adolescent-young-adult-oncology-coalition-unit/#slide-2/01.08.2017>), b. One Taste Holistic Health Club (<https://homeadore.com/2012/10/24/taste-holistic-health-club/01.08.2017>).

The use of natural materials can have a relaxing and warm effect on the floor. Natural materials such as wood and natural fibers, nature-inspired wallpapers and/or upholstery can help to achieve a natural environment. It is very important that polyclinic waiting areas are directly linked to nature. It can provide an opportunity for the patient and his/her relatives to calm down and stay away from chaos. It is recommended that at least an opportunity should be provided to see nature in places where there is no access to nature (Figure 6.16).

According to the questionnaire findings, patients prefer to use natural elements. Users want to see more of nature and/or directly reach the garden. Nature elements and/or animal portraits are preferred in pictures and paintings.

Conclusion:

- It is better to design polyclinic waiting areas as separate areas.
- Perception of the users is more influenced by the colors used on the floor.
- All surface materials must be easy-to-clean and anti-bacterial.
- The material used on the floor should have non-slippery properties.
- Wear-resistant and easy to maintain materials should be used.
- The material used on the floor should create a sensation of lightness and wideness.
- The use of wooden materials may preferred as it creates a warm sensation.
- Concrete, PVC and/or ceramic coating are suitable in covering floors.
- Vinyl coating and/or paint may be preferred on wall surfaces.
- Suspended ceilings should be preferred in waiting areas.
- Color selection is one of the most important factors affecting spatial satisfaction. Proper use of colors is very important for users.
- Pastel colors should be preferred. (Figure 6.5, 6.6, 6.7, 6.8, 6.9)
- Vivid colors should be preferred in children's sections. (Fig 6.4)
- It is important that a selected color creates a more spacious perception.
- Unobtrusive and relaxing colors should be preferred.
- It is of utmost importance that an area benefits from adequate natural lighting. (Fig 6.10)
- In areas where natural lighting is not sufficient, it is important to set the level of artificial lighting correctly.
- Artificial lighting characteristics should be in the color spectrum close to the sunlight.
- Correct ventilation systems should be designed.
- Regular maintenance of ventilation systems is important.
- The place should benefit from natural ventilation.
- Separate waiting areas are required for each outpatient clinic.

- Standby areas should be separated by sound-absorbing panels.
- It is important that the surrounding materials have sound absorbing properties.
- It is possible to prevent the noise pollution caused by the material by regular maintenance.
- A library can be used to show that the waiting area of the outpatient clinic needs to be kept quiet.
- It is possible to reduce noise pollution caused by people talking in a waiting area by using white sound music.
- Furniture material should have anti-bacterial and easy-to-clean properties.
- The seats should be vinyl and / or leather coated.
- The seats must be ergonomic.
- More vivid colors can be used for seats in children's outpatient clinics.
- Seat layout should be effectively providing socializing and eye contact.
- Inner garden and/or indoor plants may be used for the relaxation of patients.
- It should be possible to see nature directly.
- Paintings and/or pictures of natural elements can be used.
- Natural sounds and the use of aquariums are effective in lowering stress level of patients.

In this study, the internal quality of patients' waiting areas in hospitals have been evaluated by the evaluation of the users. A human-centered design approach was emphasized. The physical and psychological effects of interior spaces on the users were investigated. This research, has aimed to increase our awareness about the quality of waiting areas, and suggestions were given to improve indoor quality.

In order to make the right decisions in the formulation of the plan of the results of this research, it is necessary to take account of the project stage. One of the most important considerations is that an interior design of any space is done by someone who is knowledgeable and experienced in this regard. For this reason, it would be more accurate and appropriate for the interior architect to design the interior of such a project. The main purpose of this study was to present proposals for evaluating and improving the outpatient waiting areas in hospitals in terms of interior design. But this study can be continued in other units of hospitals. For example, doctor's rooms, healthcare personnel recreation areas and/or refectories can be explored and studied.

