EMERGENCY WAITING ROOMS: DEFINING NEEDS OF USERS AND SOLUTIONS

NİHAN DALOĞLU

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EMERGENCY WAITING ROOMS: DEFINING NEEDS OF USERS AND SOLUTIONS

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Submitted by **Nihan DALOĞLU**

Approval of the Graduate School of Natural and Applied Sciences, Çankaya University.

Prof. Dr. Taner ALTUNOK
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

Prof. Dr. A. Zeynep ONUR
Head of Department

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

Prof. Dr. Arda DÜZGÜNEŞ
Supervisor

Examination Date: 19.09.2014

Examining Committee Members

Assoc. Dr. Z. Ezgi KAHRAMAN	(Çankaya Univ.)
Prof. Dr. Arda DÜZGÜNEŞ	(Çankaya Univ.)
Assoc. Prof. Dr. Çağrı İmamoğlu	(Bilkent Univ.)

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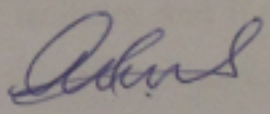
Name		DALOĞLU
Signature	:	
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ABSTRACT

EMERGENCY WAITING ROOMS: DEFINING NEEDS OF USERS AND SOLUTIONS

DALOĞLU, Nihan

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Emergency rooms (ER) of hospitals could be chaotic places for those who experiences them, because of factors including insufficient facilities and the condition people are in while entering the ER. The aim of this study was to examine such deficient properties so as to have solutions for them and increase the comfort level of emergency departments for patients and their companions.

I chose this topic because as a one-time user and an impartial observer, I have personally experienced these shortcomings. Three private hospitals in Antalya were specified by a hat draw to be used in exemplifying their most salient deficiencies. Case studies, questionnaires, observations, interviews were used to identify these shortcomings.

In conclusion, this study identifies several deficiencies, which can be based on the literature and on the experience of both users and companions. While analyzing the collected data, solutions for increasing the comfort level of an emergency service were also obtained.

Keywords: emergency department, waiting room, healthcare design.

ÖZ

ACİL SERVİS BEKLEME SALONLARI: İHTİYAÇLARIN BELİRLENMESİ VE ÇÖZÜMLENMESİ

Daloğlu, Nihan
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Hastane acil servislerinin yetersiz özellikleri ve kişilerin acil servislere giriş yaparken bulunduğu durum, hastalar ve onlara eşlik eden yakınları için travmatik bir ortam oluşturur. Bu çalışmanın amacı; hastane acil servislerindeki yetersiz donanımsal özellikleri saptayıp bunlara çözüm üretmek ve kullanıcılar için rahatlık seviyesini arttırmaktır.

Bir kullanıcı ve gözlemci olarak, acil servislerde deneyimlediğim eksiklikler sonucu bu tezin konusu ortaya çıkmıştır. Antalya merkezinde kura çekimi sonucu 3 tane özel hastane seçilmiştir. Bu hastaneler üzerinden; yapılan araştırmalar, anketler, röportajlar ve gözlemler sonucu ortaya çıkan acil servis donanımsal eksiklikleri örneklendirilmiştir.

Sonuç olarak bu çalışma; hastane acil servislerinde yapılan araştırmalar ve incelemeler sonucunda hastanelerin bu departmanında önemli eksiklikler olduğunu savunmaktadır. Toplanan verilerin ışığında bu eksiklikler için çözümler sunulmaktadır. Amaç; hastane acil servislerinin, kullanıcılar için iyileştirilmesi ve bu ortamın kişiler için daha rahat bir mekan haline getirilmesidir.

Anahtar Kelimeler: acil servis departmanı, bekleme odası, sağlık tasarımı.

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CHAPTER 1

1. Introduction

In this chapter, the aim of the study and the chosen methodology is being generally determined. This section also lights what to expect from the following chapters.

1.1. Argument

It is an *a-priori* fact that emergencies have a crucial importance for the maintenance of human life. This is why it is efficient to define the problems that ER's (emergency room) have and come up with a solution for users to have a higher comfort level. As it is known, emergency rooms are chaotic places where anyone can experience traumatic situations. Also, the time that the users (patients and their companions) will spend in an ER cannot be foretold. Thus, these services are generally also provided with waiting rooms for family members and, for whoever the emergency patient come with. In other words, these waiting rooms are not just for the patients but for the healthy people. Thus, their needs that take the priority and what they experience during the time they are waiting there using this facility.

According to preliminary interviews with both staff and departing family members, a certain number of problems were roughly identified. This situation is also mentioned in the literature as well as in current news media from time to time. There are certain incidents that involve the appropriateness of the facility for the people using the emergency department waiting rooms. There are usually facilities for continued body needs for people already having a hard time both psychologically and physiologically. Sometimes there is no water, sometimes there is nothing to eat. The American Institute of Architects (1996-1997) [1] stated; public waiting area with toilet facilities, drinking fountains and telephones shall be provided. …

Communication center shall be convenient to nursing station and have radio, telephone, and intercommunication systems.
In this study, the aim was to identify needs of patients and relatives in the light of the literature, observations, questionnaires and analysis of collected data.

To draw limitations for not getting lost in a comprehensive amount of knowledge and cases, the study area was delimited by the research methods as decided.

The fundamentals and the history of hospitals and emergency rooms are explained in further remaining chapters. The aim of this research was to understand the essentials and the aims of healthcare units design. By the help of this information, the most critical needs of emergency rooms were identified which gave me the opportunity of comparing written facts with real life.

1.2. Objectives

The objective here was to make people as comfortable as possible while waiting for their relatives to be treated or for their turn to be treated. To classify the objectives in subtitles there are two groups that were defined as ‘main’ and ‘secondary’.

The main objectives of this study were;

a) calculating the approximate circulation of the emergency department according to the chosen city and hospital type
b) to define the fundamental and essential needs of the patients and their relatives
c) to prepare a proposal list for the hospitals in order to improve the conditions of the emergency departments and increase the diversity of services as well as the comfort level

The secondary objectives were;

a) to define the aim and the history of the emergency rooms to determine the deficiencies of the facilities, the comfort level for users

1.3. Procedure

The study was carried out on the basis of three different data collection techniques. One was literature survey. The second was direct observation. The third one was individual interviews and questionnaires, where possible with staff, where not with people who have used these emergency waiting room facilities and were exiting the hospital.

The first step was to have a general survey to specify the subject domain including the history of emergency department also known as casualty department, to understand the aim and the benefits of the emergency rooms and to conceive what was written before and how those writings were handled about emergency services. This search generates the opportunity to compare the previous observations and the questionnaire reports with the authorized papers and case studies.

The second step was to observe directly to better understand how these chosen hospitals were working and how many people were using their facilities in chosen days and ours. With the help of this procedure it was easier to calculate what was deficient and what could be done for these insufficient situations. For four weeks, every Monday, Thursday and Friday, three hours were separated for observing the chosen hospitals. Three private hospitals were chosen. The reason to choose private hospitals was the way these hospitals being more efficient in terms of giving appointment and test results. Also the circulation in this kind of hospitals are more variable in terms of patients than the others according to the economic conditions of users and their types of disease.

These three hospitals were taken from ten private hospitals from within the city limits of Antalya. The reason that there were three samples is that it would be more appropriate, scientifically speaking, not to identify any sample to avoid bias in the investigation. So these three hospitals were chosen by a hat draw to give all the private hospitals equal chances for being studied without any prejudice. The reason for these three hospitals to be chosen was to make it possible for comparing and exemplifying the determined improving factors for emergency rooms. The first observing session was in the morning, the second was at the midday and the third

session was at the evening. Every week the hours for the each hospital were changing so that all of them were observed equally. According to these observations the approximate circulation of the emergency services were designated.

Before observing, the author negotiated with the administration to have their permission for the observation process. Hospitals agreed to let this study to be put in the practice except one. Because of this delimitation, as a result of another hat draw, one of the hospitals was changed but he result was the same. Although, the author kept making observations but was not able to take photos. All hospitals demanded to stay unidentified. This is why none of the hospital names is mentioned throughout the investigation in this thesis.

The third step was to prepare a questionnaire for users to answer to have their opinions about the drawbacks of the emergency rooms they are using, and what can or should be done for an addition to make the emergency services become more advanced. Also the author made interviews with the staff of each sample hospitals. Interviews in each hospital were conducted with junior medical staff. These interviews were designed by the author to elicit not directly but indirectly the insufficient facilities of emergency waiting rooms.

1.4. Disposition

There are five chapters in this thesis. The first chapter contains the argument, the objectives and the procedure of the investigation along with this disposition which sums up what follows in the remaining chapters, gives a general overview of its most salient aspects.

The second chapter presents a summary of literature on various aspects of emergency department waiting rooms along with the kinds of hospitals and emergency service waiting room design.

The third chapter continues with method and material. The materials used in this study are the emergency waiting rooms from the chosen hospitals. Questionnaire, observations, interviews and data analysis are used as methods.

In the fourth and the final chapter, the conclusion of the whole study is presented.

CHAPTER 2

LITERATURE SURVEY

In this chapter literature survey on history of emergency room and specialties of emergency services are discussed to conceive better how this department works. Determining the different kinds of hospitals follows this. This section ends with explaining the design ideas on emergency service waiting rooms.

2.1. Development of Emergency Rooms

To start with the question what is an emergency department, Rockwood and Mann (1976) [2] stated about this question that; ‘’Emergency medical services (EMS) may be defined as a total and complete system capable of responding to the medical and surgical emergencies of a community with prompt and adequate emergency care.’’

Buck and Stedman (1928) [3] stated;

> ‘’Accident services were already provided by workmen's compensation plans, railway companies, and municipalities in Europe and the United States by the late mid-nineteenth century, but the first specialized trauma care center in the world was opened in 1911 in the United States at the University of Louisville Hospital in Louisville, Kentucky, and was developed by surgeon Arnold Griswold during the 1930s. Griswold also equipped police and fire vehicles with medical supplies and trained officers to give emergency care while end route to the hospital. (Wood, 1908) The history of emergency services hinges upon late 19th century.’’

As Marberry (1997) [4] stated, by Commercial hospital the first known ambulance service was operated in 1865i Cincinnati, Ohio.

Figure 1. The first known ambulance sample [5]

The Emergency Medicine residency program began in 1974, funded by a grant from the Robert Wood Johnson Foundation, as a two-year program in the Department of Surgery.

2.2 Types of hospitals

There are five types of hospitals. In this study, general hospitals are examined and within the general hospitals, private hospitals were chosen.

