

YAŞAR UNIVERSITY GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES

MASTER THESIS

EVALUATING DESIGN PARAMETERS FOR ELDER'S SATISFACTION IN SOCIAL AREAS OF NURSING AND REHABILITATION CENTERS: THE CASE OF BUCA SOCIAL LIFE CAMPUS-NURSING AND REHABILITATION CENTER

ZEYNEP ALDEMIR

THESIS ADVISOR: ASSIST.PROF.ÇİĞDEM ÇETİN

INTERIOR ARCHITECTURE AND ENVIROMENTAL DESIGN

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

Jury Members:

Asst. Prof.(PhD) <;igdem <;ETiN

Ya ar University

Asst. Prof.(PhD) ilker KAHRAMAN

Ya ar University

Asst. Prof.(PhD) Didem KAN KILl<;

izmir University of Economics

Signature:

L 1 10

Johnan

Prof. Dr. Cüneyt GÜZELİŞ

Director of the Graduate School



ABSTRACT

EVALUATING DESIGN PARAMETERS FOR ELDER SATISFACTION IN SOCIAL AREAS OF NURSING AND REHABILITATION CENTERS:

THE CASE OF BUCA SOCIAL LIFE CAMPUS- NURSING AND REHABILITATION CENTER

Aldemir, Zeynep

Msc, Interior Architecture and Environmental Design

Advisor: Asst. Prof. PhD Çiğdem ÇETİN

Co-Advisor:

Month 2019

It is known that, today, old population is increasing speedily in Turkey, as observed worldwide. According to the population projection studies conducted the Turkish Statistical Institute, the old population has increased by 17% in the last five years across Turkey. This projection indicates that attention is required for the needs and requests of the elderly, as much as it is needed for the welfare of the young population, as well as that these needs should be met properly. To enhance the life standards of the elderly, more innovative, functional and life-facilitating solutions should be come up with for the places where the elderly lives.

Within this context, the aim of this study is to obtain new data concerning the designs that fulfill their needs by means of properly analyzing elders' transforming and changing physical, psychological and sociological states. Selected as the sample space study, since Buca Social Life Campus, Nursing and Rehabilitation Center is a heterogeneous space where individuals of any age over 60 that are of any cultural and life-style background, and a social area where elders spend the most active time of all their times, its social areas are analyzed in terms of spatial features and interior design layouts.

V



The data in the study has been obtained by means of literature review, observation and interviewing.

In conclusion, the literature review and the analyses conducted in the sample place reveal elders' needs in social areas of nursing and rehabilitation centers. The study makes suggestions concerning the interior design arrangement of social areas and particularly use of furniture layouts in such places within the context of these needs.

Key Words: Elderly, Getting Older and Their Changes, Designs for the Elderly, Nursing and Rehabilitation Centers, Buca Social Life Campus; Nursing and Rehabilitation Center



YAŞLI BAKIM VE REHABILITASYON MERKEZLERİNİN SOSYAL YAŞAM ALANLARINDA YAŞLILARIN MEMNUNİYET İÇİN TASARIM PARAMETRELERİ DEĞERLENDİRMESİ : BUCA SOSYAL YAŞAM KAMPÜSÜ, YAŞLI BAKIM VE REHABİLİTASYON MERKEZİ ÖRNEĞİ

Aldemir, Zeynep

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Bugün dünya genelinde olduğu gibi, ülkemizde de yaşlı nüfusunun hızla arttığı bilinmektedir. TÜİK'in nüfus projeksiyon çalışmalarına göre; ülke genelinde, yaşlı nüfus son beş yılda% 17 oranında artmıştır. Bu nedenle, genç nüfus refahının önemi kadar, yaşlı nüfusun ihtiyaç ve talepleri de dikkate alınmalı ve doğru şekilde karşılanabilmelidir. Yaşlı bireylerin, yaşam standartlarını yükseltmek için yaşadıkları ortamlar içindaha yeni, daha işlevsel ve yaşam kolaylaştırıcı çözümler bulunmalı ve uygulanmalıdır.

Bu bağlamda çalışmanın amacı, yaşlı bireylerin, dönüşen ve değişen fiziksel, psikolojik ve sosyolojik durumlarını doğru analiz ederek,bu analizler doğrultusundaonların ihtiyaçlarını karşılayabilen, tasarıma dair yeni veriler elde etmektir.Örnek alan çalışması olarak seçilen Buca Sosyal Yaşam Kampüsü Bakım ve Rehabilitasyon Merkezi'nde, 60 yaş üstü her yaştan, her kültürden ve yaşam tarzından yaşlıyı barındırdığı heterojen mekanlar olması ve yaşlının en aktif zamanını geçirdiği alanlar olması sebebiyle,sosyal alanlar; mekansal özellikleri ve mekânsaldizilimleribağlamında incelenmiştir.

Çalışmadaki veriler; literatür taraması, yerinde gözlem ve mülakat çalışmaları ile elde edilmiştir.



Sonuç olarak, yapılan literatür çalışması ve örnek alanda yapılan analizler sonucunda yaşlı bireylerin huzurevleri sosyal alanlarındaki gereksinimleri ortaya çıkarılmıştır. Bu gereksinimlere yönelik, sosyal alan mekansal dizilimi ve özellikle mobilya kullanımları ile ilgili öneriler sunulmuştur.

Anahtar Kelimeler : Yaşlı, Yaşlanma ve Değişimleri, Yaşlılar İçin Tasarım, Yaşlı Bakım ve Rehabilitasyon Merkezleri, Buca Sosyal Yaşam Kampüsü Yaşlı Bakım ve Rehabilitasyon Merkezi



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Zeynep ALDEMİR

İzmir, 2019

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TEXT OF OATH

I declare and honestly confirm that my study, titled "EVALUATING DESIGN PARAMETERS FOR ELDER'S SATISFACTION IN SOCIAL AREAS OF NURSING AND REHABILITATION CENTER: THE CASE OF BUCA SOCAIL LIFE CAMPUS- NURSING AND REHABILITATION CENTER" and presented as a Master's Thesis, has been written without applying to any assistance inconsistent with scientific ethics and traditions. I declare, to the best of my knowledge and belief, that all content and ideasdrawn directly or indirectly from external sources are indicated in the text and listed in the list of references.

Zeynep ALDEMİR
Signature
June 29, 2019



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SYMBOLS AND ABBREVIATIONS

ABBREVIATIONS:

WHO World Health Organiza

TUIK Türkiye İstatistik Kurumu (TSI)

US United States

CHAPTER 1 INTRODUCTION

1.1. Aim And The Scope Of The Study

The primary aim of the thesis is to offer solutions and suggestions concerning the use of furniture and interior space arrangements in the social spaces of nursing homes based on the psycho-social and biological changes observed in the elderly living in nursing homes. So, they carry out their daily activities more efficiently. To this end, the thesis dwells on the change brought by the fact of getting old, and the needs of the elderly changing in line with this fact. It is known that, combined with the problems arising from the difficulty of being a part of social life, the challenges that the elderly experience because of physical, psychological and social changes create a massive problem for the elderly. It is thought that, within this context, the suggestions offered for the social spaces of the nursing homes will enhance the elderly satisfaction with the space they are in, thereby increasing the extent to which they participate in social life. Within the context of this study intended to do so, the currently-running social areas of Buca Social Life Campus, Nursing Home, and their spatial arrangement and furnitures, users' comments, and expectations have been analyzed to contribute to the literature.

And the scope of the thesis; in consideration of researches and scientific certain datas which will be revealed in the thesis, giving interior spatial and furniture layouts suggestions for new future projects. New design samples are being made by examining the furniture in a Nurseand Rehabilitation Center and the expectations of the elders accommodating are taken into consideration. Buca Nursing and Rehabilitation Center has been taken as an example to be examined in this thesis.

1.2. Methodology of The Study

This thesis is a qualitative study that focuses on biological and psycho-social changes of the elderly living in nursing homes, and one that studies the challenges experienced by the elderly through these changes, and that includes design solutions and suggestions for the spaces concerning the elderly. The primary research and analysis method is litrature review for this thesis. The literature has been analyzed under the titles of the elderly and the elders' perception, and psychological and biological changes. Subsequent to analyzing these terms, a list of elders' needs has been created. Moreover, another literature review has been done on the types of nursing homes, their capacity and conditions they serve. In the third stage, the furniture use of the elderly, as well as their ergonomic analysis and spatial arrangements have been studied. Interior design layout is an approach that is intended to comprehend the process that composes spatial organization and the underlying social meanings. Under the light of the data obtained with the literature study that has been done, a spatial study is conducted in the sample space that has been picked for the study, which is nursing and rehabilitation centers. Observations and interviews have been conducted within this context.

1.3. Limitation of The Study

Structure of this study contains; voice recording with elders, participatory design examples, comparable design between nursing and rehabilitation centers in Turkey and worldwide.

In the first chapter of the study, literature information about the demographic facts concerning the elderly worldwide and across our country are analyzed.

In the second chapter, getting older and the changes and needs observed in the elderly are focused on in the literature reviews.

The third chapter deals with the parameters of interior space design for the elderly, which have been determined to change together with aging by the scientific researches. Accommodating demographically various elders from different backgrounds worldwide and across our country, nursing homes are reviewed chronologically, and successful examples are presented.

Within the context of the interior design parameters and nursing homes that have been analyzed, the fourth chapter presents the example of the current

Buca Social Life Campus-Nursing and Rehabilitation Center evaluated based on all of these interior space design parameters and nursing homes.

The last chapter of the thesis, on the other side, concludes with suggestions and conclusions for future studies on nursing and rehabilitation centers.

CHAPTER 2

AGING AND ELDERS

Aging and being an elder is not the last phase of an individual's life but a chronological period within life itself. Aging differs from individual to individual, from period to period and even from society to society, as well as based on the conditions that a specific society lives in. (Ceylan, 2015). The biological, psychological and sociological changes that are inevitable in aging are defined as symptoms of a timeless disease by Aristotle in his "De Generatione Animaliom" book; however, on the other side, in his "Mottos and ideas", Goethe is against the idea that aging is a negative process, and advises that the elderly should be active in life by encouraging that they should be more complied with life. According to Shakespeare, human life is made up of 7 periods. In his "As You Like It" poem, Shakespeare maintains that aging process comes with physical change and the flaws and disabilities emerging in the body, as well as resulting in mental functions getting weaker, which also causes changes in behaviors and perceptions. Another point of utterly different, of the famous German philosopher Schopenhauerexpresses that:

"Concerning the bodily development during aging, it is known that the youth is generally the happy phase of life while the aging period is an unhappy one; however, these ambitions are alive so long as they make an individual happy. Thus, the ambitions that drag the youth from one place to another causes pain more than it brings happiness; however, peace is something that is left for the aging period, a quite period, as the experiences are present at the highest density in one's life as facilitators of helping a person see the truth" (LEHR, a.g.e., sh. 19-21)

Today aging is seen as a process, rather than a period that is closer the end. Birren and Renner(1977) defines aging as the metabolism that goes through regular changes chronologically under normal circumstances.

Though it is difficult to set an age interval for aging period, the United Nations recognizes the age of 60 as the onset of aging process while the World Health Organization defines it as gradual and slow decrease in adaptation to life itself and social life, and sets the ages between 60-74 as the aging process. (Ceylan, 2015).

It also evaluates the case of aging in three separate stages: Individuals aged 65-74 are the young-vigorous elders; those aged 75-84 the old elders; and those aged 85 and over over-old elders (World Health Organization, 1999; Önal, 2006; 5-6)

According to the researches conducted by the World Health Organizations, though the 30 years of increase in life expectancy is one of the biggest developments in health during the recent century, the decrease in birthrate has increased the old population. To put in other words, WHO researches inform that the world population is getting older (WHO, 2015). The elderly account for 8.7% of the total world population; and ranked 66th worldwide with its old population of 6.6 million elders (aged 65 and over) (TSI), Turkey had an old population of 5 million 891 thousand 694 elders (aged 65 and over) in the year 2013. This figure has increased by 17% within the last five years, thereby making this population 6 million 895 thousand 385 in the year 2017. In Figure 2.1. there are woman and man elder numbers according to their age and year 2014-2016. (İstatistiklerle Yaşlılar, 2016 Sayı: 24644 March 16, 2017)

			(1.11)
Yaş	Toplam	Erkek	Kadın
0	78,0	75,3	80,7
65	17,8	16,1	19,3
70	14,1	12,7	15,3
75	10,8	9,7	11,7
80	8,1	7,2	8,7
85	6,0	5,2	6,4

Figure 2.1. TUIK Life Table, 2014-2016

According to the data made available by the State Planning Organization in 2005, the number of the individuals aged 65 and over is 6 million 147. It is projected that, for the year 2015, this number will reach 8 million 442 thousand 700, and 12 million 55 thousand 400 for the year 2025.