It was observed that the acoustics, ventilation and lighting factors were very important for users in waiting rooms of outpatient clinics. Therefore, further studies about these indoor parameters can be done. Further studies have a potential in creating an awareness in designing healthy, secure and relaxing work environments while also supporting health personal's physical and psychological health.

LIST OF REFERENCES

- Akdağ, R., Tosun, N. & Çaylan, A.K. (2010) (Eds). *Türkiye Sağlık Yapıları Asgari Tasarım Standartları Kılavuzu*. T.C. Sağlık Bakanlığı İnşaat ve Onarım Dairesi Başkanlığı. Accessed: (<https://www.csb.gov.tr/db/aksaray/duyurular/duyurular476.pdf>)
- Altman, I., Wohlwill, F. (1975). Human Behavior and the Environment. *Behavior and the Natural Environment*, 6, 85-125.
- Altuncu, D., Tansel, B. (n.d.). Aydınlatma kontrol sistemlerinin hastanelerde kullanımı. *Journal of Mimar Sinan Güzel Sanatlar University*.
- Andrade, C., Lima, M., Fornara, F., Bonaiuto, M. (2012). User's views of hospital environmental quality: Validation of the perceived hospital environment quality indicators (PHEQIs). *Journal of Environmental Psychology*, 32, 97-111.
- Andrade Campos, C., Sloan Devlin, A. (2015). Stress reduction in the hospital room: Applying Ulrich's theory of supportive design. *Journal of Environmental Psychology*, 41, 125-134.
- Aras Genç, U. (2009). *Hastane Yapılarında Steril Alan Uygulama Sorunlarının Konya-Meram Tıp Fakültesi Örneğinde İrdelenmesi ve Çözüm Önerileri*, Master thesis, Selçuk University, Konya.
- Aydıntan, E. (2001). *Yüzey Kaplama Malzemelerinin İç Mekan Algısına Anlamsal Boyutta Etkisi Üzerine Deneysel Bir Çalışma*, Master thesis, Karadeniz Teknik University, Trabzon.
- Barışık, P. (2013). *Hastanelerin Poliklinik Alanlarının Tasarımında Davranışsal ve Duyumsal Konfor Parametrelerinin Mekansal Organizasyonla İlişkisi*, Master thesis, Beykent University, Istanbul.
- Başkaya, A., Yıldırım, K., Muslu, M. (2005). Functional and perceptual quality of polyclinic waiting halls: Ankara, İbni Sina Hospital Polyclinic. *Journal of Gazi University*, 20, 1, 53-68.
- Berberoğlu, Ö. (2010). *Algı, Sınır, Kişisel Alan Kavramları ve Hastane Tasarımı*, Master thesis, Istanbul Teknik University, Istanbul.
- Bulgurcu, H. (2015). *Havalandırma Yöntemleri*, http://deneysan.com/Content/images/documents/hava-02_29902939.pdf
- Çetindağ, K. (2007). *Işık ve Renk Kullanımının Mekan Algılamasına Etkisi Üzerine Bir Araştırma (Sultanahmet Meydanı Örneği)*, Master thesis, Istanbul University, Istanbul.
- Dalke, H., Little, J., Niemann, E., Camgoz, N., Steadman, G., Hill, S., Stott, L. (2006). Colour and lighting in hospital design. *Optics & Laser Technology*, 38, 343-365.