A) General hospitals

The most known type of hospitals is the general hospital. The aim of these kind of hospitals is to deal with any kind of disease and injury and always have an emergency department that works for 24/7. Most of them have their own ambulance services. Also they are divided in to two in Turkey which are known as government and private hospitals. In this study private hospitals were investigated and the reason for this had been explained in the previous chapters.

B) District hospitals

These kinds are known with their large capacity of beds for intensive care. Also the patients choose these hospitals if they need a long-term care. District hospitals were created after the World War II.

C) Specialized hospitals

Specialized hospitals may include different branches such as; children's hospital, rehabilitation hospitals and psychiatric hospitals. According to the branch that is chosen, these kin of hospitals only deal with patients that are suffering related to their major.

D) Teaching hospitals

The aim of teaching hospitals is to train doctors, nurses and other health professionals. These hospitals are generally a part of a university. They can be considered as medical schools. As the other hospitals beside of training medical professionals, these type of hospitals deliver medical care to patients.

2.3. Emergency Service

The emergency department is a core clinical unit of a hospital and the experience of patients attending the emergency department significantly influences patient satisfaction and the public image of the hospital. Its function is to receive, triage, stabilize and provide emergency management to patients who present with a wide variety of critical, urgent and semi urgent conditions whether self or otherwise referred Petersen (1981). [6]

2.3.1. Emergency Service Waiting Room Design

There are several features that a waiting room shall have. In this part of the study, these features are listed. The aim of this list is to make it clearer what an emergency service should include while examining the emergency department waiting rooms of the hospital samples.

According to the Australasian College for Emergency Medicine (2007) [7]; the waiting room of an emergency department is the place where ER is introduced to the patients and their relatives or whoever they bring with. So as always, first impression is important here too. As Piotrowski and Rogers said in 2007 [8]; the design of this introductory space can aid the patient by reducing stress, as well as helping to create comfort and confidence in the medical expertise of the physician. A harmonious, pleasing waiting area can effect the patient's opinion consciously or subconsciously, on the physician's sensibilities concerning patient care. So it can be said that the functional and aesthetical specialties effect the users, in this case, psychology of patients and their relatives. In 1995, Miller and Swensson [9] support this idea by saying; If the ED is a hospital's alternative ''front door'', the ED waiting area is, in large measure, the place where patients form their first impression about the hospital as a whole.

It is a fact that waiting room of an emergency department is a stressful area for those who use it because of the unclarified situation of their patients and the time they have to wait for cannot be foretold. As Carpman and Grant stated in 1993 [10]; long, tedious hours of waiting are an unfortunate fact of life in most health care facilities, but good design can help lessen some of the negative aspects of this experience.

As Leibrock (2000) [11] stated; 'although the time that the users will spend in a waiting room is unknown, this waiting process can be less stressful for them with the help of developing the functions of the emergency service waiting room. The design program should accommodate intensive care for families as well as patients, providing emotional support, realistic expectations, understanding of medical procedures, and an opportunity to participate in care.'

There are main factors that affects the comfort level of users in an emergency department. These are;

A) One of the most important feature of an emergency department is the sitting plan of the space. According to Carpman and Grant (1993) [12], a waiting area that is constantly crowded, forcing some patients and visitors to stand or move into the hallway, is likely to increase stress and general discomfort. To create an appropriate

order in terms of sitting plan, first of all the average circulation of the casualty department should be detected.

Another point to make a sitting plan better is to choose the seats correctly. Because of the waiting time of the families and companions of the patients cannot be estimated, the form, the order and the structure of the seats are important.

Miller and Swensson (1995) [13] emphasizes this point by saying;

> Furniture should, of course, be comfortable. Modular seating groups are available that approximate a soft, residential appearance yet provide durability including field-changeable upholstery covers. The anti-institutional, patient-oriented image of the facility can be further enhanced by individual chairs arranged in attractive groups rather than in bus station-style rows. If possible, a certain number of high-backed chairs should be reserved for geriatric patients, who may have difficulty sitting and rising.

To continue with the order of the seats, Carpman and Grant (1993) [14] stated that; 'Provide seating that enables people to position their bodies comfortably for conversation, with regard to both the distance from one seat to another and angle at which one person can face another.'

Figure 2. Seats that can be positioned by the users [15]

Also Malkin (2002) [16] stated about the form of the seats for emergency department waiting area; there is a great latitude in selecting waiting room seating. The main criteria are that a suitable number of individual chairs with arms be provided and that the chairs not be too low or hard to get out of.

The author continues with Carpman and Grant's (1993) [17] statement; a waiting room that is oversized or underused wastes space and resources. While avoiding underused spaces, the waiting room should not be tight-fitting either. As Peterson (1981) [18] stated; space allocation estimates are often imprecise, a rule of thumb is to provide approximately 15 net square feet (1.3 square meters) per person. By allocating accurate space for a person, the comfort level of the user can be strengthened in terms of personal space. Also the users of the emergency department waiting room should be able to rearrange the seats according to member number of their family or whoever they brought with. This idea was supported by Leibrock (2000) [19] as, space planning should be flexible to support private groupings of furnishing that allow families to sit together. Also Hoover (1979) [20] states that; the design program should accommodate intensive care for families as well as patients, providing emotional support, realistic expectations, understanding of medical procedures, and an opportunity to participate in care.

In waiting rooms, everyone sits together but not everyone in a waiting room is there because of an illness or an incident. There is a possibility that healthy people may get sick because of the patients. As a solution Malkin (1992) [21] stated;

> In waiting rooms, separating sick from those who are well is advisable. … Often sick and well waiting rooms are separate rooms on opposite sides of the reception desk. The reception desk would have three sides, allowing clerks to greet people straight ahead as they initially enter the waiting room or to turn and check them in at the transaction counter on the sick side or the well side.''

B) To easify to spend time in a waiting room, different activies can be presented , such as aquariums, nerwspaper rack and television to the users. As Carpman and Grant (1993) [22] stated; the hey is to provide environmental supports for as many different activities as possible: quite activities such aws reading, moderately active pursuits such as watching television and more active ones such as playing with children.

Another activity that can be additional to newspaper rack is a brouchure rack which people can be informed about the hospital they are in and what departments this hospital contain. This kind of a rack would not need a large space to be presented and also it can be informative for the patients.

Outside planning for an emergency waiting room is important for people to have fresh air or to smoke. Miller and Swensson (1995) [23] stated; ‘ where conditions permit, outdoor areas are popular suplements to the indoor waiting room. Not only do such spaces affor a break from crowds and relief from anxiety, they are popular with smokers, who increasingly hard-pressed to find areas that permit smoking.’

These kinds of activities also cause people to think less about their ilness or about their patients. This situation dicreases the stress level of patients and relaxed patients are easier to examine. Even putting a clock can help people to spend time in an easier way. In short, activities for users creates a healthier working space for both patients and the staff.

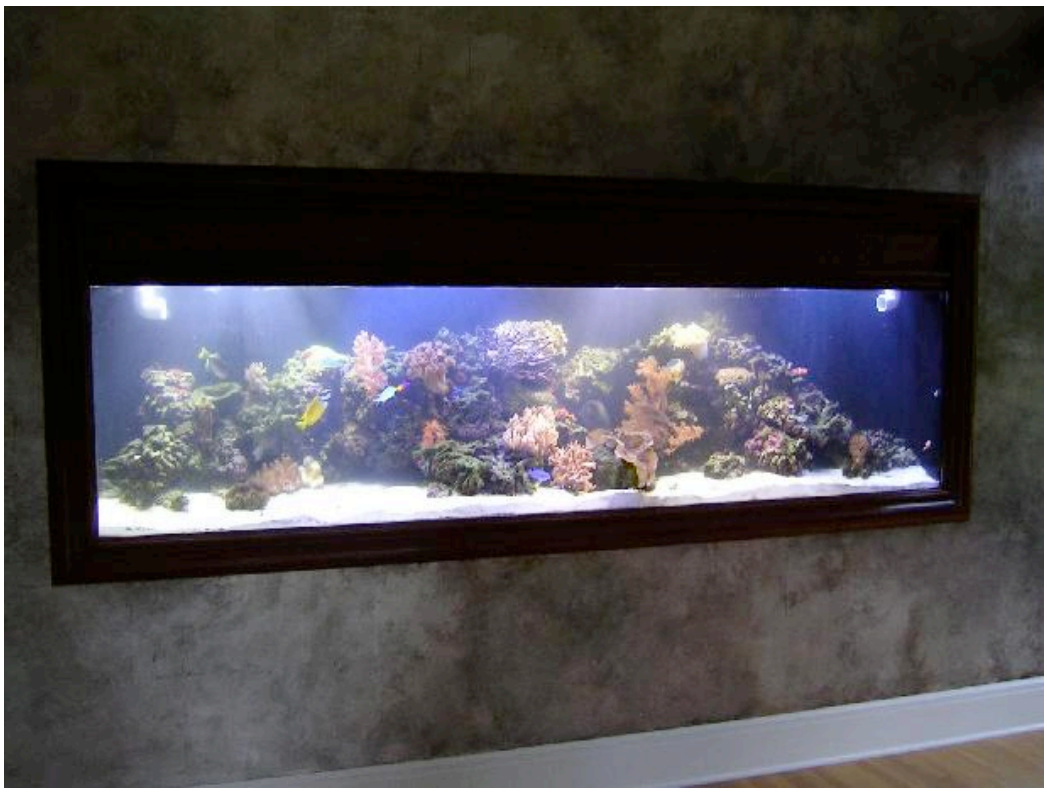

Figure 3. Built in aquarium as an activity without wasting space [24]

Figure 4. News paper rack as an supporting activity which can also be used as a seat [25]

Figure 5. Brochure racks to inform users about the facilities of the hospital[26]

C) The reason for people to come to an emergency service is that they have an urgent incident or disease which is unexpected. So they are not able to choose with who to come. The companion of the patient may be a friend, a family member or a child. For this reason while designing a waiting room for an emergency department, children should be taken into consideration.

Alcock and Goodman (1985) [27] claim that ; the environment needs to enable parents and children to wait comfortably while not bothering other adults. Carpmann and Grant (1993) [28] stated; these spaces (children's area) should be protected from major circulation paths, and play materials should be displayed.

While creating a place for children, their family may need to take care of the patient they came with. So supervising the children should be considered. Paron (2013**)** [29] explained this situation by saying; these spaces (children's area) can be small and should be located so that they can be easily monitored from the reception desk and from some of the waiting room seats. Children in these play spaces need to be tacitly supervised by both parents and staff.

Malkin (1992) [30] stated that;''Children and adolescents should not be mixed with adults in the same clinic, or at least they should be seen at at different time.''