Figure 2.2. indicate that aging will become a problem in our county as well, a problem that interests not only individuals themselves but also the whole society. This will also require solutions to be come up with to solve these problems.

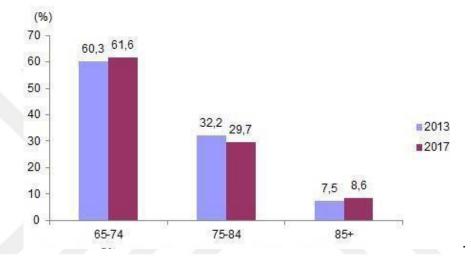


Figure 2.2. TUIK, Elderly Population Based on Registration System (May not give the total number as it is the round figure)

As the old population is increasing rapidly in Turkey, Turkey is projected to be listed among the countries with the highest old populations such as Germany and Japan. According to this projection, creating more quality conditions for the elderly is of high importance not just chronologically for the sake of their physical well-being but also for their psycho-social well-being, which should also be analyzed carefully so the spaces that fulfill their needs are created. The concept of aging should be analyzed from different aspects so the elderly are understood better and provided with better living conditions. (Cindaş, 2001) (Akçay, 2015). Today, many scientific researches conducted in the field of aging reveal that, to improve health status of an elder, it is possible to associate the elders' physical and cognitive well-being with their active aging, which is that they are independent in their daily lives, and to embrace this idea. (Tambağ, 2013).

Moreover, to increase life expectancy in a quality manner, healthy facilities and tools should be focused on in scientific researches. Their creation process is also incorporated into scientific studies. In this thesis, the psychological changes and therefore the sociological changes of the elderly, as well as their biological needs are recorded with more explicit data—for future researches that are to be done in the fields of literature review and application. It is, thus, the aim of this study to contribute to future literature reviews and applications. (Kayıhan, H., M. Yucel, H., Düger, T, 2006; Arıoğlu, S. (205-219).

2.1. Changes In Aging

Aging process causes biological, psychological and sociological changes. Adaptation to the changes requires biological, psychological and sociological renewing processes. There are two main factors that differ by individual. One of them is aging in tissues and organs that occurs through the chronological process because of genetical and environmental impacts, which is biological aging. The other one is managing the wearing in the physical organs and tissues through this chronological process and embracing these changes, which is psychological aging and defined as the process of adapting to all these varying conditions (akçay, 2015) (cangöz, 2009).on the other hand, cognitive abilities dicreases are directly bounded with these 3 factors.

The thesis analyzes the changes in aging under three sub-groups based on the data obtained during literature review. These sub-groups are biological, psychological and sociological changes.(Table 2.1.)

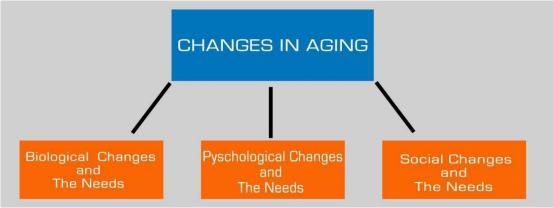


Table 2.1. Types Of Aging, Changes And Needs(Zeynep Aldemir)

Norofix, a cognitive function improvement company, has a statement about cognitive functions, which is as follows:

"Cognitive functions are the main skills that our brains use to think, read, perceive, learn, remember, reason, watch out and deal with languages. All these functions receive the input information when the input information comes, and carry it to the info bank that we use every day. Moreover, the limitations to both physical and psychological activities and productivity, decrease in social life as a result of the change in social status, and a lot more problems caused by aging, as well as other psychological problems caused by death of a partner and even the children leaving the house to go on their own separate paths, and the feeling of escalating loneliness that leads to depression all cause decrease in life quality, which is one of the major factors that lead worse life quality."(Singh and Misra, 2009.)(http://www.norofix.com/)

For healthy aging, a diet complying with the aging physiological state, not drinking and not smoking, physical activities suitable for aging process are all recognized as the main factors that help individuals age in a healthy manner. (Riekert et. al., 2014). The elderly face challenges that vary based on aging, as well as needs that change in line with these challenges. The first circle of support that makes their daily routines easier in this process includes a family member and/or members, neighbor, or a close friend.

In today's modern society, another gradually-deepening problem is the problem of social isolation of the elderly. Starting from the onset of the aging process, social isolation and an intense feeling of loneliness are observed to escalate, thereby exposing an impact on elders' satisfaction with their lives. This impact is directly related to the life satisfaction term that was invented by Neugarten (1961), a psychologist. Life satisfaction term is the state of fulfillment of the expectations, needs, desires and wishes as the relevant individual wishes. According to this case, communication and social activities in the elderly decrease significantly after the ages of 60-65, thereby causing a decrease in their life satisfaction and the same amount of decrease in their happiness. The sudden complete social isolation leads to severe psychological diseases. Among the other factors that affect life satisfaction

according to the literature are sex, age, education, income, social status, marital status, health status, social relations, level of social activities and even nursing home life. According to the research data by the TSI, in 2016, 64.5% of the elderly across Turkey expresses that they are satisfied with their lives, and that they are happy. For the year 2017, this percentage reached 66.1%. Physical inadequacies, loss of their partner or a loved-one, changes in social roles, shrinking on the social network all cause challenges for them to sustain their daily activities. This situation further leads to rapid increase in their needs (Tel et. al., 2006). The more accurate and balanced these needs are met, the higher and stable the life quality is boosted while also fulfilling their life satisfaction. According to the definition given by the World Health Organization (WHO), life quality can help individuals perceive their place in life and meet their physical, psychological and social needs in relation to their expectations of life, standards and interests within the framework of the culture and the value system that they have grown up. (Yücel 2008).

Mc Daniel and Bach(1994) base life quality on four bases such as a dynamic feature (can change in time), b. multi-dimensional feature, c. interactive feature (affected by the interaction with individuals and the environment), and d. adaptation to individuals' expectations and the changing situations in their lives, and they also report that it starts worsening together with aging. One of these dimensions, the physical aspect of aging that concerns chronic diseases, rapid decrease in physical activities and cognitive disorders, and its psychological and sociological aspects that concern a fixation or decrease on the level of income following retirement, personal care, diet, social isolation, discrimination, negligence and abuse (Daniş 2004) all go parallel with life satisfaction and their desire to be together with their loved ones, thereby effectively imposing an effect on life quality (Emiroğlu 2007).

2.1.1.Biological Changes and The Needs

Biological changes through the aging process have been analyzed by many theorists. The most discussed and supported theory concerning aging of all that is known worldwide is the Autoimmune theory of aging which is directly related with immune system and attacked tissues. The other one is Telomere Theory of Aging, which asserts that telomeres that are a part of chromosomes lose strength and get shorter

with each cell division, and cause cellular aging when it stops dividing after it has reached the critical level of shortening. Many diseases that are seen during aging are associated with these two theories (Yılmazer, 2013). Biological aging occurs when the physiology and the anatomy within it chronologically wears out, causing changes through this process. The metabolic operation age of a person can be way lower than its physiological age (faster) or way higher (slower). This situation actually reflects the running of an aging person and its organs.(Akçay, 2015).For example, posture disorders caused by the wearing in the skeletal system, the opening between the two shoulders getting unbalanced, or changes on chest depth. Furthermore, significant value decreases can be seen in body's structuring and productivity. Combined all together, they bring about inadequacies that may cause problem in cardiovascular system, kidneys, digestion system, liver, brain, lungs and endocrine system.

Moreover, as discussed in the thesis later on, losses in senses start after the 40s, and rapidly escalate as of the onset of the 60s. For example, taste buds are disrupted, and the sense of tasting diminishes. Even the sense of smelling diminishes. Skin dehydration, numbness and pain arise after stimulant receptors start dying. Another important loss is observed to occur in eyes. The loss of sense in eyes causes changes to vision quality and how an elder perceives colors. Losses that start in the sense of hearing increase with each year passing-by. This loss causes them to hear only highpitched or loud sounds.(Saurabh Suman · August 2, 2016).Kinesthetic sense losses cause injuries and permanent imbalances. Kinesthetic sense losses are important for individuals of any age, and the elderly. Because kinesthetic senses allow us to sense the speed, direction and power of our actions by also helping us sense the harmony between our limbs. What contributes to kinesthetic sense losses in the elderly is loss of elasticity, and structural impairments in joints and cartilages. These impairments and loss of elasticity limit the actions, causing delays in starting and continuing an action, or even more serious problem. Genç et.el., 2013). According to the researches and findings of the Academic Geriatric Foundation, the most common problems observed in the elderly are urinary incontinence/encopresis, dizziness, fainting and falling, bed sore, insomnia, multiple-med use, delirium (change of mind caused by a temporary reason). The main problems in biological clarity have been determined to be pain, osteoporosis, shortness of breath, forgetfulness and urinary incontinence caused by it. (http://www.akademikgeriatri.org/)

According to foreign literature studies, the most common geriatric problems are expressed as 7 "I"s of Aging. These are: 1. Intellectual failure, 2. Immobility, 3. Instability, 4. Incantinance, 5. Insomnia, 6. Iatrogenic Problems, 7. Involvement of families.

2.1.2. Pyschological and Social Changes and The Needs

Considering the needs arising from the psychological changes and transformations that are discussed in the first chapter, the change brought about by their biological age, and the mental process that they are in to deal with the losses and occasional inadequacies are about their psychological age. This process is also one that requires them to adapt to their social environment and changing conditions (Akçay, 2015; Cangöz, 2009).

Researches indicate that the psychological change is also based on a few scientific theories. One of them is continuity theory. Continuity theory asserts that the activities that individuals sustained in the past and are still continuing contribute to their psychological satisfaction. The activity theory maintains that the higher the happiness of old individuals and their life satisfaction are the more of these activities they can sustain in old ages. Moreover, there are serious studies indicating that the elderly sustaining their activities are happier than those not sustaining their activities. In modern world, happiness is inevitable if individuals are active and continue their activities that are suitable for their own lives and important for them (Hooyman & Kiyak, 1996).

Mental (cognitive) aging is now discussed within the framework of active aging. For a happy aging process, it is highly important for individuals to be a part of life and society, in other words, to be active. Psychological state and mental health are directly related to each other, and affect each other as well. Functions such as attention, memory, talking, understanding and perceiving should be in good state so they expose a positive impact on brain i.e. physical health. The researches indicate that, for active aging, protecting mind, protecting feelings and being positive are important factors. To achieve this, it is important to take good care of physical health, to keep the mind running all the time, to improve mental state and to make physical activity a lifestyle for themselves to protect themselves against losses of

senses that are observed as part of the physical changes, and to create a supporting social environment. (Noyan,A.(2013)Aktif Yaşlanma zihinsel ve duygusal yaşlanma, İzmir 6.ileri yaş sempozyumu)

Maslow (1943) defines basic needs of an individual, and maintains that these needs are in a hierarchical order starting from the bottom and continuing towards the top. While the physiological needs do not change mostly, the others change occasionally. Diseases, stress and states of crisis may arise from the situations where these needs are not met, and such needs change based on the disease itself. Maslow considers psychological needs, human and motivational needs equal, placing them at the very bottom of this hierarchy.

The next layer includes psychological needs and safety needs, belongingness and love needs, and esteem needs. The top of the hierarchy includes self-fulfillment needs, not health or neediness. However, for the elderly, Maslow' hierarchy of needs places living needs, accommodation and health at the lowest value of the hierarchy considering the fact that the spatial and environmental needs of the elderly are different. The safety part shown in the Table 1 is shown together with stability and comfort, which also incorporates different sub-cases. To give an example of these sub-cases, they are easy and comfortable transport from place to another. (Figure 2.3.)