- Darcın, P., Balanlı, A. (2012). Yapılarda doğal havalandırmanın sağlanmasına yönelik ilkeler. *Journal of Tesisat Mühendisliği*, 128, 33-42.
- Dikmen, O. (2012). *Children's Hospital Schools as Social Environments and Their Effects on Healing and Well-Being: Case Study in Izmir Behçet Uz Children's Hospital School*, Master thesis, Izmir University of Economics, Izmir.
- Erdemli, E., Esen, I., Hilal, S., Jakshybekov, K., Oktem, Z., Özmen, I., Şengül, B., Turgay, A., Tunger, C., Zeka, B. (2012). *Design Guidelines for Nonclinical Areas in Hospitals: Case of Güven Hospital*, Graduate student work, University of Bilkent, Ankara.
- Göler, S. (2009). *Bicim, Renk, Malzeme, Doku ve Işığın Mekan Algısına Etkisi*, Master thesis, Mimar Sinan Güzel Sanatlar University, Istanbul.
- Karakaşlı, G. (2010). *Hastanelerde Poliklinik ve Tanı Birimleri Arası Sirkülasyon ve Fonksiyonel Konfor Analizi*, Master thesis, Gazi University, Ankara.
- Kuruçelik, G. (2009). *Hastanelerin Acil Servis Tasarımında Bir Kalite Değerlendirme Modeli*, Master thesis, Karadeniz Teknik University, Trabzon.
- Orkun Baki, A., Arslan, A., Boylu, A., Evren, E., Gacaner, G., Gencer, U., ve diğerleri. (n.d.). Hastane hijyenik alanlarının klima ve havalandırma proje hazırlama esasları. *IX. Ulusal Tesisat Mühendisliği Kongresi*, 1205-1229.
- Özdemir, T. (2005). Tasarımda renk seçimini etkileyen kriterler. *Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi*, 14, 2, 391-402.
- Poulin, M. C., Aia, A. (n.d.). *Interior Design for Health Care*. 247-260.
- Şahin, İ. (2016). *Hastane Yapılarında Kullanılan Özellikli İnce Yapı Malzemeleri*, Master thesis, Dokuz Eylül University, Izmir.
- Uzunay, S. (2011). *Hastane Yapılarının Planlanması ve Hastanelerde Sirkülasyon*, Master thesis, Haliç University, Istanbul.
- Ulrich, R., Simons, R.F., Losito, B.D., Fiorito, E., Miles, M.A., Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology*, 11, 201-230.
- Ulrich, R. S., Zimring, C.M, Zhu, X., DuBose, J., Seo, H., Choi, Y., et al. (2001). A review of the research literature on evidence-based healthcare design. *Journal of Health Environments Research and Design Journal*, 1, 61-125.
- Ünver, R. (2006). *Hastanelerde Yön Bulma Davranışının Öznel ve Nesnel Açından İrdelenmesi*, Master thesis, Istanbul Technical University, Istanbul.

Yılmaz, Ç. (2012). *Hastane Binalarında Yeme İçme Alanlarının Kullanıcı Memnuniyeti Açısından Değerlendirilmesi*, Master thesis, Istanbul Teknik University, Istanbul.

Url-1. Accessed on 06.2017 to
(<http://www.saglikplatformu.com/haberler/Ayrinti.asp?HaberNo=3747>).

Url-2. Tire State Hospital official website. Accessed on 07.04.2017 to
(<http://tiredh.saglik.gov.tr/>).



APPENDICES



APPENDIX A. RESEARCH QUESTIONS IN ENGLISH

PRELIMINARY SURVEY QUESTIONS

1. Gender?

Female Male

2. Your age group?

18-20 21-25 26-30 31-40 41-50 51-60 +60

3. Have you any handicaps?

No Visual Audial Walking Other

4. Reason for being in this hospital?

Patient Relative/friend of patient

5. Which area of specialization in your illness related?

LOCATION AND ATMOSPHERE OF WAITING AREAS

1. Can you find your way easily in watching your waiting area?

Yes No

2. Hospital waiting areas should be designed specially and individually for each area of specialization.

Totally disagree	I disagree	No decision	I accept	Totally agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. What feeling do the common use of waiting halls create on you?

Wide	Crowded	Noise	Hygienic	Anti hygienic	Increases stress	Chaotic	Privacy violation	Increase mood	Lowers mood
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Can you see or hear whenever it is your turn to see a doctor, from signs or secretary's station?

Yes No

5. Each waiting area should be designed appropriate to that clinics paints and specially (for example. children, birth, etc.)