Malkin (2002) [31] contuniues with a solution for keeping children occupied; it is important for the parents and the staff's sanity to keep children well occupied-patients and siblings alike. A small table or work counter will provide space for coloring or for playing games.

Figure 6. Interactive play unit requires little space and keeps children occupied [32]

D) Another space that should be separated within the waiting room is the room for families and the companions that patients bring with to have a private room for talking to the doctor or to exprees their anxiety as they want. Unfortunatley, it is not possible to treat every patient. People waiting in the waiting room may need a private place to hear the bad news. Leibrock (2000) [33] interprets this need for the relatives and companions of the patients; ‘’Plan a private adjoining consultation room with a movable sign on the door to indicate that the room is being used. This room can also be used for crying and grieving. A nearby chapel is a thoughtful addition.’’

This separated are does not have to seperated with solid walls. If not posible to separate this place completely, from the waiting room, separators can be preferable.

Figure 7. Separators can be considered as well for creating a private area [34]

E) As the author pointed before, people come to emergencies because of an unexpected health problem. While dealing with their health issues, they may not be able to take care of their personal belongings. To come up with a solution for this problem, a place for personal belongings should be planned. Carpman and Grant (1993) [35] stated about this situation; in the abscence of planned places for people to store their belongings, they place them on adjoining seats, taking away potential seating space. Another statement from

Petersen (1981) [36] says; personal belongings need to be accommodated, each waiting area should contain some coat hooks and tables or other places for people to place their things temporarily.security should be considered when planning temporary storage accommodations.

Miller and Swensson (1995) [37] emphisized the importance of a locker with the statement; ‘’ in situations where theft may be a problem, small lockers may be provided.’’

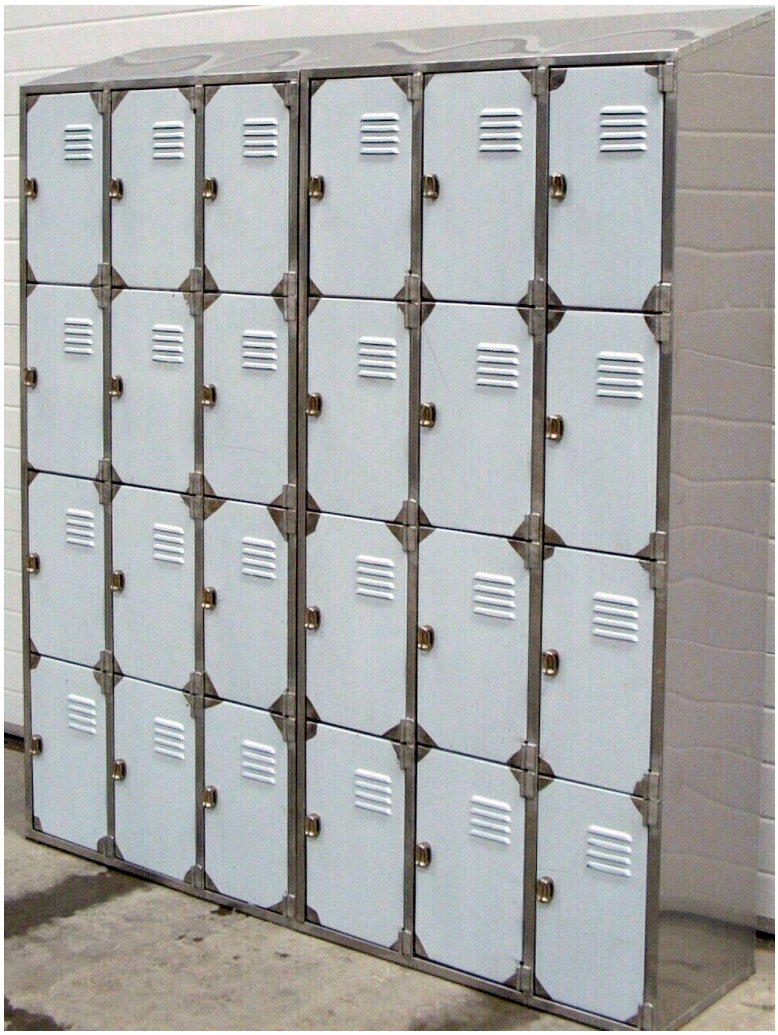

Figure 8. Small lockers for avoiding theft [38]

Carpman and Grant (1993) [39] stated; ‘’many people walk around carrying something with them-purses, briefcases, bags, books, and assorted paraphernalia. During the winter months in northern regions of the country, hats,coats, gloves and other cold weather gear add to the load. In addition,

hospital visitors often bring flowers, gifts, and other items for patients. In the absence of planned places for people to store their belongings, they place them on adjoining seats, taking away potential seating place.''

F) When people enter the casualty department in a haste, they shall know what to do or where to go. To make it easier for them, wayfinding shall be clear. The term wayfinding explained by Marberry (1997) [40] ; ''wayfinding is not the same as signer. Wayfinding refers to behaviour, while signage refers to one of the many design-related elements that can affect that behaviour.

Wayfinding refers to what people see, what they think about, what they notice, and what they do to find their way from one place to another.'' Piotrowski, C. M. and Rogers, E., (2007) [41] stated; *Destination Recognition* is when the destination is recognized.

Another description from the Information Design Unit of Enterprise IG (2005) [42] stated; ''the term ''wayfinding'' describes the processes people go through to find their way around an environment. The wayfinding process is fundamentally problem-solving, and is affected by many factors which are covered in this section.''

As the author stated before, emergency department is a stressful and a traumatic space for people. The terms of medicine is another confusing point for patients and their companions.

Marberry (1997) [43] stated that;

> ''Hospitals tend to use special terminology unfamiliar to the public. Thus, not only are buildings large and labyrinthine, signs may be unintelligible if they include messages like '' Otorhinolaryngology''. There is often a considerable difference in educational levels between medical personnel and the patients and visitors they serve, and many medical terms are typically not understood by those outside the medical **world.''**

G) Another point to be taken into consideration is the communication services. Nowadays everyone has a cell phone but in emergency situations such as a disease or an incident, people may be caught unprepared. The emergency

department shall provide the users a way to communicate. In this situation, pay phones shall be provided. Carpman and Grant (1993) [44] stated;

> ''Telephones provide an important source of contact with the outside world. Patients and visitors need access to telephones for making arrangements or for keeping in touch with friends and family. Although inpatients may have a bedside telephone available, outpatients and visitors rely on pay telephones. In using these telephones, patients' and visitors' greatest concerns are proximity to the waiting room, privacy, and comfort while talking''

Miller and Swensson (1995) [45] supports the idea of providing a pay telephone; ''other waiting-area amenities include access to an adequate number of public telephones and restrooms, and a coat-hanging area.''

Locating the pay phone has a crucial importance. The location of the pay telephone shall provide the users privacy and comfort. Pendell (1975) [46] stated; '' the telephone's location is also important. In one study, visitors were asked whether telephones should be located inside the waiting area or in the hallways. More than two-thirds thought that telephones should be located in the hallway.''

Carpman and Grant (1993) [47] continues with the statement; '' patients and visitors would rather conduct personal business outside the rather intimate group setting of the waiting room. In addition, a hall location provides a better access to the telephone for all patients and visitors, in addition to those using the waiting rooms. ''use

Another statement form Petersen (1981) [48];

> '' For intensive care unit and surgery waiting areas, public telephones may need to be located inside the waiting area to ensure that someone placing a call does not miss an incoming physician's report on a patient's condition. These enclosures should provide acoustical privacy.''

While placing a pay telephone in an emergency department waiting area, differently abled people shall be taken into consideration. Reizentstein (1981) [49] stated that; '' use semienclosed public telephones in or near waiting areas and enclosed, handicapped-accessible booths in the main lobby.''

H) Improving the facilities of an emergency department waiting room is not only about the interior of the space. While waiting, people may have the need for fresh air or they may need to go out for smoking. So providing an outside are for a waiting room of an emergency is another point that can increase the comfort level of the space.miller and Swensson (1995) [50] stated about this; ‘’ where conditions permit, outdoor waiting areas are popular supplements to the indoor waiting room. Not only do such spaces afford a break from crowds and relief from anxiety, they are popular with smoker, who are increasingly hard-pressed to find areas that permit smoking.’’

I) One of the essential need of a human being is eating and another is liquid consuming. As it is mentioned before, patients do not want to go far from the waiting room because of a chance to have information from their patients. The waiting limit of a user is unknown, so the waiting room shall be qualified to provide users eating and drinking options. A snack bar and a drinking fountain shall be placed in an emergency department waiting room.

Petersen (1981) [51] stated that; ‘’It is consequential to provide the essential needs of patients and their relatives. When asked about their waiting room expectations, nearly 70% of surveyed subjects expressed a need to be given a better estimate of waiting time, and 43.5% wanted better information on reasons for the wait. Further, 30% survey respondents recommended having a coffee and sandwich shop in the waiting area, 16.5% wanted more privacy, 14.8% wanted a quiet area, and 14% expressed the need for better cleanliness**.’’**

Another essential need for a person is the water closet. This facility should be provided in a waiting room too.

J) Studies on color was started decades ago. First it was about the basic theories such as primary colors, additive colors and subtractive colors. Later this process, the

meanings of colors and their effects on human beings were searched. As Reizenstein (1981) [52] stated;

> At the dawn of the civilization, color was biological necessity for locating food and observing predators. It is nature's survival kit for plants and animals- it attracts, camouflages, and protects them. Today color permeates our entire existence. Every aspect of our life involves color: Traffic is directed by color; instrument panels are regulated by color, electrical wires are color coded; medicines and capsules are in color; uniforms have color; the list is infinite.

As it is known the choice of color has a crucial effect on psychology of people. This choice can make the space work better or worse. In this situation to make the colors work in an accurate way, the chosen colors should relief people to avoid the stress in an emergency department. As Plant (2012) [53] stated; 'The perception of color influences psychological functioning in a manner consistent with the meaning of the color. Viewing color gives rise to evaluative processes that appraise stimuli as hospitable for a hostile to the perceiver.'

What is expected from the usage of color is not to heal patients, it is to make them relaxed and feel more comfortable. As Reizenstein (1981) [54] stated;

> Colour and design have not been established as a definite cure for sickness and ill health, but certainly monotony and poor conditions in premises that have not been refurbished with any care, have had a detrimental affect on recovery rates and staff morale. The realisation that a well-balanced and attractive environment is of major importance to patients' health is, in no way new; Florence Nightingale observed that 'a variety of form and brilliance of colour in the objects presented to patients are an actual means of recovery'.