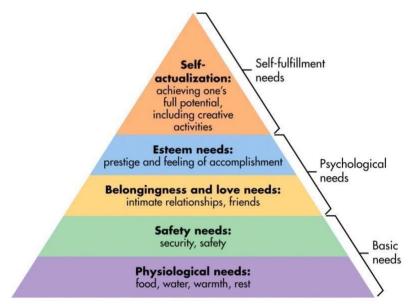


Figure 2.3.Maslow's Hierarchical Needs Chart (https://www.simplypsychology.org/maslow.html)

Ojha and Pramanick (2009) revises Maslow's hierarchy of needs according to the needs of the elderly. They study the impact of age on the priority and intensity of different needs. Conducted in India, this study was carried out in 6 separate age groups (21-30, 31-40, 41-50, 51-60, 61-70 and 71-80) to study the correlation between age and different needs that include psychological, safety, loving-being loved-belongingness, respect and self-actualization needs. This study concludes that the physiological needs bear the greatest importance for the age interval of 21-30; safety needs for 71-80; loving-being loved-belongingness for 71-80. According to this study (Ojha and Pramanick, 2009), for the age interval of 61-80; loving-being loved-belongingness, physiological, respect, safety and self-actualization needs are listed in an order different than they are listed in Maslow's hierarchy of needs. In this hierarchy developed for the elderly, psychological needs related to personal fulfillment such as community events, communal space and intellectual stimulation are listed at the top. This factor stimulates the feeling of belongingness of the old individuals. Right below it are followed by safety, stability and comfort. At the bottom of the hierarchy are food, housing and health. (Figure 2.4.)

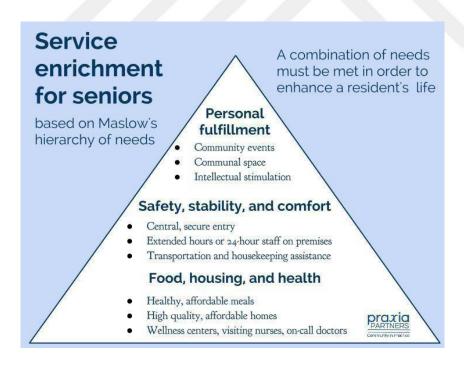


Figure 2.4. Praxia Partners- Service-Enriched Affordable Senior Housing Chart, Sharon Glyn And Corban(http://praxia-partners.com/the-older-americans-act-and-service-enrichment-for-seniors/)

Considering the needs arising because of the sociological change and changes, that are discussed under the second title of the chapter, the elderly are required to sustain their social environment in line with the changes experienced in their social environment. Along with the life roles that turn into a massive range of life experiences, their social identities that come to an end bring about changes in their social perceptions and needs. In consideration of all these humane needs, the elderly do not only need spatial fulfillment but also need to be a social and wide community. Furthermore, individuals are affected by how the society that they are living in see the elders' value. This perception of the elders' value can be positive just as well it can be negative, thereby creating new needs to deal its such negative perceptions. (Akçay, 2015). Fulfilling such needs create the case of life quality. According to World Health Organization (WHO)'s life quality group, life quality is individuals' personal perception of their state in their own life both within the context of the cultural structure and the system of values that they are living in and in terms of their own objective, expectations, standards and worries as well.

According to Cumming, there are 3 dimensions in an elder's giving up on live, among which is shrinking in his/her life space. Aging and environmental losses cause them to be in interaction with less people, thereby diminishing their roles in life. Another factor here is that an elder starts to lose his/her strength to fulfill his/her roles in life. And the last of these three dimensions is that they start to accept that they are getting weaker in controlling and managing the situations.

Today, as the old population increases, the scientific researches and studies are based on determining the policies that concern the elders' social harmony with their environment, the way they perceive themselves and whether they can perceive themselves, their undertaking an active role in society and helping them participate more, as well as determining the policies that might help them the most. Social aging theories are the theories that focus on the social environment of the old people to see how they get older, and intended to explain the changes in sociological terms. One of these theories is disengagement theory. This theory asserts that the elderly draw back step by step in physiological, psychological and sociological terms. This drawing-back is perceived to be getting ready for death in theory (Durak, 2015).

As a result of this theory, stimulated by states of depression, psychological aging and even physiological aging get accelerate. Another theory is mobility theory. This theory asserts that sustaining a level of mobility in elders' life roles help them sustain a quality level both in their social and psychological and physical wellbeing. Getting support from their family or social support from the outer world confirm this assertion for the elderly. (Walaskay, 1983-1984)(http://kpssogretmen.blogcu.com/yaslilikta-sosyal-duygusal-gelisim/8836598)

Moreover, the studies highlight that life satisfaction are directly related to their level of participation in spare time activities. According to Erik Erikson, individuals over 60 are in the 8th stage of life. For him, among the eight different factors that affect individuals' psycho-social life are relations, personal differences, conceptual process, health, education, culture and ethnicity, social and economic status and physical environment. Each of these eight factors vary among individuals, and fulfilling them at the highest possible level increases elders' life satisfaction and help them age in a state of healthy sociological and psychological wellbeing.

Lately, there have been ongoing discussions and views brought up in the European Union countries concerning social disadvantages caused by aging. "Social exclusion" means -as a term- being partially or completely excluded from the multi-factor system that helps the society and the individuals in it become integrated. To be able to better the perception of social exclusion and its effects, the elderly should be provided with facilitators that help them access basic services (post office, banks, market, etc.), cultural and social events (painting, music, hobby courses, membership to unions, voluntary programs, etc.) easier. (Hamide,N, Ahsun,S., Çelik, G., *Yaşlılıkta Sosyal Dışlanma*, 2.Uluslararası 11.Uluslararadı İzmir İleri Yaş Sempozyumu 21-22 Mart, 2018)

CHAPTER 3

DESIGN PARAMETERS FOR ELDERS NURSING AND REHABILITATION CENTERS

Designing and arranging the space where the elderly live validate the assertion made by Skinner (1983), who maintains that,

"Different from any other organisms, aging in human is dependent on environmental physical and social changes."

These changes expose direct impacts on the composition, quality of the place where the elderly live in and their life satisfaction. The recent studies produces huge amount of data concerning the relation between the elderly and the interior space they are in. Some rules and parameters have been specified for design and scientific data have been accepted. However, because of the differences observed in the ways how aging is perceived, the set of data concerning design and interior space arrangement vary within itself. As already stated previously, physiological, psychological and social change and changes cause these situation. This chapter will also reveal that the changes observed in terms of physiology, psychology and sociology expose a direct impact on each other in design as well. First of all, physiological changes and problems that affect interior design will be discussed.

3.1. Design Parameters According To Biological Changes

Physiological changes arising during aging (limitation to mobility, perceptual mental changes, loss of senses, etc.) lead to changes in what the elderly expect of the physic. These changes affect many factors such as equipment, equipment design/preferences, detailing of architectural structure parts, organizational character of space and technical equipmental environment. These physiological changes are divided into 3 main title. (Table 3.1.)

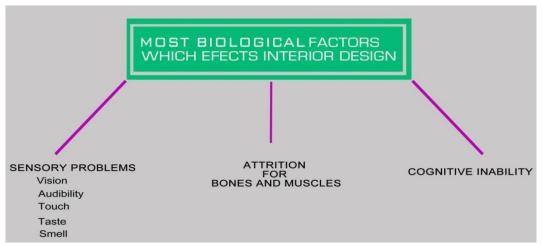


Table 3.1. Most Biological Factors Which Effects Interior Design (Zeynep Aldemir)

3.1.1. Sensory problems

First of these factors is sensory problems, which include vision problems, audibility problems, numbness, taste and smell problem. Wearing in senses or their losses have a greater impact on design in various terms. Among the factors listed under loss of sense that have a direct effect on design is vision, which includes color, lighting, discrimination for level differences; and acoustics. Here is how the materials are reflected onto the interior architectural space after they have interacted with the weakened vision and changes in vision.

The most important branch of vision is color and color preferences. In the interior spaces where the elderly live, the colors of green, purple and blue -all on the scale of cold colors- are difficult to be perceived by the elderly, according to researches. On the other side, use of the soft tones of red, orange and yellow in interior design play an active role in the perceptions of the elderly. Researches also indicate that the higher the level of energy in these colors used is, the faster the circulatory systems of the elderly get. Using colors that are warm and promote security and harmony are important too. On the other hand, as already accepted scientifically worldwide, using soft blues, violets and lavender can make the elderly person connect to a spiritual or reflective mood. (Figure 3.1.)



Figure 3.1.Basic Color Wheel (https://expresscolour.sg/beginners-guide-to-picking-a-great-colour-scheme/cool-warm-colours/)

Additionally, with no discrimination of color, the designs that incorporate patterns or dark lines cause confusion, and directly affect vision, thereby causing negativity in balance and leading to falls by high percentages. (Johnson, Adams, Twelker, & Quigg, 1988). So, interior designs for elders, we avoid dark flooring inserts as they become obstacles. Complex pattern in floor carpet is not acceptable for their vision and cognitive abilities.(Figure 3.2.)



Figure 3.2.Floor Pattern Sample Photo Credit R. Wrublowsky, 2017. Austin, TX. Westminster Memory

To diminish the impact of the worries, loneliness and social exclusion, which are all incorporated in psychological and social aging, hot colors should be preferred as they inspire a feeling of coziness and safety. Light colors that are in the details of the design of the surrounding area can increase their interest in the outer world, and can keep cognitive function vigorous, which one of the three factors important for interior design. Pastel color can also be used in the elders' space but it also has to be vibrant tone so it keeps mental and cognitive state vigorous. (Atkinson, Carolyn 2004.) (http://www.resene.co.nz/homeown/use_colr/colours-for-living.htm).

Some studies also demonstrate that using light blue and green tones can inspire feelings of peace and be supportive emotionally when used together with light pink and beige.

Colors that provide a high contrast, such as white plates and a dark colored table cloth, should be used in interior spaces to do so as stated above. Chair seats should contrast with the floor to make the edge of the chair more visible.

Colors that provide a high contrast, such as white plates and a dark colored table cloth, should be used in interior interior spaces. Chair seats should contrast with the floor to make the edge of the chair more visible. (Figure 3.3.)







Figure 3.3.Changes of Elder Visison
The Journal of Gerontology, Emily Eifler, Associate Designer, Colour Studio

The second most important factor that is to be discussed under the title of vision is daylighting and artificial lighting for the elderly is something new for architects and lighting designers to consider, especially since poor lighting can lead to accidents and falls. Aging bring about the problem of plethora of visions and attritions in retina, as well as Cataracts, Glaucoma, Macular degeneration, and Floaters that lead to problem of light in retina, causing the elderly see everything more pale and colorless.

Le Corbusier (1959) maintains that the gradually lightening tones of colors that almost disappear can be used for directions. It can be quite helpful to especially use floor covering materials on their walking ways and change of colors on the walls and at spots where they have to be careful so they can read their environment more easily. Additionally, the separation between floor and wall, separation of doors materials from the walls that they are mounted on or the separation of furniture materials from the floor tiles can be done powerful color contrasts. It has been proven both in literature and in practice that the elderly can differentiate bright and shiny colors better than they do the cold ones.(Wijk, Berg, Sivik, & Steen, 1999).It is always beneficial to use high-contrast colors to foreground the the difference between surfaces and objects. An elder can perceive faster and more clearly a stair edge or the surface under it if they are applied a definite contrast color change. This will diminish the risk of falling. But this may also lead to cognitive and functional confusion in the elderly if too much of contrast-color interior design is preferred. (Akan E, 2017)

In the places for the elderly, use of high-quality light can be quite helpful in diminishing such damages. Moreover, preferring big windows in the spaces designed prevents the elderly from being exposed to constant artificial lighting, thereby contributing to their physiological wellbeing, as stated in previous chapters, as well as their psychological wellbeing. The elderly cannot adapt themselves easily to sudden lighting and changes in light density as the young do. The lighting difference that the elderly experience to go from the outer space to the inner space or vice versa causes more damage to their balance and affect their mobility. (Eunice Noelle-Waggoner, 2014).

Therefore, the lighting in the interior space should not create a high level of difference between itself and the outer space. The interior place that is being designed should benefit from the daylight itself as much as possible. (D. B. Elliott & Whitaker, 1991). Moreover, reflection should be diminished and spread at equal levels to make the best use of the lighting control in interior spaces. Experts have determined that the central reason to falling accidents that are seen in the elderly the most is the reflection problem. They also state that among the best solutions to diminish reflection is to use smooth, matte, non-slippery materials that have the least possible patterns both on floor and furniture.