Totally disagree	I disagree	No decision	I accept	Totally agree

6. Please select your own method in designing waiting areas separated by medical branches.

Dividing by separator (glass panels, full walls)	
By separating an individual space for each	
Designing by placing seat and furniture	
Other space dividing elements (greening, aquarium, etc.)	

COLOR OF MATERIALS ON SPACE FACADES

7. With which of the following do you define the color creates its effect on you?

Warm	Spacious	Small	Narrow	Hygienic	Illuminous	Orderly
Cold	Boring	Big	Wide	Anti hygienic	Dark	Disorderly

8. Which of the following feeling does the color of the wall create on you?

Exhilarating	Spacious	Comforting	Energetic	Passivating	Stress-increasing
Gloomy	Boring	Depressing	Motivating	Soothing	

9. The color of the wall in this space is correct.

Totally disagree	I disagree	No decision	I accept	Totally agree

10. Which of the following definitions suit the role of the material used on the floor?

Warm	Spacious	Small	Narrow	Hygienic	Illuminous	Orderly
Cold	Boring	Big	Wide	Anti hygienic	Dark	Disorderly

11. Which of the following features suit the material used on the floor?

Non-slip	Shiny	Dull	One piece	Absorbs noise	Anti bacterial	Easy to clean	Non-stain

12. The materials used in the waiting area are suitable.

	Totally disagree	I disagree	No decision	I accept	Totally agree
Floor					
Wall					
Ceiling					

13. Please write three of your color choices (1 best) for the walls of this space.

1. Choice	2. Choice	3. choice

Color Scale:



FURNISHING AND PLAN LAYOUT

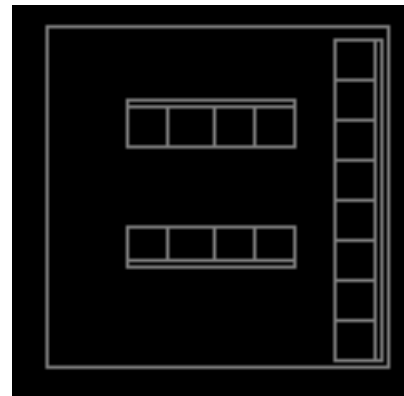
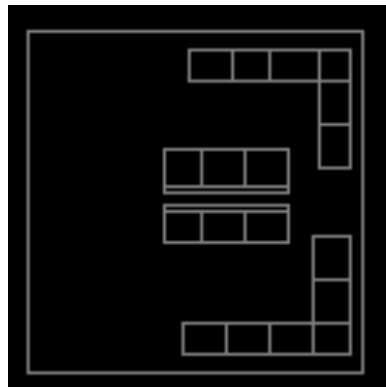
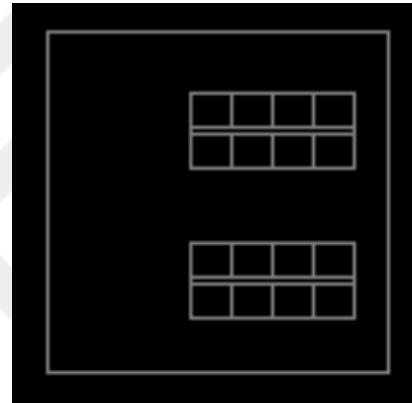
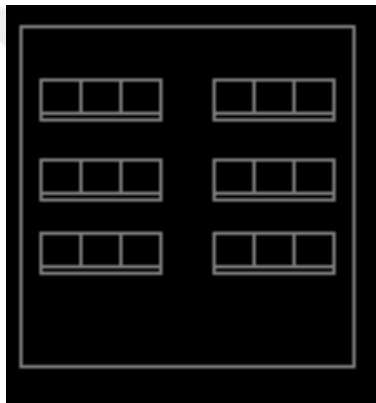
14. Please indicate the effect of the cover material of seating elements in this space.