In a way, it can be said that colors can have a placebo effect on patients if they are used in an accurate way. By feeling secure and more comfortable their anxiety level decreases. With the help of this condition, the tendency of the patients for recovery gets stronger. As Piotrowski (2007, pg. 85) [55] stated;

> Color choices can range from subdued, pale, grayed or dull tones to saturated colors, depending upon the type of medical facility and the use of space. Examples of color effects include soft yellows, which promote healing; blues, which can help reduce blood pressure, and shades and tints of many colors, which create a healing environment. Generally, the physician and the staff are aware of the color range that will work their specialty, their staff, and their patients.

Figure 9. A color scheme to show what colors represent [56]

K) While designing an emergency service waiting room, another important point beyond the previous sub-titles, is the choice of material. The chosen material should be antibacterial to minimize the contagious disease situations. Another important point here is that, the staff should be able to clean the surfaces and furniture and the surfaces easily.

To start with the walls, as Malkin (2002) [57] stated; 'If budget permits, walls should receive commercial vinyl wall covering.' Vinyl based wallpapers and paintings are easy to clean because of the substances of the material. According to the web site http://www.whatisvinyl.com/ ; 'Vinyl is not a natural substance but is a synthetic man-made material. It is a type of plastic that is made from ethylene (found in crude oil) and chlorine (found in regular salt). When processed, both the substances are combined to form Polyvinyl Chloride (PVC) resin, or as is commonly referred to - Vinyl.' Another advantage of vinyl based material is the attitude of them against fire. This type of material is harder to flame up.

The material of the floor should be decided carefully because wrong choice for a flooring can cause acoustical problems and accidental slipping. Because of this reason carpets can be preferable. As Miller and Swensson (1995) [58] stated; 'Carpeting is a very controversial feature in some new ED (emergency department)

waiting areas. It has advantages of lending a feeling of warmth to the area, greatly reducing noise, and reducing the chance of accidental slipping and falling.' Of course the type of carpet has a crucial importance. It has to be durable and antimicrobial. Another advantage of carpet is the way it holds and improves the indoor quality. As Malkin (2002) [59] stated; 'Acting as an air filter, carpet actually improves indoor air quality by holding on to dust particles, which might otherwise become airborne, until vacuum cleaners equipped with environmental airbags remove the dust from the carpet.' To use a carpet efficiently, it has to be cleaned regularly to avoid the collected dust to be aired back. Malkin (1992) [60] also stated; 'Carpet in a medical or dental office is usually glued directly to the slab with no pad. This provides a firm footing, making it less likely that people will trip. Direct glue-down is the recommended installation method in hospitals.' Miller and Swensson (1995) [61] supports the choice of accurate kind of carpet by saying; 'The higher-pile carpets should be avoided, because they can make maneuvering wheelchairs difficult.'

There are different kinds of materials for flooring rather than carpets, which are; sheet vinyl, ceramic tile, vinyl composition tile (VTC) or the combination of these materials. As Malkin (2002) [62] stated; 'The least expensive flooring is VCT, which is very durable, but it does need to be waxed and buffed. Sheet vinyl is recommended for wet areas such as bathrooms if the budget does not allow for ceramic tile.'

To avoid an acoustical problem, ceiling material should be chosen accurately. True material can reduce and prevent echo and it can also reduce noise.

L) Light is another title that should be considered because accurate usage of light can effect people in a positive or in a negative way. As Carpman and Grant (1993) [63] stated;

> 'Light, of course, affects how well work tasks can be seen (visibility) and subsequently affects how well they are performed (productivity). The designer must recognize that correct use of light patterns is fundamental in satisfying some space-activity requirements, such as reinforcing attraction or attention, enhancing impressions of spaciousness, stimulating sensations of special intimacy or warmth, or reinforcing impressions of cheerfulness.

The effect of usage of light on human psychology is undebatable. Miller and Swensson (1995) [64] emphasize this effect by saying; 'Lighting conveys the most

critical of psychological messages. If possible, a combination of overhead, recessed, and indirect lighting is desirable to enliven and humanize what might otherwise be a threatening institutional space.'

As it is known emergency departments are chaotic spaces and people come in to these places with a high level of stress. With the help of the correct usage of lighting, this chaotic ambiance can be reduced. As Carpman and Grant (1993) [65] stated; 'Lighting also affects the ambiance and comfort of the waiting area. Generally, bright, cool florescent lighting is considered institutional, but indirect, warms fluorescent or incandescent lighting is considered friendlier.'

M) Ventilation has an important place while designing a waiting room that can reduce the stress level of patient and their companions. With the help of ventilation contagious diseases can be prevented to spread to healthy people and the temperature of the waiting room can be optimized according to the outside weather conditions. Petersen (1981) [66] stated; 'Air movement can have an important bearing on the incidence of infection, especially if air removed from an infected area is blown or sucked into another part of the building through ventilation or duck systems.' Alcock and Goodman (1985) [67] stated that; '…, not only is air conditioning expensive but is a constant consumer of energy and an extremely demanding servant.'

There are four factors that effects the ventilation systems that should be considered while applying a HVAC (Heating Ventilating and Air Conditioning) system. These factors are as Malkin (2002) [68] stated;

'-Lighting load

-Room occupancy

-Equipment load

-Comfort level based on room function.

The waiting room is designed accommodate many people, and often they have sweaters or coats on their laps, which add to their body warmth. Not only does this room have a higher density, but the occupants themselves generate heat'

William L., Holden K. & Butler J., (2010) [69] stated;

> ‘Factors involved in the thermal environment are not directly related to communication or orientation. Unlike some of the more subtle considerations related to the perception of visual or sonic detail, thermal factors exert a relatively minor influence on individual participation and performance unless these factors become adverse to the extent that they induce physiological stress.’

CHAPTER 3

MATERIAL AND METHOD

This chapter includes to sections. The first aspect includes the used material for determining the problem over exemplifying it with three samples of hospitals. These hospitals were chosen by a hat draw from within the city limits of Antalya. Then the second one gives the details of operational procedures that the author handled which were; observations, interview, questionnaire and data analysis.

3.1. Material

Since the aim of the study is to determine the deficiencies of waiting rooms in emergency departments, to have a clear expression, three hospitals were chosen by a hat draw out of ten hospitals. The aim for choosing these hospitals were to use them for exemplifying the deficiencies in a more solid way. With the methods used, which are being told in the remaining chapters, basic information about the emergency departments were obtained. These collected data constituted a starting point.

By comparing the collected data with the three emergency service waiting room samples, the voids and the shortcomings of these places were attained.

3.1.1. Case Studies: Emergency Waiting Rooms of Sample Hospitals

Under this title, the hospitals taken from the hat draw is presented. As the author pointed before, all three of them are taken from within the city limits of Antalya and they are all private hospitals.

3.1.1.1. Case A

Sample A was founded in 2006 January after the success of the company's first hospital. The capacity of this hospital is 90 beds. The circulation of the hospital is high because of its service quality and the location it has. This hospital has A1 government license. According to department's related regulation, A-1 group hospital is the one which;

- has at least five branches of authority and accordingly staff training completed,
- gives the service of tertiary treatment and rehabilitation,
- is carrying out educational research activities,
- is training specialist and subspecialist doctors,
- serves general branches services,
- has the service of inpatient facility.

Figure 10. Emergency service enterance of sample A (photo taken by the author)

The enterance of this sample allows people to smoke and wait for their patients. There are two benches for this purpose. But when an ambulance arrives, it is not possible for people to use this space because, for giving place to a sedan chair leaves the users no space. Another poor point of this enterance is the distance of it to the food court of the hospital. To have some snacks you have to go to the and of the outdoor aisle you can see in the picture . The

distance is about 30m. Most of the users are not going to that canteen because noone wants to leave their patients and they do not want to miss the chance to hear about the condition of their patients.

Figure 11. Reception of casualty department of sample A (photo taken by the author)

The reception desk does not have a separated area which causes disorder when the emergency department gets crowded. Because of this disturbance the users get more stressful considering how nervous they are while entering the casualty department. To avoid this situation, the space of the reception desk should be more identified by leaving it more area.

When a patient enters the waiting room of this emergency service, it is hard for him or her to find the direction that s/he has to go because of the poor wayfinding applications. This is another problem that the usrs go through which causes more stress.

Another lack of this waiting room is that there are no activities that can entertain people. There is no television, aquariuim or a news paper rack. Even a clock can make it easier for people to wait.'

Figure 12. Emergency department waiting room of sample A (photo taken by the author)

As it can be seen from the Figure 12, which was taken by the author, there is not a planned arrangement of seats in this waiting room. While designing it, the empty spaces were appraised as a space left for sitting.

As it was explained in previous chapter, insufficiency of a sitting area reduces the level of stress. Also the type of the seats does not serve a comfortable sitting for the users and it is not possible for them to arrange the chairss as they want, according to the number of their companions. Because the seats are atteched to each other. All these facts effects the comfort level of the patients and their companions negatively.

Figure 13. WC of sample A (photo taken by the author)

There are toilets for both men and women. Also there is a toilet for differently abled people but the problem here is the distance between the toilets and the waiting room. While patients are being treated, their companions do not want to get away from them in case of haveng the news about their patients immediately.

As the author's research shows, companions have the need to be close to their patients. In this case, as it was told in previous chapters, people should be able to fullfill their needs within the limits of the waiting area. But in this sample, there is nothing that provides eating or drinking. To match these needs, the user have to the upper story and walk to the other side of the building or they have to go out of the emergency room and walk 30m away.

To continue with the colors, light colors are chosen here which makes the place seem wider and spacious. Another advantage of these kind of color is the way it effects the inside lighting. With the help of this choice of color, interior of

this emergency seems more bright. The color of the artificial lighting was close to day light color which helps people to not find it strange when they go out to the sun lights. Artificial lighting is being used in the day times too because the only opening of this waiting room is the enterance of it.

The chosen material for flooring was linolium which is a plastic based material. The applican of this material does not require joints and less joints mean less bacterias. This type of a flooring is durable and easy to clean. Walls are painted with a paint that can be wipe outed.

Ventilation of this waiting room was supported by a HVAC system that was applide under the suspended ceiling. It is easy to optimize the interior heat according to the out side temperature with the help of this system.