Reflection and brightness is also directly related to lighting and daylight. According to researches conducted by psychologist, the lighting that comes to the interior places (daylight coming through window, moonlight, etc.) or the lighting that has been created artifically in interior places activate some set of feelings in the elderly.(Odabaşıoğlu,S.2009) A natural lighting, daylight is seen to be important in making people feel alright psychologically. Particularly in the patients with dementia and those that are prone to the disease can experience an increase in stress, confusion, unusual behaviors and agitation during the first hours of the morning and the sunset when the levels of natural lighting are different. While designing lighting, attaining to a natural level of lighting and projecting an accurate lighting to create a night-day space bear a significant amount of importance. Inaccurate arrangements in lighting of spaces may cause delays in sleeping phases and correction of circadian rhythm in the elderly. Adequate amount of light should be provided for the nursing and rehabilitation homes (the effect of daylight on melatonin and subjective general health factors in the elderly). This will help the elderly manage their vision problems easily.

Winning many arhitectural prizes between 2012 and 2014, a design is presented in Pilgrim Gardens Project. This project can be given as an example for how to make best use of the daylight. Double-aspect flats encircle communal garden spaces of hard and soft landscaping, and a shared colonnade acts as a slow circulation space. Inbuilt sliding glass doors to allow the use of the balconies year round. Designed in an attempt to make the most of the daylight, Pilgrims Garden allow the elderly to get social in a controlled manner and in their own privacy. (Figure 3.4.)





Figure 3.4Pilgrim Gardens, Evington. Image courtesy of PRP Architects (https://www.prp-co.uk/home/detail/pilgrim-gardens.html)

Another successful example in making the best use of daylight in interior design in terms of lighting and architecture is Dietger Sissounig Architekten's Nursing and Rehabilitation Center in Austria. High amount of wood use and double-side corridor planning allow the elderly to both benefit from the daylight and to be encouraged to be in mobility and in circulation. (Figure 3.5.)



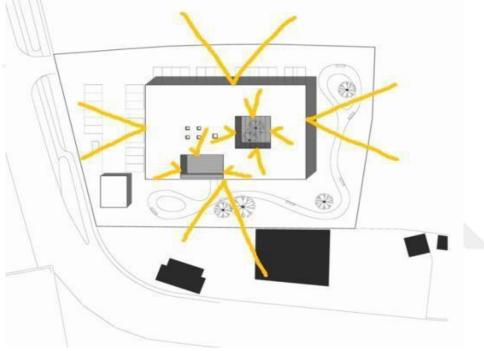


Figure 3.5. Dietger Sissounig Architekten's Nursing Homes in Austria (www.archdaily.com)

Related to vision sense, another important factor is the texture term. The texture term in terms of vision sense is prevalent with the quality of the materials used. In fact, texture always expresses a function in nature, but it is an existing quality of the material in architectural terms. Another important sense that requires effective changes in design is loss of audibility sense. The acoustics of a space is controlled by sound waves that are arranged accordingly. This control allows the elderly to demonstrate healthier behaviors in interior design.

Loss of sense starting at the onset of 60s and then escalating fast does not have an effect on design; however, later on, the high sounds that are on the background also increases the loss of sense simultaneously. And the elderly experience difficulties in hearing and understanding during conversations. This situation clearly demonstrates that the elderly cannot get social away from long distances. The materials that are not supposed to be used in designing spaces for the elderly might absorb sound or cause echoing and create resonance, thereby triggering loss of audibility. It can cause agitation and anger in their psychological health while also causing high blood pressure or ulcer in their psychical health. To diminish the amount of unnecessary sounds and resonance on the background in the spaces for the elderly, and refraining from high-frequency sounds serve for the benefit of the interior acoustics (Mitchell T and Longyear ,2006). Moreover, in audible perception interaction, since the materials used for the composition of the space have different absorbing qualities by their texture, they can be used as a factor affecting audible perception. For example, as wooden surfaces are audible when stepped on, they can be of benefit for the orientation of the elderly that have weaker sense of vision (Carsten, 1985). Wall surface with alcoves, roof with irregular intrusions and necessary flexible tiles can be used for a wide sonic space while designing interior spaces for the elderly. (Brawley B, Taylor M (2003) Designing for senior care environments. Architech Magazine.)

3.1.2. Attrition For Bones and Muscles

The second main title, Attrition for Bones and Muscles ia completely related to loss of senses. They can also cause only damage to muscle and bones, loss of power, sudden imbalance and permanent instability in elders that do not have any loss of sense.

Indecisive design in a place i.e. ambiguous separation of colors and areas (vision), inaccurate orientation of echoing sounds (audibility), and rough surfaces that are prone to reflection all cause the elderly to experience inaccurate reactions in their already weak and unbalanced skeletal system (Kent S, Fildes B, 1997). All of the architectural measures that are taken against the weakening skeletal and muscular structures of the elderly bring about stability (balance), as well as allow them to be in mobility and facilitate accessibility for them.

This factor has a direct impact on strength and balance, and is thus a serious "spot" in the spaces designed for the elderly.

Since the vision problem that is discussed under sensory problems and the problem of attrition for bones and muscles factor bring about situations that lead to falling and wounding, they bear a greater importance in the composition of the interior designs.

Another topic i.e. accessibility is a situation that links the topics discussed in Chapter 3 to each other, and has an effective role in designing. Because accessibility deals with the limitation of elders' mobility and freedom in a space, which refers directly to their life satisfaction. An elder person who has a fulfilling accessibility can create her/his own Proxemics as s/he wishes. A science of personal space, proxemics is a study field that studies the impacts of the scalable spaces that the people share with each other since they are obliged to be in interaction in daily life on individuals. In his studies on this theory, Hall focuses on the impact of the perceptual changes in people caused by distances that people put when together, and the distances of common spaces. For an active and healthy aging, accessibility should be facilitated; grouping, orientation, and relationship of interior to exterior factors are also effective on this theory. Proving that arranging the distance between each elder in their rooms and in the social spaces where they spend the most of their time outside their rooms increases life satisfaction in the elderly, Hall maintains that accessibility to object on tables and shelves should be arranged in consideration to with the elders' manoeuvre skills and competence. Because, in spaces where the elderly put too much effort to access an object by stretching or by reaching out, serious problems can occur in their weakening muscular and skeletal systems since they are mostly caused by short-term physical changes. This may also have a psychological impact on the elderly since it might cause them to start disliking the environment perceptually, resulting in the elderly that do not want to spend time in the relevant space and feel isolated (Zorlu, 2015).

3.1.3. Cognitive Inability

Cognitive development or recession may differ from person to person. As this is more heterogeneous in the elderly, it may not be seen that the cognitive abilities are in recession. The aging cognition and mind experience difficulties mostly in directions, measuring and comprehending. Lifestyle, education, health, socioeconomical status, emotional and behavioral lives, as well as lives variable by genetics directly affect the cognitive inability of the elderly. What is affected the most by the cognitive inability through this definite and comprehensible changes during aging are, both physically and psychologically, the elders' speaking speed, perceptual and reactive speed, decision-making, spatial awareness, executive functions, attention and memory. (https://www.ncbi.nlm.nih.gov/books/NBK316201/). Though it has been determined by various cognitive skill tests that constant decrease is seen in cognitive ability because of aging, expert and assistant improvement factors can help them succeed at high level in most of their daily activities, and sustain it. In addition to remembering their daily routines, they can select physical activity or social activity, and participate in them. The scientific researches confirm that the elderly should not let their social life factor worsenand further increase the time that they spend in social spaces to be able to sustain their cognitive state to prevent it from worsening further. situation highlight the importance of the spaces where the elderly can get social in their own privacy for the interior space design.

3.2.Design Parameters According To Pyschological and Social Changes

In cases where the elderly cannot set up a setting suitable for their own physical or even psycho-social state or when such setting cannot be met they experience disharmonization problem and their life quality starts to fall speedily. When forced or by their own wish- to leave a house setting and thus to adapt themselves to a completely different and a new environment and setting in social and structural terms, the elderly complete the last phase of personal development in the elderly house. According to Bachelard(1969) the elderly living in nursing homes define the meaning of life not just as an existence but also as their participation and incorporation into a system that is going forward based on a spatial order.

Considering this definition, architecture play a critical role in fulfilling human needs just as much as it does in protecting and sustaining a person's identity (Bachelard, 1969). The sensual and cognitive features of the space where the elderly live play an important role in their efforts to express their behavioral identity. Furthermore, the perception concerning the space and its physical features has significant impacts on a person's existence and a person's efforts to sustain an identity. Gathered all together, they all form basic connections between architectural design and elders' psychology, thereby introducing new perspectives for defining and analyzing.

The table demonstrates that fear of falling under the psychological change factor creates safety needs. Cases of falling and fainting are linked to the second factor on the physical change table, which is attrition for bones and musclesa. The factor of being alone and excluded actually stems from the common changes observed both in the psychological and sociological areas. In the factor of being alone and excluded, the thought that they might experience lack of social activity and that diseases will take over their lives as they get older causes the elderly to feel different from the others and feel alone. And social isolation layer starts to escalate around the elderly. Fear of fall, reduces their realms of activity, limits independence and increases social isolation which leads to depression. (Table 3.2.)

Help from family members, friends and other healthcare staff members is sought to get rid of such layers escalating around the elderly. To achieve it, accessibility is required.

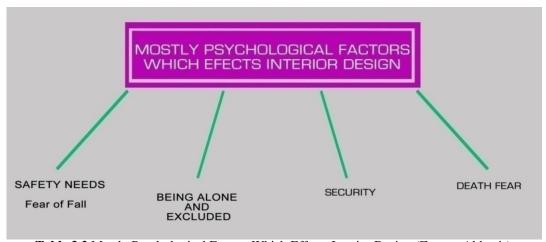


Table 3.2 Mostly Psychological Factors Which Effects Interior Design (Zeynep Aldemir)

To give a place example at an institutional nursing and rehabilitation centers; library and book provision, hairdresser, tailor, laundry rooms, ironing rooms, kitchen services should be provided, and painting and handcraft ateliers, spacious social event areas, concert hall for music performances and concerts, swimming pool, walking trail, and kindergarten - so the elderly are in contact with children - are all needed in a nursing home. Moreover, to allow the elderly to participate in different activities (chess, backgammon, ball, bocce tournaments, etc.), cafeterias can get organized. It is of high importance to make sensitive and accurate decisions concerning the spaces that are intended to allow the elderly to get social. Because all these factors are interlinked. (1. Uluslararası 10. *Ulusal izmir ileri yaş sempozyumu*, March 22-23, 2017, p. 46-51)..

On the other hand; personal space, privacy, territoriality, belongingness, way-finding and social interaction factors have an impact in a way that causes variations in design parameters in spite of the psychological changes in the elderly. For the elderly, personal space is the area that can be intervened only to the extend that the elderly allow. We can see 4 circle and the blue one is personal space of people. (intimate distance). (Figure 3.6.)

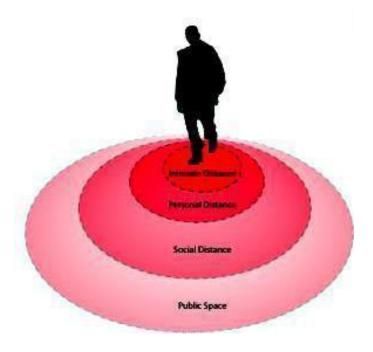


Figure 3.6. Body Contact and Personal Space in US. (https://housinglab.wordpress.com/2013/05/06/housing-a-personal-collective-issue-part-2/)

In Schopenhauer's story about a hedgehog, it is stated that;

"People are close to each other just to the extend that they can feel their warmth; however, they are away from each other just to the extend that their quills stick to each other," and referring to personal space.

For the elderly, the place should extend to each side at equal levels, and be global as much as possible. According to Mumcu, just like the meaning of the cover of a structure and its walls for giving a meaning to the relevant structure, the same applies to the meanings of personal space, territory and privacy terms for the elderly. The elderly draw their own territory based on the experiences that they get based on the environment they are in and the changes occurring in relation to their physical competencies. Being of the same level of importance as personal space is, privacy is a border-control process, which is a case deeper and observable in the elderly. The elderly live their own privacy by forming intimate relations or by isolating themselves, which may lead to psychological problems.

The balance between the personal space and privacy can be dependent on their age, sex, sensual skills and even their social roles and experiences, just as much as it is on variables such as desires, expectations and participation. Additionally, territoriality and belongingness are defined as a mechanism of border arrangement that incorporate determining their own space and personalization of the space (Altman, 1975).