Warm	Cold	Comfortable	Uncomfortable	Hygienic	Anti hygienic	Aesthetic	Unaesthetic

15. Indicate your expectations for the cover material of seating elements in this space.

Shiny	Slippery	With texture	With design	Plain

16. Which of the chair layout below do you prefer for this space?



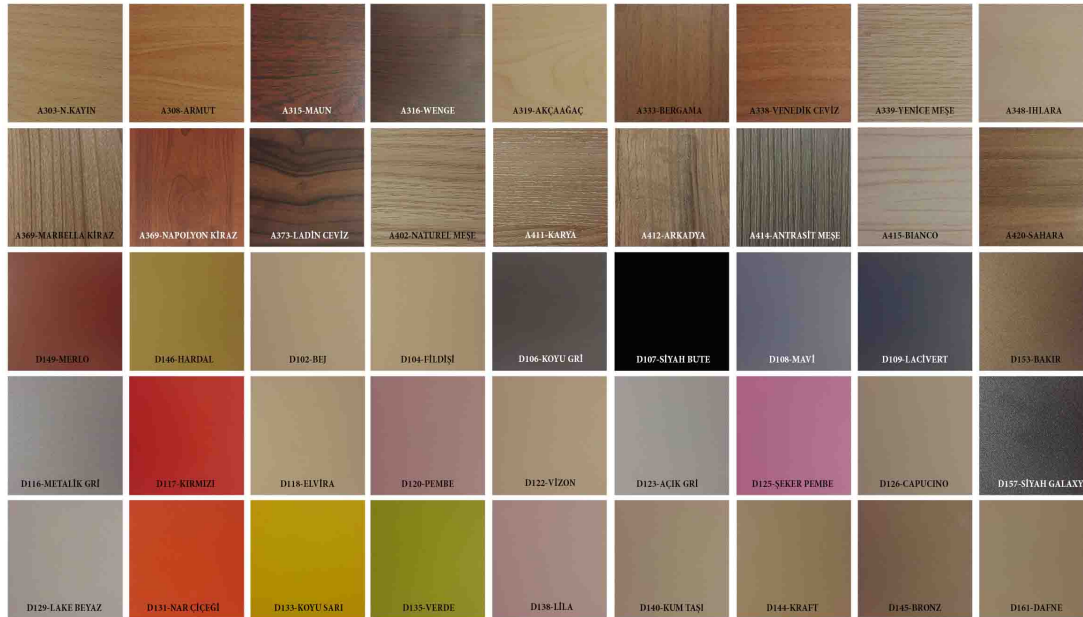
17. Which form and material do you prefer for the furniture in this space?

Leather coated / sitting, Metal structure + Hand rail, Set of 3	
Textile coated / Sitting, Wood structure + Without hand rail, Set of 3	
Metal / sitting, Metal structure + Hand rail, with stand / Set of 2	
Textile coated / Sitting, Wood structure + With hand rail, with stand / Set of 2	
Leather coated / sitting, Metal structure + Set of 3 or 4	

18. Make your preference (1 best) of color for the furniture of this space.

	1. choice	2. choice	3. choice
Arm chair			
Stand			

Color and Material Scale:



19. Does the material used for the sitting element of this space enhance sitting activity more comfortable?

Yes No

20. Is the color of furniture used for chair and table in this space suitable?

Yes No

21. Mark the effect that color of furniture in this created on you.

Warm	Comforting	Spacious	Heavy	Hygienic	Aesthetic
Cold	Stress increasing	Boring	Light	Anti-hygienic	Anti-aesthetic

22. The layout of furniture in this space is suitable in terms of function.

Totally disagree	I disagree	No decision	I accept	Totally agree

23. This space is big enough and the density of furniture (size and ration to m2) is suitable.

Totally disagree	I disagree	No decision	I accept	Totally agree

24. What emotions does the layout of furniture in this space create on you?

Spacious	Crowded	Calming	Stress increasing	Aesthetic	Anti aesthetic	Plain	Chaotic	Boring