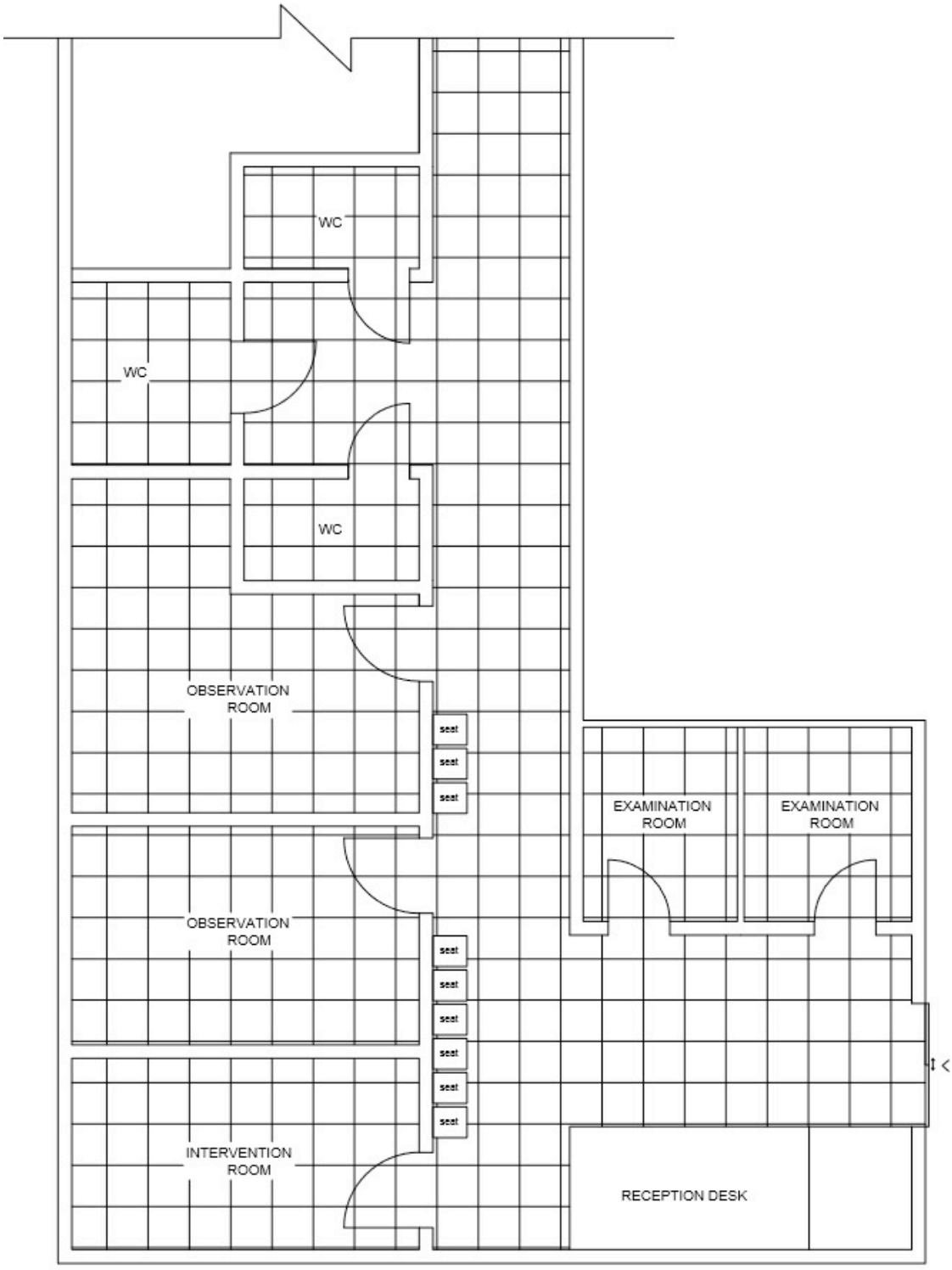

Figure 14. Sample A emergency department waiting room sketch drawing (drawen by the author)

3.1.1.2. Case B

The hospital sample B was established in 2005. The major reason of establishing this hospital was lack of capacity and limited services of existing hospitals. It serves tertiary treatment.

The hospital sample B has intensive care units, operating room which can serve open-heart surgery, and it has fully equipped laboratories and advanced radiological imaging units. Because of this facilities sample B was the first and only private hospital which provide all branch services.

Figure 15. Emergency service entrance of sample B

This sample has the most convenient entrance of all three cases. An approaching ambulance do not prevent the users to wait there or smoke there. There is a ramp for differently abled people to go up to the enterance near the stairs. This enterance is also useful because of having a roof over it. In a city like Antalya, this kind of a semi open place is important because of the weather conditions of the city.

Tih enterance is far away from the main road about 25 meters which gives the opportunity for people to park near the emergency department in an immediate situation and when an ambulancce approaches, it does not get effected from the traffic jam. The circulation of cars and users of this place is the most comfortable one among the other cases.

Figure 16. Reception of casualty department of sample B

What is presented in Figure. 15 is the waiting room of the emergency department. Capacity of the seats are only enough for 9 people. According to the observations of the author, most of the days the capacity of this waiting room does not match the circulation eventhough some of the users prefer to wait outside.

The seats do not have arms which gets really uncomfortable after waiting for a while. Also the seats do not have backs. People use the walls for sitting back. The seats are not modular so that they can not be rearranged according to the

choice of the users because they are built-in furnitures. The fabric of the seats are artificial leather which makes people cold in winter and sweat in summer. The only good point of the seats where the way they can be cleaned easily.

Figure 17. Emergency department waiting room of sample B

To contuniue with the provided activities, there were only posters on the walls that are informative about the hospital, which can be seen on the Figure. 16. Also there was not a place that was seperated for children.

Because of the linear planning of seats and wall seperations, some group of seats are providing some privacy for patients and their companions. To contuniue with privacy, pay phones are placed in a seperated area that provides people to use them in a privacy.

There were no wending machines that people can satisfy their hunger or thirst. Users should go to the next block of the building for buying snacks or a drink. The place of the water closet is solved within the emergency department waiting room. As it can be seen in the Figure 17.

Figure 18. Emergency department waiting room water closets of sample B

The color choices of the walls, furnitures and the floor are; white, beige and green which refers to the senses of fresh, health cleanliness, piece, healing and tranquility as it was shown in Figure. 9.

The material of the floor is ceramic tiles which is a durable material and it is easy to clean except the joint points of this material. Walls are covered with oil painting and this kind of a material is convinient to wipe out.

To contuniue with the lighting of this space, the waiting room is not practical in terms of daylight because of the inadequate openings of the building. The color of the artificial lighting which are fluorescent are white and this type of a color becomes exhausting after a while and does not give warmth to the ambiance.

For ventilating the waiting room of this emergency department, HVAC system was choosen which is the most efficient solution for this kind of a place as it was explained in the previous chapters.

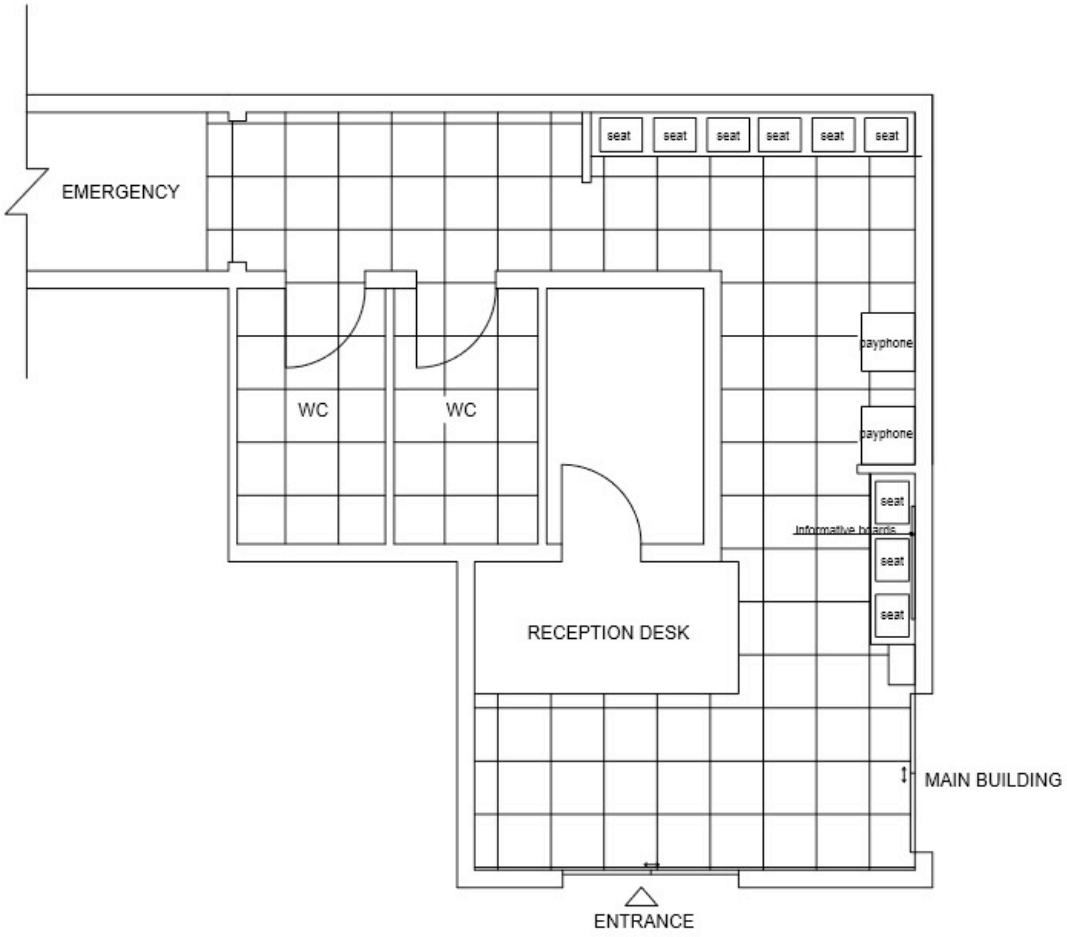

Figure 19. . Sample B emergency department waiting room sketch drawing (drawen by the author)

3.1.1.3. Case C

The hospital sample C has 84 outpatient clinic rooms, 189 beds, 10 coronary care, intensive care KVC 7, 23 general intensive care, 26 new born intensive care unit, 10 operating rooms and 33 medical branches services.

Sample C aims to be the most preferred transplantation center so its major concern is transplantation. Up today they make the lowest adverse effect with the maximum number of organ transplantation. On one side; sample has Organ Transplantation, Bone Marrow Transplantation, Medical Oncology, Radiation Oncology, and Immunology as senior medical service units, on the other hand; there are special units such as Dermatology-Aesthetic Centre, Hair Transplant Unit, Nutrition and Dietetics.