In their construct where they re-model nursing homes, Wojgani and Hanson (2007) places the social areas where the elderly get social at high levels of interaction around the main entrance while they place the personal spaces that requires privacy away from the main entrance intentionally. This construct determines the physical features of place construct while also defining the social interaction of the space. Wojgan and Hanson(2007) also adopts the safe space for individuals term while designing this new model that incorporates such features as orientation, easily-readable, followable and carrying some other specific features. (Figure 3.7.)(3.1.2.)

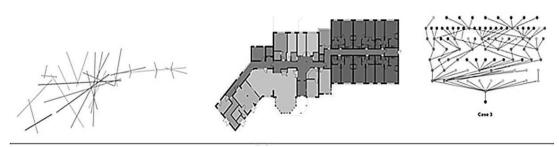


Figure 3.7. Wojgani and Hanson Nursing and Rehabilitation Center- Remodel

The researches confirm that this approach is important especially in terms of entrance-exit areas, location of main spaces, circulation in the space, organization of the spaces, visual perception and accessibility in the architecture as they all facilitate orientation (Arthur and Passini, 1992).

In terms of nursing and rehabilitation centers for the elderly, the plan constructs that can be solved by the elderly easily and that do not cause confusion enhance elders' control over the surrounding area, making it easier for them to find their ways and decreasing potential stress in them. In the spaces created in the institutional buildings for the elderly, there are two definitions for these spaces in terms of the social interaction factor: low-interaction (sociofugal) and high-interaction (sociopetal). The researches indicate that low-interaction spaces are places where personalization is quite challenging while high-interaction spaces, which incorporate social-petal seating arrangement, are places where variations that are suitable for personalization templates exist at the level of behaviors. (Figure 3.8.) (Ünlü, 1998). In this arrangement, it was observed that the elderly talk to each other very little, and that they do not even read newspaper or magazine, stare at the ceiling or the floor during the long hours that they spend in these settings. In the new arrangement, groups of sofas will be created to form a sociopetal space. It has been observed that, following this arrangement, the elderly talked to each other more, and increased the activities that they engage in (reading newspapers or magazines, etc.). (3.2.)

It is therefore concluded that the exterior and interior placedesigning plays an important role in constructing the proximity relation that the elderly want to form with other people..

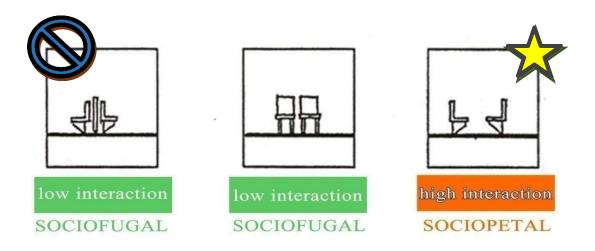


Figure 3.8. Sociopetal and Sociofugal Sitting

For the elderly that are living in institutional spaces, these places are perceived to be personal life units. With their belongings that they bring with themselves from their homes as they have a memory and a sentimental value attached to these belongings, the elderly try to create their own space of sovereignty in their new places while also boosting their feeling of attachment to the new environment that they are in. Psychologists maintain that the elderly that are institutionalized have a higher risk of suffering from depression in institutional spaces.

Therefore, such belongings are of significant importance for ensuring familiarity and spatial warmth.

However, according to the analyses done by Eshelman and Evans, though these belongings bear a meaning for them, the unrelated link between such belongings and the new setting and their indecorous view do not necessarily make the space feel like home but highlight the unfamiliarity of the relevant setting, thereby exposing a negative effect on the elderly (Eshelman and Evans, 2002).

Additionally, decoration objects, wall papers, tiling materials, lighting equipment can be used to make the space look a lot like home and feel a lot like home to create coziness in the space so the elderly feel familiar with the space, and their feeling of belongingness and territory is enhanced (Kopec, 2012). In cases where distribution balance is not fulfilled adequately and as required in these spaces, the feelings of not feeling safe and of uneasiness may trigger their security weakness, thereby causing

an increase in the other cases of safety, being alone and excluded and death fear. Moreover, accurate design arrangements are required in interior and outer spaces so the elderly can become self-sufficient and live independently to reach life satisfaction. The sociological and psychological changes indicate that what diminishes the strength of the elderly to become self-sufficient is not the aging process itself but the spaces that are not constructed in line with elders' needs, which also indicate that this topic requires more attention in studies. Multipurpose barrier-free designs will help in improving mobility, safety and quality of life of elderly

3.2.1. Safety Needs

The most important factors that affect the spaces for the elderly the most, safety needs questions the physical security of the space that the elderly is in. It also requires some supporting architectural solutions that help rid of the feelings of fear of falling, getting injured and disabled. The decrease in vision, hearing, and perceiving that is caused by the physical changes discussed in other chapters also diminishes elders' confidence in themselves and the surrounding physical environment, which causes diversions in their perception and increases rates of falling. To prevent this situation that literally becomes a vicious circle, supportive suggestions such as the ones that will help them walk in the space that they are in, transport from one place to another, and facilitate easier seating will definitely boost their life satisfaction.

3.2.2. Being Alone and Excluded

Along with family life, seeing their children and grandchildren, seeing their old friends, spending time by themselves by isolating themselves might lead to making them feel alone and excluded, according to the studies. While designing spaces for the elderly, to prevent it, the elderly should be provided with a seating plan that has been done in accordance with isolated and social area parameters in a way that will allow them to see their peers and their family members in an isolated and social area while also facilitating a setting that is not crowded, noisy and boring.

3.2.3. Security

In the spaces for the elderly, it is important that the elderly feel safe both physically and psychologically. Therefore, if the space that they are in is completely closed for any danger that might occur because of an exterior factor, except elders' family members and acquaintances, then the elderly can carry out their social activities and daily routines more comfortably and efficiently.

3.2.4. Death Fear

The ongoing psychological changes, increasing physiological diseases and cognitive changes lead the elderly to think about death and losing their identity. However, fulfilling all these factors discussed above might decrease the percentage of death fear, and even eliminate this fear and allow them to hold onto life.

3.3. Design Parameters For Social Areas In Nursing And Rehabilitation Centers Social areas are the spaces where individuals live, and spend time sitting, resting, hosting guests, watching TV, listening to music, engaging in various hobbies, and eating. (Figure 3.9.)



Figure 3.9. Buca Social Life Campus; Nursing and Rehabilitation Center, Social Area View (Taken by Zeynep Aldemir)

The parameters changing based on the psychological and sociological situations discussed in Chapter 3 expose an impact mostly on elders' social areas. The scheme created in the thesis divides the social areas in nursing and rehabilitation center into physical, psychological and sociological branches that constitute the basis of the other chapters.

This scheme was also created by taking the spatial analyses and the sub-factors under the branches into account (3.2.) Divided into three titles, the scheme places eating, sleeping, resting and healing that are affected by the physical change needs under the first title. The second title of the scheme includes the psycholohical factors such as safety, belonging to the space, privacy and getting social. Directly related to psychological factor, the social factors include chating, meeting with family and grandchildren, games, supportive activities as reading and writing, listening to music. A sub-title of the biological title, eating make the restaurant and cafeteria areas important for the nursing homes. Sleeping is, on the other side, bear significance for their own rooms while healing is influential on the healthcare divisions in the nursing ghome complexes Resting bears importance for the state of physically and mentally resting in the social areas of the nursing homes (Şafak, Erkal & Çopur, 2005; Anon, 2015).(Table 3.5.)

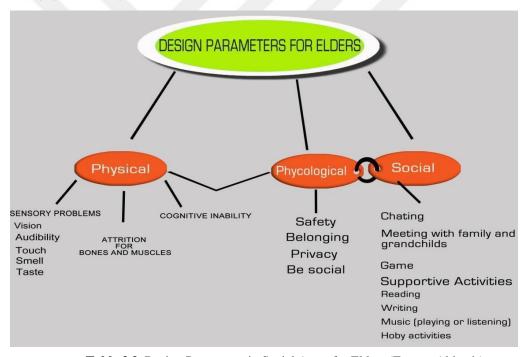


Table 3.3. Design Parameters in Social Areas for Elders (Zeynep Aldemir)

Safety, a sub-title under the psychological factors, is to be taken into account as it is important especially in selection of floor tiles for the interior spaces for the elderly. They should not be slippery and have high level of reflection, and carpets or rugs, etc. should not be places on the floor as they ma be slippery as well. Fooring materials are usually grouped as resilient hard surface like sheet vinyl, vinyl tile and rubber tile. They are also more quiet and home like. Also very helpful for mobility of

elders who use wheelchair. The optimally best flooring materials for the elderly should be in one single color as much as possible, wooden, of dark colors or of completely light colors. They should also include the least amount of patterns on them as this is the best for the elderly. (3.1.3.)Because of the vision and cognitive problems that the elderly suffers from, these kinds of flooring materials might cause them to see huge holes in front of them, causing confusion that might eventually lead to imbalance and falling accidents (health.vic.gov.au). (Figure 3.20.)



Figure 3.10. False Floor Covering (health.vic.gov.au)

The same applies to the electrical, telephone, etc. wires. These wires should be in open space so they are accessible and usable in a safe manner in a space with adequate circulation. The size of the circulation area may vary based on use of walking stick, walker or wheelchair.

For the living places where most of the time is spent, the most important factors in the organization of these places is space size, density of equipment and organization of the equipment. The space size may vary based on the variety of the actions that will take place in the living space, as well as the sorts of equipment that is needed for these actions. For the elderly using wheelchair to have a comfortable mobility, there should be left an empty space of at least 150cmx150cm sizes. If these sizes are not taken into account, this may lead to injuries and falling accidents, which triggers fear of fall (3.2.). This situation also reduces their realms of activity, limits their independency, and increases social isolation, which eventually leads to depression. Multipurpose barrier-free designs will help in improving safety, mobility and quality of life of elderly. (Figure 3.11., 3.12.,3.13., 3.14.)

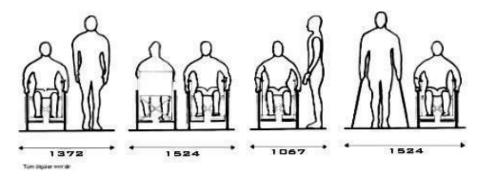


Figure 3.11. Minimum width of Wheelchair for Elders in Social Areas (Ifgroup.Org)

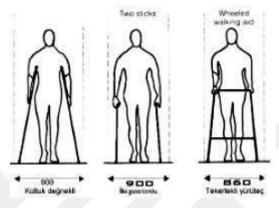


Figure 3.12. Minimum width of Crutch for Elders in Social Areas (Ifgroup.Org)

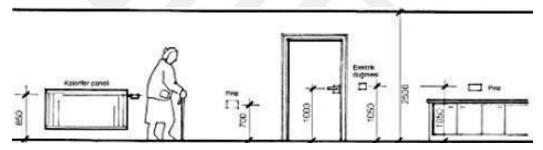


Figure 3.13. Minimum width of Crutch for Elders in Social Areas-2 (Ifgroup.Org)

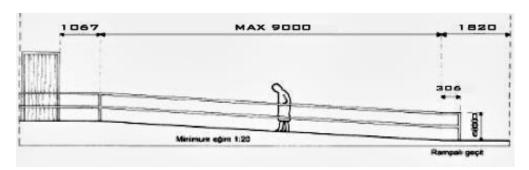


Figure 3.14. Some Revised Measures for Elders in Interior Design (Ifgroup.Org)

The social areas or the corridors connected with these social spaces in nursing homes should not be long to prevent individuals from getting tired; however, they should also be of the adequate width to allow individuals to move independently or to be able to use their suportive tools. If the planning makes it necessary to plan corridors

of high length; to make use of these corridors easier, then alcoves might be resorted at regular intervals on the wall or small seating spots can be incorporated into the plan. Figure 3.15. (3.1.2.)



Figure 3.15. Nursing And Rehabilitation Center, Resting Corners Schorndorf (Ifgroup.Org)

Another sub-title, belongingness means the elderly to feel that they belong to the space that they are in. Belonging and being social affect each other. The case of home-like that was supported in Europe in the 1960s was productive, and all of the nursing homes that were designed following this period were planned accordingly. There are some architectural elements that might give the feeling of belonging to the elderly, and help them get social more freely. First of all, spatial preferences should be made sensitively and accurately so as to fulfill the requirements of the belonging and being social factors. (3.1.2.). Moreover, to facilitate social support, the elderly can be directed to cafeterias where they can engage in activities (chess, backgammon, ball, bocce tournaments, etc.)