25. Sitting elements (chair, arm chairs) used in this room suit human dimension (form and size).

Totally disagree	I disagree	No decision	I accept	Totally agree

LIGHTING

26. Artificial lighting conditions are sufficient for this room.

Totally disagree	I disagree	No decision	I accept	Totally agree

27. Natural lighting in this room is sufficient.

Totally disagree	I disagree	No decision	I accept	Totally agree

ACOUSTIC

28. Noise control is successfully done in this space.

Totally disagree	I disagree	No decision	I accept	Totally agree

29. The noise coming from outside the room is uncomfortable.

Totally disagree	I disagree	No decision	I accept	Totally agree

ART FACTS

30. Which of the following topics have been visually preferred in this space.

Landscapes	
Human portraits	
Animal portraits	
Aesthetic work	
Sculpture	

USE THE NATURAL ELEMENTS

31. The natural parameters write below does reduce the stress on the waiting areas.

	Totally disagree	I disagree	No decision	I accept	Totally agree
Use the natural light					
Natural ventilation					
Touching water					
Listening natural noises					
Watching water					

32. In which of the following ways would you prefer visual connections in waiting areas?

Direct connection to garden	
Interior garden	
A good landscape view	
Do not want any	

33. Please indicate any proposals of complaints you have so that the level of comfort and expectation of waiting areas can be increased.



APPENDIX B. RESEARCH QUESTIONS IN TURKISH

ÖN ANKET SORULARI

1. Cinsiyetiniz?

Kadın Erkek

2. Yaşınız?

18-20 21-25 26-30 31- 40 41-50 51- 60

60 üstü

3. Herhangi bir engeliniz var mı?

Hayır Görme İşitme Yürüme Diğer

4. Hastanede bulunma sebebiniz?

Hasta Hasta yakını

5. Sağlık sorununuz hangi branşla alakalı?

BEKLEME ALANLARININ KONUMU VE ATMOSFERİ

1. İstedığınız bekleme alanına gelmek için hastanede **kolayca yönünüzü bulabiliyor musunuz?**

Evet Hayır

2. Hastane bekleme alanları farklı branşlar ve uzmanlıklar açısından **özel ve ayrı mekanlar olarak tasarlanmalıdır.**

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

3. Hastane bekleme alanlarının **ortak olarak kullanılması** sizde nasıl hisler bırakıyor?

Ferah	Kalabalık	Gürültülü	Hijyenik	Anti hijyenik	Stres Arttırıcı	Karmaşık	Mahremiyeti İhlal edici	Moral Arttırıcı	Moral Düşürücü

4. Sıranızın geldiğini tabelalardan veya sekreter istasyonundan rahatlıkla görüp veya duyabiliyor musunuz?

Evet Hayır

5. Her branşın bekleme alanı o bölümün **hastasına uygun ve özel** olarak tasarlanmalıdır (Örneğin Çocuk Bölümü, Kadın Doğum, Psikiyatri, Ortopedi, KBB, Dahiliye)

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

6. Bekleme alanlarını **branşlara göre ayırarak tasarlanmanın uygun yöntemi?**

Bölücü elemanlarla ayırmak(cam panel, dolu duvar)	
Ayrı mekânlar halinde	
Koltuk yerleşim planı ile	
Diğer mekân sınırlayıcı elemanlarla (akvaryum, yeşil alan, sanat objeleri, su öğeleri)	

MEKÂN YÜZEYLERİNDE RENK VE MALZEME

7. Mekânda **duvar renginin sizin üzerinizde yarattığı etkiyi** aşağıdaki tanımlamalardan hangisi/hangileri ifade etmektedir?

Sıcak	Ferah	Küçük	Dar	Hijyenik	Aydınlık	Düzenli
Soğuk	Sıkıcı	Büyük	Geniş	Anti hijyenik	Karanlık	Düzensiz

8. Bu mekânda **duvar rengi seçimi** sizde nasıl hisler bırakıyor?

Neşelendirici	Ferah	Rahatlatıcı	Enerjik	Pasifleştirici	Stres arttırıcı
Kasvet Verici	Sıkıntılı	Bunaltıcı	Motive Edici	Dinlendirici	

9. Bu mekânda **duvar renk seçimi uygundur.**

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

10. **Zeminde kullanılan malzemenin** sizin mekân algınızdaki rolünü aşağıdaki tanımlamalardan hangisi/hangileri ifade etmektedir?