To start with the seat planning of this sample; the seats were located at the center of the waiting room which causes trouble and stress for the users when the place gets crowded. The seats do not have arms and backs. And the settlement of the seats were decided according to the empty spaces of the waiting room. There is no specific place that was designed for seats.

The only activity that was provided to the users is a television and a clock. There is not a place that is separated for children and for lockers. A pay phone was located at the entrance of the waiting room where everyone can hear the person who is using the pay phone.

Entrance of the emergency department is close to the main entrance of the hospital and this situation creates a crowding circulation that prevents people to spend time there for fresh air or for smoking.

The only good point of this emergency room was the location of the vending machines and the water closet. The waiting room matches the essential needs of people such as eating and drinking without making them go far away from their patients.

Color scheme of the waiting room is monochromatic which creates a cold ambiance that makes people nervous and stressful. Chosen materials are ceramic tiles which are durable and easy to clean but he sizes of the tiles are 30x30 cm which creates more joints. More joints mean more bacteria which is an unacceptable situation for an emergency department.

Artificial lighting is supported with daylight colored fluorescents. The space is not suitable for having day light because of having no windows. Ventilation condition is solved by a HVAC system.

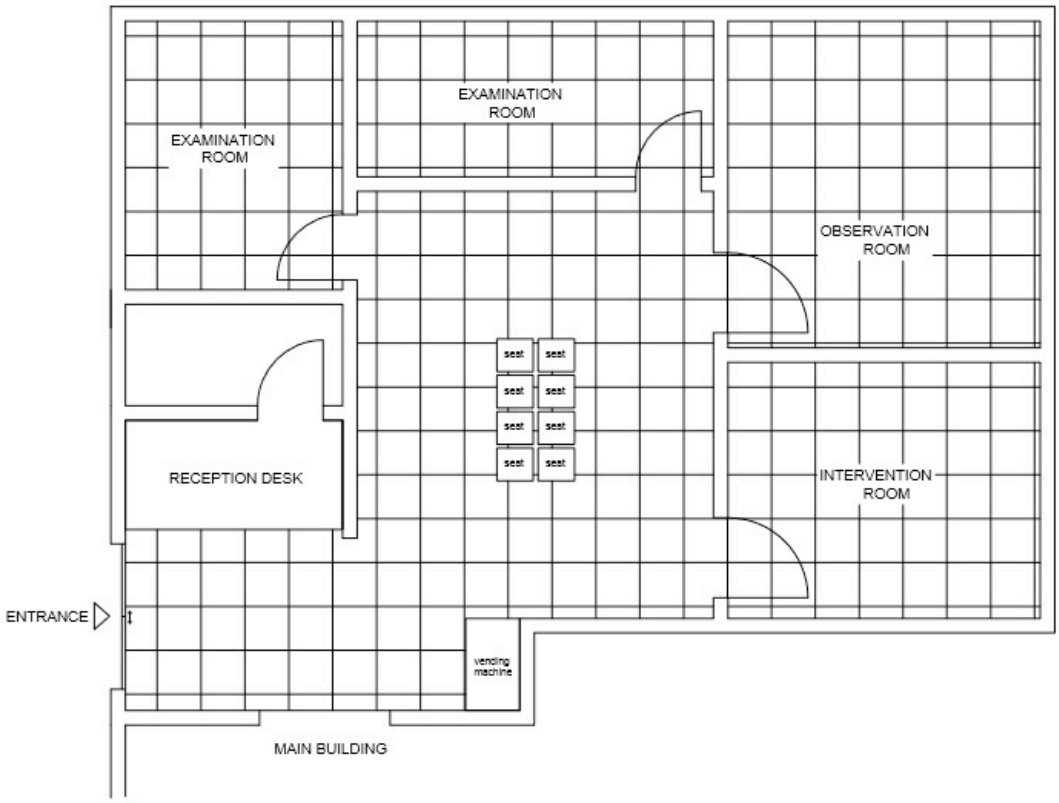

Figure 20. Sample C emergency department waiting room sketch drawing (drawen by the author)

3.2. Data Collection Process

Under this title, the methods used by the author is explained. All the details of this procedure is taken in to examination. The aim of this part is to obtain information,

directly from the users, about the drawbacks they experience while using the waiting room of the emergency department they are in.

3.2.1. Observation

During the observation process, the author had the chance to calculate the approximate circulation of the sample hospitals. Sample A had a circulation between 100 to 150 people per day. Sample B has a circulation between 75 to 125 users and sample C has 100 to 150 people per a day. It was not possible for the author to give exact numbers because, the administrations of the sample hospitals denied to share the legal numbers.

The observations took place in the emergency waiting rooms of the sample hospitals. For two months, which were February and March of 2013, on the decided days which were Monday, Thursday and Sunday, author spent an hour in each hospital. The point of observation was stable to not change the conditions of observation process. According to the observations, the circulation of the sample hospitals were determined approximately. With the help of this process, the capacity of the waiting room, color scheme, chosen materials for furniture and the other facilities of the emergency department waiting rooms such as; activities, ventilation and seat planning were designated.

According to the observations and the gained experiences of the author through this process, the users of a waiting room do not have high expectations about the facilities because of the stressful situation they are in. Despite of having low level of expectations, users are still not satisfied with the facilities that are provided by the hospitals. The deficiencies they were mostly complaining was about the seats being uncomfortable and being not enough in terms of capacity.

3.2.2. Questionnaire

From the users of the waiting room, who were in or who were leaving the facility, the author asked them to answer the questions of the questionnaire. The sample of the questionnaire is included in appendix A.

The aim of the context of the questions were to determine the deficiencies of the chosen facilities from the perspectives of the users who are patients and their companions.

First, the users were asked to evaluate the conditions of the waiting rooms generally with multiple choice questions. On coming questions were more detailed and, the patients and their companions were requested to answer with their own sentences.

Questionnaires took place with 42 people in sample hospital A. In hospital sample B, questions were answered by 45 people and in hospital C 46 people spared their time to answer the questions of the questionnaire.

The aim of the author was to reach at least 50 people from each hospitals but considering the conditions of the patients and their relatives, the process did not work out as it was meant to be. The questionnaire took place among the observation process.

3.2.3. Interview

The questions of the interview was prepared by the author and presented to the related staff. The staff were chosen from the doctors and other employees of the emergency department. First interview was made with an employee from the hospital sample A, who was working in reception desk of the emergency department. Second

interview was made with a doctor from hospital sample B and the last interview was made with a doctor from sample hospital C.

Interviews gave the opportunity to see the emergency area waiting rooms from the perspectives of people who are working there. These people are witnessing every positive and negative comment of the users. With their observations and their experiences about the patients and behaviors of the patients, the staff that the author interviewed with, was a clarifying experience for the author. In any case, the situation should be criticized by having the opinions of both sides, in this thesis these sides are the staff and the patients. The interviews took place at the same time with the observations to avoid conflicts that might occur because of different timing.

3.3. Data Analysis Process & Results

In this chapter, the condition of the facilities of sample hospitals and the applicable improvements are presented, to compare how the waiting areas are and how they shall be according to the collected data.

There are several deficiencies in emergency department waiting rooms. Some of them are noticed by the patients and their relatives and some of them are noticed by the staff of the emergency room. The reason for the patients and their companions to not be clearly aware of the deficiencies of the casualty department is the way they are not informed. Also the anxiety they have makes them unconscious about the place they are in.

Comparing the sample hospitals emergency waiting rooms with the results of the literature survey, shows the deficiencies of these places. To start with sample hospital A, sitting plan of the waiting area was not designed conscientiously. The seats were placed in to empty places and they were strewed. The ergonomic condition of the seats is not enough. According to the selection A of the waiting room design section, the waiting room of this plan is unsatisfactory. The planning of the seats do not give the choice of arrangement to the users and they are not comfortable. In long term, users become uncomfortable sitting there.

To continue comparing sample A with waiting room design needs, it does not give the users any kind of activities. The selection B emphasizes how important it is but this waiting room do not provide any activities to users.

Selection C was also not provided by the hospitals. People who came with children, do not have the opportunity to avoid their children from the traumatic environmental of the emergency room.

Private room was another facility which was not provided. The users do not have a separated room for talking to the doctor of their patient. This deficiency causes people to see grief or anxiety of other users. This point was explained in selection D.

Personal belongings were making difficulties for both patients and users. If they come with any properties, they do not have a locker room to use while going out of the waiting room. According to the selection E from the list of waiting room design approaches, small locker rooms provides comfort.

Another important point to make a waiting room less stressful is to help people to find their ways easier. The way finding signs of the waiting room of the sample A was sufficient. The strongest approach to

Pay phones were provided as it is written in selection G.

As can be seen in figure 8, there is a void in the front of the entrance of the waiting room of the sample A. Ambulance draws near to emergency department by this void but when there is no vehicle, there is a bench that people can use while going out for smoking. This condition may not fully match selection H but it is better than not having any outdoor sitting.

There was not any sign of concern about making healthy and sick people sit separately. According to the interviews ant he questionnaire that was prepared by the author, this situation makes the users uncomfortable. To avoid this, as the selection I says, it is healthier to separate patients and their companions from each other.

To continue with sample B, the sitting units were more comfortable but not planned. The sitting groups were not close to each other. As an activity to make users spend time, there was a television. There was not a place separated for children to make them apart from the stressful environment. For personal interviews for relatives and the companions of the patients, there was not a defined place. The emergency department waiting room was not providing users a locker room for them to take their properties in safe. The casualty department waiting room of the sample B was clear in terms of wayfinding. According to the interviews and the questionnaire, most of the users were satisfied about the wayfinding properties of this waiting room.

Another facility that was provided to users were a pay phone with a defined and private place. There was not an available field in the front of the entrance of the emergency room as there was in the sample A. this waiting room was also including separated sitting units for healthy and sick people. There was a snack bar and a drinking fountain for people to satisfy their hunger and thirst.

Sample C was not different from the other samples in a matter of having the same shortcomings. The waiting area was not providing a sitting plan or any activities except watching TV. The positive elements of this hospital were pay phones, WC, snack bar and drinking fountain.

In all three samples, chosen material for flooring was ceramic titles and lighting was provided by fluorescent lamps. And HVAC system was applied to handle the ventilation situation.

To make a generalization about the situation of the emergency department waiting room areas within the limits of Antalya, they only provide the basics to the users. Even these facilities are not fully carried out.

The aim of this study was to clarify the necessities of an emergency waiting room and compare these requirements with three hospital samples. With the help of this

process it was possible to show how different technical and practical facts are from each other.