As already discussed under the parameters according to psychological and sociological changes, seating layouts in social areas of the nursing homes is critically important. The researches prove that the seating spaces where they will spend time alone and with their friends should be designed separately since they might need a space for spending time alone while also stretching out their legs.

The researches clearly indicate that, as already discussed in Chapter 3.2, the elderly prefer sitting next to each other but the most effective form of sitting layouts are face-to-face sociopetal layouts. Therefore, the seating layout should be arranged accordingly in social spaces so the elderly get social more actively, thereby

facilitating an environment for the supportive activities listed under the social branch that include chatting, meeting with families and grandchildren, and playing games.

It is a rightful approach of designing to incorporate social areas on each and every floor to facilitate an environment of communication for individuals. Additionally, these social areas should be placed at spots where exterior mobility can be watched. This allows the individuals to control their own areas of sovereignty. Placing these places close to the exterior environment, scenery, main entrance, and vibrant spots like main circulation areas will increase frequency of use of these spaces, thereby making them spaces with high interaction. The clearances, galleries and gaps left in the middle of the building and in different codes also facilitate an environment where the elderly have greater command over the space that they are in by integrating with the general space.

Placing little objects onto the coffee tables, center tables, side tables or center-side tables is one of the important spatial arrangement tools that might help the elderly to detect the spot where they want to take a seat easily without challenging their cognitive ability.(3.1.3.). Picking contrasting colors in interior design of the side elements such as furnitures, sitting units and coffee tables, side tables, etc. helps the elderly differentiate the coffee table and the sofa from each other, thereby reducing the risk of hitting and falling.(3.2). Researches also prove that interior furnitures such coffee table should be preferred to be made of wood so the elderly feel belongingness for the space that they are in. While deciding the furnitures, on the other hand, it is of high importance to decide on furnitures with round corners, not sharp or square corners, and if furnitures with sharp corners are preferred, then protective or softening design elements should be incorporated into their design. Furnitures should be decided based on the difficulties that the elderly experience while sitting and standing up, and designs suitable for the elderly should be preferred. Today, chairs and special sofas are bein designed with the participation of scientists and designers.(Figure 3.16.)

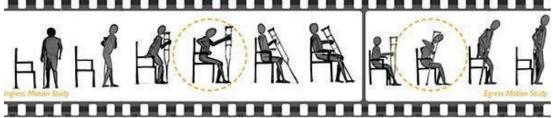


Figure 3.16. Motion Study of Elders (www.behance.net)

The ergonomic chair for the elderly that has been design and is produced by Group Project can be given as an example to such designs. First of all, technical posture of the elderly, their forms of action and psychology were analyzed; then based on this analysis, as well as on the new parameter arising from the changing biological structure of the elderly, this chair has been designed. This chair allows the elderly to take a seat without crouching and becoming hunchbacked and to stand up without falling from the chair by means of directing the burden that they normally impose on their knees backward. Figure 3.17.

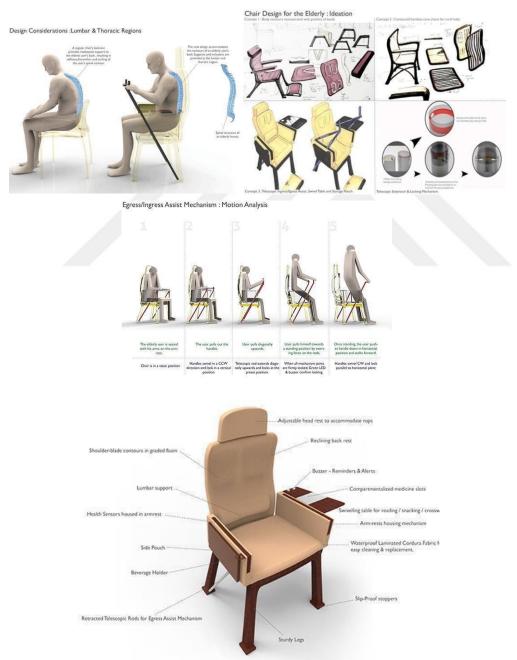


Figure 3.17. Ergonomic Chair Sample for Elders(Sohini, Baisampayan Grouba (www.behance.net)

Another interior design topic for social areas is to hang the paintings, handcraft items or some visuals and pictures that they bring from their previous houses on the walls of the social area corridors or of spacious areas in the nursing homes so they can see these objects, thereby boosting the feeling of belonging and diminishing the feeling of loneliness in the elderly. (Figure 3.18.)



Figure 3.18.Picture Presentations In Social Areas Of Nursing And Rehabilitation Centers(Ifgroup.Org)

4. NURSING AND REHABILITATION CENTERS

As these places are known as the spaces where the elderly with no family or that have gotten physically weaker are living and nursed. However, they have turned into spaces that are transforming in terms of architectural form so they facilitate settings where the elderly can get social, hold on to life and have a higher life satisfaction. With increasing number of good examples in line with the increasing old population, the nursing homes have now turned into a space of search instead of a last resort.

4.4.1. History and Samples Of Nursing And Rehabilitation Centers In The World

According to the history of the institutions for the elderly, the oldest structure in the world is the "poor-house" that was constructed in 939 A.D. in England. These kinds of structures were financed and supported by churches (Beyer and Nierstranz, 1967; Valins, 1988; Weal and Weal, 1988). (Figure 3.9.)

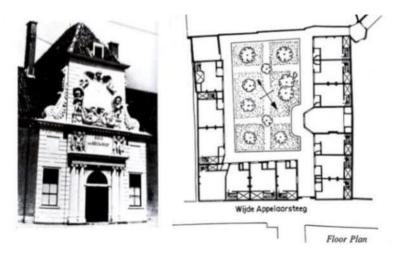


Figure 4.1. Hofje Entry View and Layout Plan (Beyer & Nierstrasz, 1967)

The studies conducted by Townsend in 1962 and the "Seebohm Report" that he published in 1968 are the most important studies that seek solutions for the elderly. The report states that structures can be constructed by means of understanding different characteristics and needs of the elderly so more realistic problems can be determined and solutions for these problems can be developed.

The final reports of the "Housing for the Elderly" scientific meeting organized by the United Nations in the year 1965 presents the process between the 1960s and today. It is known that, in the years that this report was published, many rules concerning housing for the elderly that include technical standards, room sizes, materials to be used, lighting, ventilation and acoustics, as well as kitchen and bathroom arrangements has already been determined years ago. These rules also included the ones that will help them sustain an independent and quality lifestyle. Starting from particularly the 1970s, psychological needs of the elderly were also taken into account along with their physical needs. The buildings constructed during this period is observed to incorporate bathroom and toilet in their single rooms of 13-18 square meters. Privacy was considered of utmost importance in plan layouts, which also attached great importance to social areas where the elderly could take part in activities and group activities that were supportive of the social life. In France in 1987, it was highly important to set the maximum capacity of each housing facility at 80 persons, to set the minimum size of each single room at 20 square meters, to incorporate bathroom and toilet in each room, and to prepare interior and exterior plan layouts that will support them in their efforts to have a social life. In the 20th century, a theory was developed to compare the nursing homes to homes, and it was

intended to add a *home-like*(ibid.) characteristic to the design solutions both physically and mentally. This idea has started to be adopted while designing housing for the elderly. However, one person who disagrees with this approach i.e. Lundgen (2000) focuses on the ideology of aesthetic and home-like, asserting that it is not actually based on elders' life experiences and that the old and cliche appearance is preserved only to facilitate caring of the elderly.

However, it is clear from the practices that are in place today worldwide that the social services offered particularly for the elderly demonstrate a variety of services. Among the main social service practices offered for the elderly worldwide are listed as follows: Nursing Homes, Dormitory for the Weak, Protected Housings, Day Care Centers, Leisure Time Programs for the Elderly, Resting Camps for the Elderly, Continuing Caring and Rehabilitation Centers, Home Care Programs, Housing for the Elderly, Neighborhoods for the Elderly, Towns for the Elderly, Entertainment Programs for the Elderly, Solidarity Center for the Elderly, Consulting Centers for the Elderly, Coffee Houses for the Elderly, Protected Workplaces, Retirement Preparation Programs.

A different examples from around the world, the nursing facility for the elderly in New Jersey has been designed as a complex unity in the form of duble square layouts tower. On the bottom floors are 10 rooms for the physically dependent and semi-dependent elders, and assisted life unit of 100 single-beds. Constructed in a vertical planning form, this building incorporates social interaction spots and spots to enjoy scenery on each floor, and a dining hall, a library and a big living area on the top floor that has a view. It is seen in this example that the number of common spaces that will boost socialization is kept the highest possible number, and that the the visual communication between interior/exterior environments is reinforced. (Figure 4.2.)

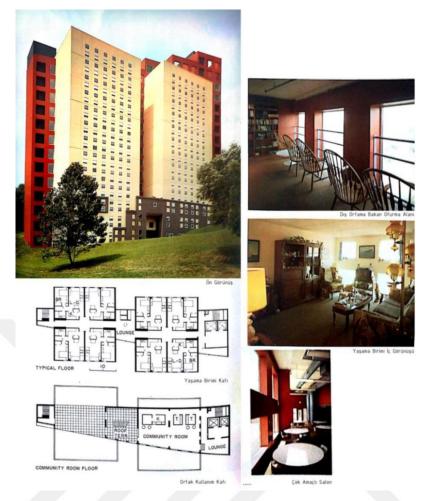


Figure 4.2. Nursing and Rehabilitation Center in New Jerse (Architectural Record, November 1988)

DESIGN PARAMETERS FOR ELDERS	EVALUATION RESULTS	
BIOLOGICAL		
Sensory Problems		
Attrition for Bones		
Cognitive Inability		
PSYCHOLOGICAL		
Safety	V	
Belonging	V	incorporates social interaction spots and spots
Privacy	V	to enjoy scenery on each floor, and a dining hall, a library and a big living area on the top floor that has a view.
Be social	V	noor that has a view.
SOCIAL		
Chating	1	common spaces that will boost socialization
Meeting with family and grandchilds	~	is kept the highest possible number, and that the the visual communication between interior/exterior environments is reinforced
Game		
Supportive Activities Reading, writing, listening music, hobies		

Table4.1. Nursing and Rehabilitation Center in New Jersey Design Parameters for Elders- Evaluation Results

Another example is Mabuhay Court which was designed by David Baker and his team and constructed in 2002, the Mabuhay Court is intended to serve for 112 persons in California. Living spaces, social center, yard and park are all integral parts of a whole, which facilitate an environment for the elderly to establish social relations with each other and the society.

In harmony with the hight of the surrounding buildings, the building is a 3-story one that incorporates 19 studio room, 16 double rooms, and 61 single rooms. Each room has its own balcony and a loggia connected to veranda. What is more important is that it has been designed in a manner that will allow the elderly with disabilities can adapt themselves too. This construction reflects a social building and social design approach that allows the elderly to sustain their personal independence in an urban area close to their neighborhood without being isolated.

It is also noticed that there have been sub-expansions in the architectural design approach that is based on special conditions of the elderly.(Figure 3.11.)



Figure 4.3. Mabuhay Court Social Elder Housing

DESIGN PARAMETERS FOR ELDERS	EVALUATION RESULTS	
BIOLOGICAL		
Sensory Problems		
Attrition for Bones		
Cognitive Inability		
PSYCHOLOGICAL		
Safety	1	that it has been designed in a manner that will
Belonging	V	allow the elderly with disabilities can adapt themselves too. This construction reflects a social building and social design approach that
Privacy	V	allows the elderly to sustain their personal independence in an urban area close to their neighborhood without being isolated.
Be social	V	
SOCIAL		
Chating	V	Living spaces, social center, yard and park are all integral parts of a whole, which facilitate
Meeting with family and grandchilds	/	an environment for the elderly to establish social relations with each other and the society. Each room has its own balcony and a loggia connected to veranda
Game		
Supportive Activities Reading, writing, listening music, hobies		

Table4.2. Mabuhay Court Social Elder Housing Design Parameters for Elders- Evaluation Results

Designed by Architect Dawson in Coronada, USA in 20018, the 13.132-square-meter incorporates 129 private villas, 53 units for the dependent elderly, and 22 units for the semi-dependent elderly. The structure group is in the form of a holiday town that is made up of single, double and three-person and 3-story buildings.