Sıcak	Ferah	Küçük	Dar	Hijyenik	Aydınlık	Düzenli
Soğuk	Sıkıcı	Büyük	Geniş	Anti hijyenik	Karanlık	Düzensiz

11. Kullanım açısından mekânda kullanılan **zemin malzemesi** ile ilgili tanımlamalardan hangisi/hangileri sizin için önemlidir?

Kaymaz	Parlak	Mat	Derzsiz (tek parça)	Ses emici	Anti bakteriyel	Kolay temizlenen	Leke Tutmayan

12. Bekleme alanında kullanılan malzemeler uygundur.

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Zemin					
Duvar					
Tavan					

13. Bu mekânın **duvarlarının rengi** ile ilgili 3 tercihinizin numarasını (1 en çok tercih ettiğiniz renk olacak şekilde) diğer sayfadaki renk skalasından yararlanarak yazınız.

1. Tercih	2. Tercih	3. Tercih

Renk Skalası:



MOBİLYANIN MALZEMESİ VE YERLEŞİMİ

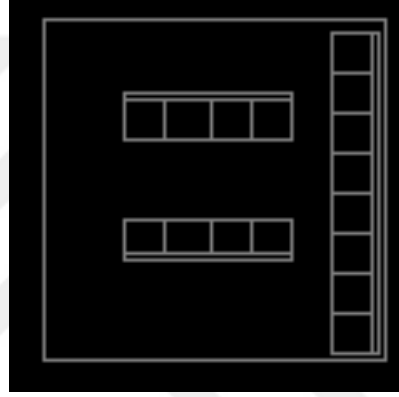
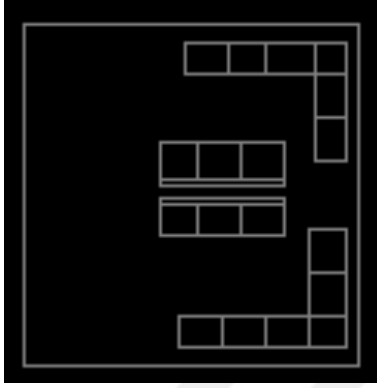
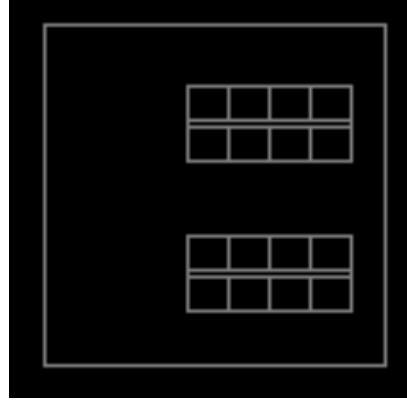
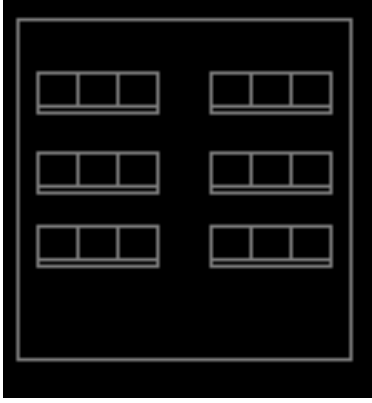
14. Bu mekânda **oturma elemanlarının (sandalye, koltuk) döşeme malzemesinin** sizin üzerinizde yarattığı etkiyi yandaki sıfatlarla eşleştiriniz.

Sıcak	Soğuk	Rahat	Rahatsız	Hijyenik	Anti hijyenik	Estetik	Anti estetik

15. Bu mekânda **oturma elemanlarının (sandalye, koltuk) döşeme malzemesi** hakkında beklentinizi yandaki sıfatlarla eşleştiriniz.