As a result, there are many ways to improve a waiting area of an emergency department, such as; snack bar, drinking fountain, pay phone and an area, under supervision of an adult, for children but hospitals are not attempting to do any of these improvements. A reason for this is the users being incurious about these deficiencies. Another reason is that; hospitals know that they will keep running their business by providing only the essential needs of people in a way. So they do not feel the necessity to improve these facilities.

CHAPTER 4

CONCLUSION

The aim of this thesis was to examine the deficiencies of emergency department waiting rooms. Such a study is essential to explore the appropriateness of such spaces which not only affect the psychologies of patients and their companions also affects the behaviors of the users while being treated in a casualty department. For this purpose within the delimitations and limitations of the author, literature survey, observations and interviews took place. The starting point of this thesis was the personal observations and experiences of the author. Another aim of this thesis is to inspire or to give a starting point for further studies on the topic of emergency waiting room design.

Through this investigation process, the author noticed the topic ‘emergency waiting rooms’ was not investigated profoundly. The gathered information by the author did not match the point that was intended to be reached. To achieve this level of knowledge about the topic, the author applied to the experiences of users to be able to discover different ways to improve emergency waiting rooms. With the help of these experiences, the author had the chance propose additional features for emergency waiting rooms different than literature.

		CASE A	CASE B	CASE C
AMENITIES	activities	- no attempt to provide any activity for patients	———	———
	outside waiting	———	———	- not available for sitting and smoking
	telephone	- no pay phone	———	———
	vending machine & WC	- no vending machine	- no vending machine	———
BEHAVIORAL ASPECTS	children's area	- no area for children	- no area for children	- no area for children
	private area	- no private area for patients	- no private area for patients	- no private area for patients
	wayfinding	- no attempt of wayfinding	———	———
SPACE QUALITIES	color	———	- monochromatic color schema - cold ambiance	- monochromatic color schema - cold ambiance
	lighting	———	- poor daylight	- poor daylight
	material choice	———	———	———
	sitting plan	- not available for rearrangements	- not available for rearrangements - seats have no arms and back rests	- not available for rearrangements - seats have no arms and back rests
	ventilation	———	———	———

Figure 20. Evaluation chart of sample hospitals

		CASE A	CASE B	CASE C
AMENITIES	activities	———	- informative posters	- television - clock
	outside waiting	- available for sitting and smoking	- available for sitting and smoking - semi close area	———
	telephone	———	- private place for a pay phone inside the waiting room	- private place for a pay phone outside the waiting room
	vending machine & WC	- WC within the limits of waiting room	- WC within the limits of waiting room	- vending machine - WC within the limits of waiting room
BEHAVIORAL ASPECTS	children's area	———	———	———
	private area	———	———	———
	wayfinding	- name plates on doors	- basic boards for direction indication	- basic boards for direction indication
SPACE QUALITIES	color	- light and fresh colors	———	———
	lighting	- fluorescent - daylight colored lamp - efficient daylight	- fluorescent - white colored lamp	- fluorescent - daylight colored lamp
	material choice	- ceramic tiles - painted walls - plastic seats	- ceramic tiles - painted walls - artificial leather seats	- ceramic tiles - painted walls - plastic seats
	sitting plan	———	———	———
	ventilation	- HVAC system	- HVAC system	- HVAC system

Figure 21. Evaluation chart of sample hospitals

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APPENDIX A

QUESTIONNAIRE

In this chapter is presented the questionnaire that the author prepared. This questionnaire was answered by, where possible with patients, where not with the companions of the patients and emergency department staff.

At three hospitals which were chosen as the samples, this questionnaire was delivered. For all of the hospitals, the questions were the same. The reason for asking the same questions was to create an in variant point. With the help of this invariant point, the comparison between the hospitals with the emergency department waiting room design criteria, it was more accurate and equitable.

The reason for you to choose this hospital:

- It is close
- It was recommended
- Good service
- We were close when the incident happened
-

Evaluate the waiting room

- 1
- 2
- 3
- 4

Evaluate the way findings of the waiting room; was the signboards enough in terms of finding your way in emergency department waiting room?

- 1
- 2
- 3
- 4

Evaluate the waiting room in terms of fulfilling personal needs (food, drink, WC, etc.)

- 1
- 2
- 3
- 4

Evaluate the seat planning of the waiting area, if it is unqualified please explain with a sentence.

- 1
- 2
- 3
- 4

What is your first expectation when you enter the emergency department waiting room?

What can be done more to strengthen the privacy of the users?

Are you able to have information about your patient? If not what can be done to solve this problem?

_____

What is the most traumatic scene you have ever witnessed in an emergency department waiting room?

_____

APPENDIX B

INTERVIEW

Interviews were carried out in each sample hospitals with same questions and they were achieved with staff of the emergency department. This interview includes 8 questions. The aim of the interview was to expose the staff's observations and opinions.

Q1: Does this hospital vary in terms of patients?

Q2: Can we say this diversity is related to being a private hospital and if it is, how?

Q3: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

Q4: Is it okay to put healthy people and the patients in the same area?

Q5: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

Q6: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

Q7: Do you find this waiting room sufficient in terms of wayfinding?

Q8: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

Q9: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

INTERVIEW A

Q1: Does this hospital vary in terms of patients?

A1: Yes, it has varieties both in illnesses and also in economical classes of patients. We can serve a lot people which are from different standards. This hospital serves people from both high level and low level of income. People who have high level of income prefer private hospital. For the person who cannot effort private hospital extended price, can also benefit, because this hospital works with social insurance service.

Q2: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

A3: Sometimes we can face with some complains about waiting room. Generally they are, comfort of the seats and general settlement of the room also, there are not satisfied with drinking and eating facilities. They have to walk to the other side of the hospital to obtain beverage. Also as a user of this service, there must be smoker area near emergency entry. People come to emergency and when they are waiting for their patients they will want to smoke but they have to go away from the door to smoke. Naturally they do not want to be apart from their patients and they cannot smoke and this makes them more stressed.

Q3: Is it okay to put healthy people and the patients in the same area?

A3: In my opinion, it is not healthy or logical. Because, we cannot check every single person who enter patients' rooms and sometimes hygienic treatments cannot be enough or satisfied. In this kind of situations, hospitals and staffs are blamed.

Q4: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

A4: Of course it affects them. Because, in emergency room there are lots of serious injuries and it can cause crisis when they see each other. So that, some curtains are used in clinical intervention areas but they could not provide the best results.

Q5: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

A5: For children emergency is much more stressful. Because of that, there should be a children area and staff for them to feel more comfortable. They should get psychological support and some activities to keep their minds busy.

Q6: Do you find this waiting room sufficient in terms of wayfinding?

A6: Wayfinding signs in emergency service (operating area, information, waiting room etc.) are enough but for other services such as WC or catering are not satisfying.

Q7: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

A7: Yes, some people complained about waiting room. They are generally about, lack of service station like catering, also uncomfortable seat elements and general atmosphere of the area, in addition to these sometimes people complain about that they feel the stress and disquiet not only in operation area but also in waiting room. As I mention before some of them feel discomfort about fresh air or smoking area near emergency entrance.

Q8: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

A8: First of all, I suggest more restful and relaxing atmosphere for the total area. In addition to this people should be more comfortable while waiting there so more comfortable and ergonomic seats are needed. Also a small coffee corner or buffet may settle in waiting room or near to it.

INTERVIEW B

Q1: Does this hospital vary in terms of patients?

A1: To talk about the socio-economic way of this question; as you know in our country emergency services treat patients for free and this attitude increases the variations of patient types. We can deal with both surgical and internal complaints of our patients.

Q2: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

A2: A long aisle inside our clinic generates the waiting area of this ER. This planning causes trouble when the clinic gets crowded.

Q3: Is it okay to put healthy people and the patients in the same area?

A3: It may not sound nice but, it is hard to separate healthy people from sick people. No one would like to leave alone their patients.

Q4: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

A4: Human beings are capable of empathy so the might be an affection from other patients. People may be stressed by this situation. Sometimes we may encounter patients who are curious about the previous patient.

Q5: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

A5: It would probably be a good solution for patients who enter the ER with their children but without an observer parents may not allow their children to play in this

area. However, healthy children should not enter an emergency at the first place. But designing a place with toys and colorful furniture may be helpful for people who have not any other choice to bring their children.

Q6: Do you find this waiting room sufficient in terms of way finding?

A6: The information desk and signboards at the entrance can be enough for an average patient to find his or her way. But of course we have to consider the truth about our country in terms of education. Some patients may not be able to read so it is always challenging for them to find their ways in an emergency department.

Q7: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

A7: Most of the complaints are about us, doctors. Patients hate waiting and they do not think that they are waiting for the previous patient to be treated. I did not hear any deletion about the building planning.

Q8: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

A8: My expectation about this facility would be this place to be wider and more well-ventilated.

INTERVIEW C

Q1: Does this hospital vary in terms of patients?

A1: There are may different types of patients that apply to our facility with different types of problems. If we are not capable of treating any patient, than we route these people to a related facility.

Q2: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

A2: Except crowded times, our patients do not have any trouble about our facility but, from time to time ER gets really crowded and that's the time our patients get uncomfortable because this facility is not capable of hosting patients more than 30 in a time in terms of the capacity of the waiting room. The reason for this problem is the way of the planning the waiting room. There are not enough seats and space for people who are waiting. Patients mostly care about the hygiene and the comfort level and the capacity of the emergency waiting room.

Q3: Is it okay to put healthy people and the patients in the same area?

A3: I think this question refers to the situation that is there any sensitive approaches about contagious diseases. To be clear, I have never seen a waiting room that separates healthy and sick people and I have never thought about it. In my opinion, a good ventilation and a wide space would be enough for this situation.

Q4: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

A4: What is most traumatic for people are the highly injured patients and open wounds. As a matter of fact these kinds of patients have priority ant they go directly in to the ER to be treated. At this point, creating a separated entrance for trauma

patients, makes sense to avoid this stressful experience from internal medicine patients. This may be a solution for this problem but unfortunately everyone enters the emergency room from the same entrance.

Q5: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

A5: As a person who have worked in a facility that had separate places for adults and children, I believe designing a special place for children to wait is a positive thing for a facility. The aim here should be more than entertain a child. It should be considered that children should be relaxed before an examination so that this process will be less stressful for them. Examining nervous and stressful children is really hard and it causes a lot of wasted time.

Q6: Do you find this waiting room sufficient in terms of wayfinding?

A6: People do not have trouble about finding their ways because every section of the emergency is on the same aisle. Even if I do not approve this planning it works for patients about way finding.