Designed with a high budget as a nursing home for the elderly that reflects a homelike and holiday town atmosphere, the construction is an interesting example in that it demonstrate the changing economical and social design aspects for nursing of the elderly in the USA. The results from the researches conducted by Ulrich and Parsons also confirm the case of being in touch with nature, which was practiced in the Valencia Terrace Campus. (Figure 4.4.)



Figure 4.4. Valencia Terrace Elder Campus (Uffelen, 2010)

According to these researches, it diminishes stress and allows individuals to relax psychologically to see nature and be in touch with nature in such spaces for the elderly and healthcare facilities.

As the perception of nature is sensual, it also relates to sounds, textures and smells, as well as the visual content. On the other side, heart rate measurements are balanced with blood pressure, which diminishes stress in individuals (Ulrich and Parsons, 1990).

DESIGN PARAMETERS FOR ELDERS	EVALUATION RESULTS	
BIOLOGICAL		
Sensory Problems		
Attrition for Bones		
Cognitive Inability		
PSYCHOLOGICAL		
Safety	V	
Belonging	/	Designed as a nursing home for the elderly that
Privacy	V	reflects a home-like and holiday town tmosphere.
Be social	1	
SOCIAL		
Chating		
Meeting with family and grandchilds		
Game		
Supportive Activities Reading, writing, listening music, hobies		

Table4.3. Valencia Terrace Elder Campus Design Parameters for Elders- Evaluation Results

4.4.1. History and Samples of Nursing and Rehabilitation Centers in Turkey

According to the researches conducted in 2015, the rate of the population aged over 65 will reach 10.2 percent, 20.8 percent in 2050, and 27.7 percent in 2075. This will increase the number of the elders that are in need of nursing. It is also projected that in-family care will be replaced by the need for professional healthcare-healthcare professionals support because of the workin life, traffic, etc. This increase will also require to go for variations in the social services offered for the elderly. There are many institutions that have undertaken responsibility in executing welfare services for the elderly in our country. The gradually increasing scientific and technological developments bring about different aspects of perception of individuals in terms of social services. Protecting and nursing the needy elderly that are in need of support used to be the prioritized intention in previous practices; however, in current practices, it is intended to improve life quality, ensure a healthy and successful aging and higher engagement in social life, and to enhance welfare. To show some of the special standards applying to nursing homes in Turkey:(Table4.4)

LOCATION AND LANDSCAPE OF NURSING HOUSE	PROTECTION AND HEATING OF NURSING HOUSE	NECESSARY PLACES IN NURSING HOUSE
Lay Out of Building	Fire Extinction Tools	* Control Room * Social Service Area * Physiotherapy Area
Relation with traffic of building	Plan of Civil Defense	* Infirmary * Bed Rooms * Social Areas
Transportation between the floors of building	Central Heating System	* Dining Hall * Kitchen and Bathrooms
Relation with the other buildings	Alarm Storage	* Laundry * Help Desk * Elevator * The other special Units

Table4.4. Nursing And Rehabilitation Centers Regulations, Part 4

According to the results from the family structure research, the major reason why the elderly want to stay at nursing homes when they are no longer capable of taking care of themselves is that they do not want to be a burden on their children's shoulders by 48.9% in the year 2016. With a percentage of 20.2%, the second most common reason to this situation is that the facilities offered at nursing homes are more comfortable, which is followed by their children's not wanting to live with them with a percentage of 11.2%. The changing and improving life conditions that have been observed in spaces in recent years lead to gradually increasing number of people that perceives nursing homes as a social need as people are more informed about them. This perception is expressed both by the staff members working at nursing homes and their manager, as well as by some elders and their acquaintances.

Though it is thought that the life in nursing homes is something that is not desired or that might cause psychological problems in the elderly, it is also another fact that, with the improvements in the conditions, they are no long a risk factor for their mental health. In nursing homes where living conditions are better, social service members also organize activities to prevent social isolation. The elderly that stay at such institutions for a long time may develop negative feelings because of the institutional life style. However, it is quite important at this stage that the institution adopt an interdisciplinary team approach and offer services by adopting this approach.

According to researches, the number of private nursing homes is higher than the others based on the data concerning their numbers, capacity and occupancy rate, and they can be preferred more by the elderly. The second most preferred nursing homes are the ones affliated to the Directorate General. (Table 3.4.)

NURSING HOME TYPES	NUMBER	CAPACITY	OCCUPANCY
NURSING HOUSE OF DISABLED AND ELDERLY SERVICES GENERAL DIRECTORATE	124	12.647	11.688
HOME FOR SENIORS	28	114	100
NURSING HOMES OF MINISTRIES	2	566	566
NURSING HOMES OF MUNICIPALITY	21	2.055	1.439
NURSING HOMES OF ASSOCIATIONS AND FOUNDATIONS	27	2.308	1.616
NURSING HOMES FOR MINORITIES	7	920	644
EXCLUSIVE NURSING HOME	151	7.612	5.328
TOTAL	340	26.222	21.381

Table 4.5. Nursing and Rehabilitation Centers Number, Capacity and Occupancy in Turkey

Chronologically speaking, one of the nursing homes in Turkey, Darülaceze stand as an important example in terms of its design model. Planned and constructed as a campus, it incorporates separate complexes for the abandoned, those without a family or the needy. It was intended to facilitate an environment for the elderly to live in the complex that was suitable for them based on their state of wellbeing.

Darülaceze Campus invades a space of 3 hectares and 419 square meters, incorporating principle's office building, children home, kindergarten for children of staff members, 7 complexes for the needy, polyclinic building, bakery, kitchen, cold storage, laundry room and a kitchen.

An exemplary nursing home, Darülaceze has a mosque, a church and a synagogue in its garden. A historical design complex, Darülaceze has been offering services since 1895.(https://www.darulaceze.gov.tr/)(Figure 3.13., 3.14.)





Figure 4.5. Darülaceze Facadeand Yard View, 1895 ((https://www.darulaceze.gov.tr/)



Figure4.6.Darülaceze Facadeand Yard view, Now (https://www.darulaceze.gov.tr/)

DESIGN PARAMETERS FOR ELDERS	EVALUATION RESULTS	
BIOLOGICAL		
Sensory Problems	V	it is a place where the elderly are physically weak. Suitable for them based on their different stat
Attrition for Bones	V	of wellbeing. Has polyclinic building
Cognitive Inability		
PSYCHOLOGICAL		
Safety	V	Due to plan layout, feel safety about danger which can come from outside.
Belonging	~	Religious issue is an important factor for elders. Has a mosque, a church and a synagogue in its garden. They feel themselves belonging and like a home
Privacy	V	Due to its intrevort plan layout, it also provide to feel privacy also.
Be social	V	
SOCIAL		
Chating	V	Mostly, elders which are no family or relatives, they are friends with each other and chating.
Meeting with family and grandchilds		
Game		
Supportive Activities Reading, writing, listening music, hobies	~	Under the observation of doctors and experts, activities are oranized.

Table 4.6Darülaceze Nursing Home Design Parameters for Elders- Evaluation Results

Following the proclamation of the republic, a new law was went into effect in 1930, thereby stipulating for the first time that Municipalities are obliged to have nursing homes constructed and to manage them to protect the needy and especially the elderly. Homes for the needy, old people's homes and nursing homes were opened in different parts of the country, following this law. With a new law going into effect in 1963, Ministry of Health Directorate General of Social Services was founded, and the elderly was offered services in a planned, systematized and organized manner.

The first nursing home was opened in Konya in 1966, which is followed by the one opened in Eskişehir.(http://emlakansiklopedisi.com/wiki/huzurevi) The institution is one of the most basic and prevalent models of the nursing homes. In other words, these nursing homes were intended to take care of and protect the elderly that need protection and care in a home-like setting. The elderly that were taken care of and protected in these nursing homes did not have any need for medical treatment or care, any disability or disease in their body parts that would prevent them from becoming self-sufficient.

As for today, Narlidere Huzurevi Nursing Home and Rehabilitation Center has been an exemplary nursing home of Turkey since its inception in 2001. There are 254 single rooms and 226 double rooms in its building for the vigorous elders, which has a capacity of 678 persons. Its Physiotherapy and Rehabilitation Unit has a pool, as well as a Geriatric Care Center with a capacity of 269 persons. In its Old Women's Living Home that has a capacity of 4 persons, there are 4 single rooms in addition to its general capacity of 951. There has also opened a Day Care Center with a capacity of 20 persons. There are 679 individuals living in its building for the vigorous elders, 4 in the living homes for the elderly, 233 in the Geriatric Care Center, which makes the total number of the elders staying at this institutions 916.Moreover, 5 persons are benefitting from the services offered at the Day Care Center. (Figure 4.7.)



Figure4.7. Narlidere Nursing and Rehabilitation Center View (http://www.narlidere.gov.tr/narlidere-huzurevi)





Figure 4.8. Narlidere Nursing and Rehabilitation Center-Social Area View 1. (Taken by Zeynep Aldemir)

The layout plan of the center as seen in the first figure, expands through the parcels where it is located. Right in the middle of the center is information desk, social areas and restaurants. There is a ball hall, a restaurant, a cafeteria in the interior space. The elderly can meet up with their guests in these places. There are also social areas with TVs in them in the middle area of each room floor.



Figure4.9. Layout Plan (Taken by Zeynep Aldemir)



Figure4.10.Concert and Ball Hall (Taken by Zeynep Aldemir)

DESIGN PARAMETERS FOR ELDERS	EVALUATION RESULTS		
BIOLOGICAL			
Sensory Problems	V	Its Physiotherapy and Rehabilitation Unit has poolSuitable for them based on their different	
Attrition for Bones	V	state of wellbeing.	
Cognitive Inability	V	Geriatric Care Center with a capacity of 269 elders and also include alzheimer elders.	
PSYCHOLOGICAL			
Safety	V	Security and sheltering are at the highest level.	
Belonging	V	Has large plan layout which is situated on a large scale campus. So elders can wlak aroun as they wish. Besides, blocks where rooms are located are introvert. So this fact allows privacy.	
Privacy	V		
Be social	V	Having 3 factors, provide socializing for elders	
SOCIAL			
Chating	V	Ball hall, a restaurant, a cafeteria in the interior place. The elderly can meet up with their guests in these places.	
Meeting with family and grandchilds	V	There are also social areas with TVs in them in the middle area of each room floor.	
Game	V	Swimming is prefered because of a large pool.	
Supportive Activities Reading, writing, listening music, hobies	V	Social Areas are located in the center of the main building. There are exhibitions and activity in there. Social areas with TVs in them in the middle area of each room floor. Have special different rooms for each activity like painting, handcrafts, old staff museum etc.	

Table 4.7 Narlidere Nursing and Rehabilitation Center Design Parameters for Elders- Evaltuation Results

Assoc. Prof. Sevnaz Şahin from the Department of Geriatrics at Ege University states that 'the first model home in Turkey that was designed to prevent falling and accidents at home' -prepared by Nazilli Municipality of the Turkish Aydın province and Akdeniz University (AU); as well as the Narlıdere District Houses are the most successful works, following the Social Life Campuses in Narlıdere and Buca, İzmir, Turkey. The home model that prevents falling has a space of 144 square meters, and has three plus one rooms, a parents' bathroom, WC and a kitchen. All the technical equipment installed on this model is intended to prevent and rid of the falling accidents that the elderly may potentially face at home. The elderly can also get an idea from this project to practice the same systems at their own places. Intended to offer housing for the elderly, Narlıdere Nursingand Rehabilitation Center have been prepared based on the exemplary practices abroad by means of renting flats on the ground floors of the multiple-story buildings picked by the municipality and then designing their interior spaces in a way that will fulfill the elders' needs.

However, since these house are not welcome by the society that sees these houses contradicting their common lifestyle, they are not preferred as sustainable housing options.