Parlak	Kaygan	Dokulu	Desenli	Yalın

16. Bu mekânda aşağıda görmüş olduğunuz hangi resim/resimlerdeki **koltuk yerleşim planını** tercih edersiniz?



17. Bu mekânın **mobilyaları için aşağıda görmüş olduğunuz hangi şekil ve malzemeyi** tercih edersiniz?

Deri kaplama oturma yeri, Metal taşıyıcılı + Kolçaklı, üçlü düzen	
Tekstil kaplama oturma yeri, Ahşap taşıyıcılı + Kolçaksız, üçlü düzen	
Metal Oturma ve dayanma yeri, Metal taşıyıcılı + Kolçaklı, ikili düzen + sehpalı	
Tekstil kaplama oturma yeri, Ahşap strüktür + Kolçaklı, ikili düzen + sehpalı	
Deri kaplama oturma yeri, Metal taşıyıcılı; üç, dört veya tekli koltuk takımı	

18. Bu mekandaki **mobilyaların (oturma elemanları ve sehpa) rengi ve malzemesiyle ilgili 3 tercihinizin numarasını (1 en çok tercih ettiğiniz renk ve malzeme olacak şekilde) diğer sayfadaki renk skalasından yararlanarak yazınız.**

	1. Tercih	2. Tercih	3. Tercih
Koltuk			
Sehpa			

Renk ve Malzeme Skalası:



19. Bu mekandaki **oturma elemanlarının malzemesi sizce oturma eylemini konforlu kılıyor mu?**

Evet Hayır

20. Bu mekânda **mobilyalar (oturma elemanları, masa) için kullanılan renk sizce uygun mudur?**

Evet Hayır

21. Bu mekânda **mobilyaların (oturma elemanları, masa) renginin sizin üzerinizde yarattığı etkiyi** yandaki sıfatlarla eşleştiriniz.

Sıcak	Dinlendirici	Ferah	Ağır	Hijyenik	Estetik
Soğuk	Stres arttırıcı	Sıkıcı	Hafif	Anti hijyenik	Anti estetik

22. Bu mekânda **mobilyaların plan yerleşimi mekânların fonksiyonu** açısından uygundur.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

23. Bu mekân **yeterli büyüklükte ve mobilyaların yoğunluğu** (m2'ye göre büyüklüğü ve oranı açısından) uygundur.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

24. Bu mekandaki **mobilyaların plan yerleşimi sizde nasıl hisler bırakıyor?**

Ferah	Kalabalık	Dinlendirici	Stres Arttırıcı	Estetik	Anti-estetik	Yalın	Karmaşık	Kasvetli

25. Bu mekandaki **oturma elemanları (sandalye, koltuk) ergonomik açıdan (boyutları, biçimi)** uygundur.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

AYDINLATMA

26. Bu mekânda **yapay aydınlatma** koşulları yeterlidir.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

27. Bu mekânda **doğal ışık** yeterlidir.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

AKUSTİK

28. Bu mekânda **gürültü kontrolü başarılı** bir şekilde yapılmıştır.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

29. Bu mekânda mekân haricinden gelen gürültü rahatsız edicidir.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum

SANAT OBJELERİ

30. Bu mekânda hangi konuyu ele alan bir görsel olmasını tercih edersiniz?

Doğa manzarası	
İnsan portresi	
Hayvan portresi	
Soyut çalışma	
Heykel	

DOĞA ELEMANLARININ KULLANIMI

31. Aşağıda yazılı olan **doğaya ait parametreler bekleme alanındaki stresinizi azaltır.**

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Doğal ışığın aktif kullanımı					
Doğal havalandırma					
Suya dokunma					
Doğa seslerini dinleme					
Suyu izleme					

32. **Bekleme alanlarının doğayla bağlantısını** hangi şekil / şekillerde görmek istersiniz?

Doğrudan bahçeye bağlantı	
İç bahçe	
Doğa manzarası	
İstemiyorum	

33. Değerli katılımcı lütfen bekleme alanlarındaki konfor ve beklenti düzeyini arttırabilmemiz için şikâyet ve önerilerinizi bizimle paylaşabilirsiniz.