Q7: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

A7: The physical conditions of our hospital is better than state hospitals and this place do not get so crowded. This fact is sufficient for most of the patients.

Q8: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

A8: I would expect this place to have a higher ceiling and wider. I have worked in a hospital in Netherlands. The waiting room of the emergency department of that hospital had coaches, tables and chairs in addition to regular seats. People were able to have their drinks comfortably while waiting for their turn for treatment or for their patients. Of course it is hard to apply this system here but it would be nice.

APPENDIX C

CURRICULUM VITAE

PERSONAL INFORMATION
Surname, Name: Daloğlu, Nihan
Date and Place of Birth: 21 October 1987, Antalya
Marital Status: Single
Phone: +90506 866 90 76
Email: ndaloglu@yahoo.com.tr

EDUCATION

Degree	Institution	Year of Graduation
M.Sc.	Çankaya University, Interior Architecture	2014
B.Sc.	Bilkent University, Interior Architecture and Environmental Design	2011
High School	Bileydi Anatolian High School /Antalya	2005

WORK EXPERIENCE

Year	Place	Enrollment
2014- Present	Freelance	Interior Architect
2014 February-2014 April	Erişen İnş. Anonim Şti.	Construction Supervisor
2012 July-2013 June	Artwork Interior/Exterior	Interior Architecture

FOREIN LANGUAGES
Advanced English, Beginner German

HOBBIES
Dogs, Swimming, Snowboard, Playing guitar, Teaching, Designing.

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APPENDIX A

QUESTIONNAIRE

In this chapter is presented the questionnaire that the author prepared. This questionnaire was answered by, where possible with patients, where not with the companions of the patients and emergency department staff.

At three hospitals which were chosen as the samples, this questionnaire was delivered. For all of the hospitals, the questions were the same. The reason for asking the same questions was to create an in variant point. With the help of this invariant point, the comparison between the hospitals with the emergency department waiting room design criteria, it was more accurate and equitable.

The reason for you to choose this hospital:

- It is close
- It was recommended
- Good service
- We were close when the incident happened
-

Evaluate the waiting room

- 1
- 2
- 3
- 4

Evaluate the way findings of the waiting room; was the signboards enough in terms of finding your way in emergency department waiting room?

- 1
- 2
- 3
- 4

Evaluate the waiting room in terms of fulfilling personal needs (food, drink, WC, etc.)

- 1
- 2
- 3
- 4

Evaluate the seat planning of the waiting area, if it is unqualified please explain with a sentence.

- 1
- 2
- 3
- 4

What is your first expectation when you enter the emergency department waiting room?

What can be done more to strengthen the privacy of the users?

Are you able to have information about your patient? If not what can be done to solve this problem?

What is the most traumatic scene you have ever witnessed in an emergency department waiting room?

APPENDIX B

INTERVIEW

Interviews were carried out in each sample hospitals with same questions and they were achieved with staff of the emergency department. This interview includes 8 questions. The aim of the interview was to expose the staff's observations and opinions.

Q1: Does this hospital vary in terms of patients?

Q2: Can we say this diversity is related to being a private hospital and if it is, how?

Q3: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

Q4: Is it okay to put healthy people and the patients in the same area?

Q5: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

Q6: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

Q7: Do you find this waiting room sufficient in terms of wayfinding?

Q8: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

Q9: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

INTERVIEW A

Q1: Does this hospital vary in terms of patients?

A1: Yes, it has varieties both in illnesses and also in economical classes of patients. We can serve a lot people which are from different standards. This hospital serves people from both high level and low level of income. People who have high level of income prefer private hospital. For the person who cannot effort private hospital extended price, can also benefit, because this hospital works with social insurance service.

Q2: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

A3: Sometimes we can face with some complains about waiting room. Generally they are, comfort of the seats and general settlement of the room also, there are not satisfied with drinking and eating facilities. They have to walk to the other side of the hospital to obtain beverage. Also as a user of this service, there must be smoker area near emergency entry. People come to emergency and when they are waiting for their patients they will want to smoke but they have to go away from the door to smoke. Naturally they do not want to be apart from their patients and they cannot smoke and this makes them more stressed.

Q3: Is it okay to put healthy people and the patients in the same area?

A3: In my opinion, it is not healthy or logical. Because, we cannot check every single person who enter patients' rooms and sometimes hygienic treatments cannot be enough or satisfied. In this kind of situations, hospitals and staffs are blamed.

Q4: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

A4: Of course it affects them. Because, in emergency room there are lots of serious injuries and it can cause crisis when they see each other. So that, some curtains are used in clinical intervention areas but they could not provide the best results.

Q5: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

A5: For children emergency is much more stressful. Because of that, there should be a children area and staff for them to feel more comfortable. They should get psychological support and some activities to keep their minds busy.

Q6: Do you find this waiting room sufficient in terms of wayfinding?

A6: Wayfinding signs in emergency service (operating area, information, waiting room etc.) are enough but for other services such as WC or catering are not satisfying.

Q7: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

A7: Yes, some people complained about waiting room. They are generally about, lack of service station like catering, also uncomfortable seat elements and general atmosphere of the area, in addition to these sometimes people complain about that they feel the stress and disquiet not only in operation area but also in waiting room. As I mention before some of them feel discomfort about fresh air or smoking area near emergency entrance.

Q8: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

A8: First of all, I suggest more restful and relaxing atmosphere for the total area. In addition to this people should be more comfortable while waiting there so more comfortable and ergonomic seats are needed. Also a small coffee corner or buffet may settle in waiting room or near to it.

INTERVIEW B

Q1: Does this hospital vary in terms of patients?

A1: To talk about the socio-economic way of this question; as you know in our country emergency services treat patients for free and this attitude increases the variations of patient types. We can deal with both surgical and internal complaints of our patients.

Q2: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

A2: A long aisle inside our clinic generates the waiting area of this ER. This planning causes trouble when the clinic gets crowded.

Q3: Is it okay to put healthy people and the patients in the same area?

A3: It may not sound nice but, it is hard to separate healthy people from sick people. No one would like to leave alone their patients.

Q4: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

A4: Human beings are capable of empathy so the might be an affection from other patients. People may be stressed by this situation. Sometimes we may encounter patients who are curious about the previous patient.

Q5: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

A5: It would probably be a good solution for patients who enter the ER with their children but without an observer parents may not allow their children to play in this

area. However, healthy children should not enter an emergency at the first place. But designing a place with toys and colorful furniture may be helpful for people who have not any other choice to bring their children.

Q6: Do you find this waiting room sufficient in terms of way finding?

A6: The information desk and signboards at the entrance can be enough for an average patient to find his or her way. But of course we have to consider the truth about our country in terms of education. Some patients may not be able to read so it is always challenging for them to find their ways in an emergency department.

Q7: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

A7: Most of the complaints are about us, doctors. Patients hate waiting and they do not think that they are waiting for the previous patient to be treated. I did not hear any deletion about the building planning.

Q8: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

A8: My expectation about this facility would be this place to be wider and more well-ventilated.

INTERVIEW C

Q1: Does this hospital vary in terms of patients?

A1: There are may different types of patients that apply to our facility with different types of problems. If we are not capable of treating any patient, than we route these people to a related facility.

Q2: In the light of your experience and observations, are the users satisfied about the facilities of this waiting room?

A2: Except crowded times, our patients do not have any trouble about our facility but, from time to time ER gets really crowded and that's the time our patients get uncomfortable because this facility is not capable of hosting patients more than 30 in a time in terms of the capacity of the waiting room. The reason for this problem is the way of the planning the waiting room. There are not enough seats and space for people who are waiting. Patients mostly care about the hygiene and the comfort level and the capacity of the emergency waiting room.

Q3: Is it okay to put healthy people and the patients in the same area?

A3: I think this question refers to the situation that is there any sensitive approaches about contagious diseases. To be clear, I have never seen a waiting room that separates healthy and sick people and I have never thought about it. In my opinion, a good ventilation and a wide space would be enough for this situation.

Q4: Do you believe seeing other patients can cause a trauma or increase the stress level of the other users?

A4: What is most traumatic for people are the highly injured patients and open wounds. As a matter of fact these kinds of patients have priority ant they go directly in to the ER to be treated. At this point, creating a separated entrance for trauma

patients, makes sense to avoid this stressful experience from internal medicine patients. This may be a solution for this problem but unfortunately everyone enters the emergency room from the same entrance.

Q5: If an emergency department waiting room is fully equipped, would it be enough for a child to feel comfortable or is there a need of a children area?

A5: As a person who have worked in a facility that had separate places for adults and children, I believe designing a special place for children to wait is a positive thing for a facility. The aim here should be more than entertain a child. It should be considered that children should be relaxed before an examination so that this process will be less stressful for them. Examining nervous and stressful children is really hard and it causes a lot of wasted time.

Q6: Do you find this waiting room sufficient in terms of wayfinding?

A6: People do not have trouble about finding their ways because every section of the emergency is on the same aisle. Even if I do not approve this planning it works for patients about way finding.

Q7: Did you ever come across to a patient or a user, who has complains about this facility? If yes, what were they?

A7: The physical conditions of our hospital is better than state hospitals and this place do not get so crowded. This fact is sufficient for most of the patients.

Q8: If you are a patient or a companion of a patient in this waiting room, what would you expect to see in terms of increasing the comfort level of this place?

A8: I would expect this place to have a higher ceiling and wider. I have worked in a hospital in Netherlands. The waiting room of the emergency department of that hospital had coaches, tables and chairs in addition to regular seats. People were able to have their drinks comfortably while waiting for their turn for treatment or for their patients. Of course it is hard to apply this system here but it would be nice.

APPENDIX C

CURRICULUM VITAE

PERSONAL INFORMATION
Surname, Name: Daloğlu, Nihan
Date and Place of Birth: 21 October 1987, Antalya
Marital Status: Single
Phone: +90506 866 90 76
Email: ndaloglu@yahoo.com.tr

EDUCATION

Degree	Institution	Year of Graduation
M.Sc.	Çankaya University, Interior Architecture	2014
B.Sc.	Bilkent University, Interior Architecture and Environmental Design	2011
High School	Bileydi Anatolian High School /Antalya	2005

WORK EXPERIENCE

Year	Place	Enrollment
2014- Present	Freelance	Interior Architect
2014 February-2014 April	Erişen İnş. Anonim Şti.	Construction Supervisor
2012 July-2013 June	Artwork Interior/Exterior	Interior Architecture

FOREIN LANGUAGES
Advanced English, Beginner German

HOBBIES
Dogs, Swimming, Snowboard, Playing guitar, Teaching, Designing.