CHAPTER 5

CASE STUDY: BUCA SOCIAL LIFE CENTER-NURSING& REHABILITATION CENTER

This chapter deals with the case study of the thesis, which is Buca Social Life Campus- Nursing& Rehabilitation Center, in terms of architectural planning, service program and operational organization. The methodology and analysis are discussed within the context of the criteria determined based on the elders' needs. To get details of the pre- and post- construction processes of Buca Social Life Campus, which started operating in 2017, an interview was held with Assoc. Prof. Sevnaz Şahin from the Department of Geriatrics at Ege University. The interview concludes that most of the nursing homes in Turkey are not originally nursing home structures but structures that were transformed from school, children raising or dormitory buildings. However, Buca Social Life Campus is stated to have been constructed originally as a nursing and rehabilitation center. Before placing the nursing home to the campus, it was stated that a symposium was held. Many physicians, scholars, officers from the municipality, mayor and elders attended the symposium, according to the information obtained during the interview. Attended also by elders, this symposium included long interviews that were held with them to learn about their requests or about the factors that might make their lives easier. All these interviews with the elderly were recorded to be used while shaping the architecture of the Buca Social Life Campus.

The statement that was articulated by elders inspired them as it stated "You can offer us even the best facility made of gold. However that would still be a dungeon for us without any support for our social life."

As part of the interview held with Assoc. Prof. Şahin, it is stated that the nursing homes are of not a heterogeneous structure but of a homogeneous one. In hands-on researches conducted, it was concluded that as long as all physiological problems are

not severe, they do not hinder social life, and that the most important and the main cause of all the problems is social life factor, which exposes a high level of influence on life satisfaction. Healthy and active aging is also about expressing one's self in the society accurately in addition to being physically and mentally okay. Ensuring a process of aging as stated above is possible only by means of getting more social. It is thought that the most important parts of the nursing homes are social life spaces, and that the consultant at the nursing homes encourage them to engage in social areas. It is understood that the changes in the color and texture of the furnitures and the equipment installed in Social Life areas can be prevalent but too much change of space causes recession in elders' cognitive functions.

The new nursing and and rehabilitation center that makes up the most important part of the Buca Social Life Campus that was opened in 2017 has a space of 26 thousand 540 square meters. The 8-story nursing home building that has a capacity of 425 persons, the building has a division of geriatrics and Alzheimer's- dementia rooms that have a capacity of 83 persons; as well as a division of 342 persons for the elderly that are healthy and vigorous. There are 90 single rooms, 78 double rooms, and 32 three-persons rooms. There are also a ball hall, a social areas for each floor, cafeterias, lunch&dining halls, library, hairdresser, handcraft atelier, tailor, TV and game halls available. Buca Social Life Campus should also foregrounded with its innovative perspective, which makes it a complex that has food bank, sports hall and swimming pool, children's and youth center, center for the disabled, and a rehabilitation center in addition to the nursing home on the campus. This situation allows the elderly to communicate not only with their peers but also with the young and spend time with them, along with the activities that they can engage in by themselves or only with their peers. (www.buca.bel.tr)

Moreover, the young and dynamic staff members working at the nursing home are more tolerant, stronger ans reliable in terms of the services that they provide while taking care of the elderly.

There are 4 psychologists, 2 physicians, 19 nurses, and nearly 100 staff members that are in charge of the maintenance, cleaning and security of the Buca Social Life Campus facility. Made up of 3 main buildings and some other extra activity buildings, the facility has buildings that have separate entrance-exit and circulation characteristics.(Figure 5.1.,5.2.)



Figure 5.1.Buca Social Life Campus, Nursing and Rehabilitation Center View 1 (http://www.buca.bel.tr/Projelerimiz/67/buca-sosyal-yasam-kampusu.html)





Figure5.2.Buca Social Life Campus, Nursing and rehabilitation CenterView 2 (http://www.buca.bel.tr/Projelerimiz/67/buca-sosyal-yasam-kampusu.html)

5.1. Methodology

The thesis analyzes only the nursing and rehabilitation center of the facility, and includes the necessary technical documentation in the form of visuals. In the spatial analysis of the facility, three separate methods that include observation, pictures & documentation and interviews have been made use of.

The observations were used to analyze the ways that the elderly spend their time in the social areas of the facility, the differences in their behaviors and their social activities.

The interviews were used to analyze the ways that the elderly spend their time in the social areas of the nursing and rehabilitation center, the differences in their behaviors and their social activities while also analyzing the levels of their satisfaction with these places within the context of the biological, psychological and sociological parameters that have been set as part of the thesis. This has ensured a systematized

analysis in perceiving elders' desires and needs. The interviews were created based on the changes and needs of the elderly caused by the 3 factors observed in social areas, and questions were prepared accordingly. These three factors are physical, psychological and sociological changes and the needs arising because of these changes. Made up of 37 questions, the interview is divided into 4 parts within itself. These parts are the preliminary interview questions (questions concerning the demographic information of individuals), questions concerning needs, questions concerning the use of the social area within the nursing and rehabilitation center, and questions concerning the use of the furnitures in these areas.

Preliminary Interview Questions: 8 questions concerning the demographics of the elder: age, sex, education, hometown, profession and physical data.(Table 5.1.)

The interview study was attended by 30 vigorous elders aged over 60, and the physicians and assistants working at the nursing home were also consulted during these interviews.

Category Of Questions					
Biological	Pyschological	Sociological			
10 questions	15 questions	12 questions			

Table5.1.Category And Number of Questions

5.2.Analysis

This part deals with the analyses retrieved from the interviews held with the elderly under three titles, which are the three main factors that were discussed previously: biology, psychology and sociology. Under the first title, which is biological, are listed sensory problems, attrition for bones and muscles and cognitive inability. As the other two main titles are associated with each other, the psychological and social parameters are analyzed conjointly.(Table 5.2.)

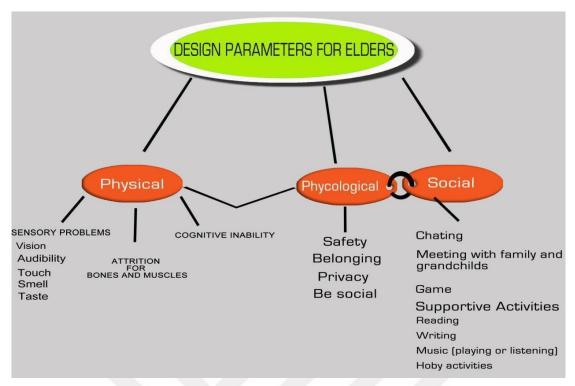


 Table 5.2. Design Parameters in Social Areas for Elders(Zeynep Aldemir)

The social areas that are analyzed as part of the study are given different colors based on the space where the elderly get social and the intensity of such activities. The space of the Level 1 pertains to the interior space, and there are seating arrangements in this space. Those elders that prefer getting fresh air while getting social and not sitting inside go for the terrace of Level 2 that is colored yellow to get social. Each social space of each floor has a terrace as well. The social ares of Level 3 are the long walking trails that are located on the ground floor of the building, the green area where little sitting units are installed outside, as well as a cafeteria inside. The grey color symbolizes, on the other side, the elders' circulation rate of the interior space. The parts that are studied as part of this thesis are the spaces of Level 1, Level 2 and the grey area.

The orange area symbolizes furniture arrangement and organization. Moreover, the green color on the stair axis are the spot where the elderly can plant the plants that they wish. The social area has 5 entrances and exits including the doors 3 of which opening to the corridor and 2 of which opening to the terrace.(Table 5.3.)

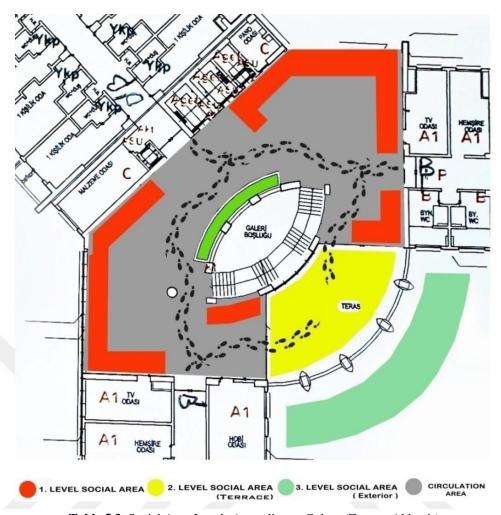


 Table 5.3. Social Area Levels According to Colors (Zeynep Aldemir)

5.2.1. Analysis of Elder Satisfaction In Terms Of Biological Aspects

There are 4 main floors in the building, and each of the floors has the same layout. The layout extends towards 3 different directions from one single hall. This type of design of the building makes sure that the rooms for the elderly benefit from the daylight at equal levels no matter what side of the building that their rooms are. Incorporating a spacious hall and a welcoming unit on the ground floor, the building has a stairwell that also has a glass ceiling. This glass ceiling of the stairwell illuminates the place through the day in the interior space, thereby ensuring the solid and empty balance in design.

Furthermore, using only insulated glass for the exterior wall of the space in the areas pertaining to the social areas located on each floor shows the spaces bigger and spacious as the daylight can have a great impact on the space.(Table 5.4.) (3.1.1.) The social areas that are located on each floor also connect with the terraces. This situation makes the exterior environment factor way more important for the elderly,

thereby making such activities as walking, exercising, etc. a necessity. (3.1.1.)(3.1.2.)

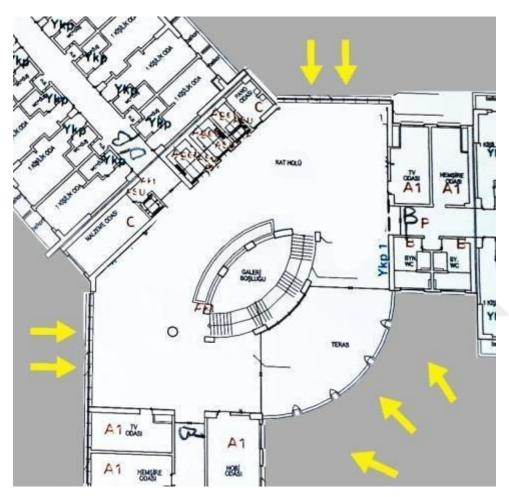


Table 5.4. Building Relation with Daylight (Zeynep Aldemir)

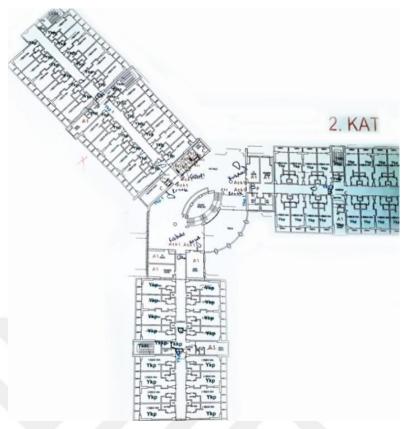


Figure 5.3. Buca Social Life Campus, Nursing and Rehabilitation Center , 2.Floor Plan (Zeynep Aldemir)

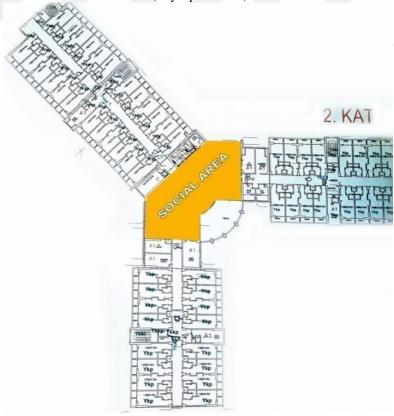


Figure 5.4. Buca Social Life Campus, Nursing and Rehabilitation Center, Social Area Sybolization (Zeynep Aldemir)

The social areas are connected with 3 main corridors, and each of these corridors has been named. Naming the corridors is a measure taken to prevent cognitive perception problems that might occur in the elderly in time, and allows the elderly to choose the corridor where their rooms are located more easily thanks to the names given to the corridors. This practice is directly related to a factor by Dr. Şahin that might be of help in encouraging the elderly to get social in a space. (Figure 5.5.) (3.1.3.)

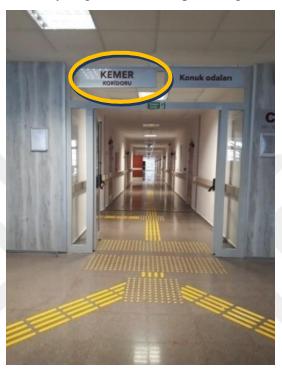


Figure 5.5. Buca Social Life Kampus, Nursing and Rehabilitation Center Corridor View (Taken by Zeynep Aldemir)

The interviews held as part of the thesis concluded that the elderly suffer from particularly vision problems under the sensory problems, as well as losses of hearing and sensing problems under this title. It was also concluded that they suffer from attrition for bones. They were observed to spend 5 to 6 hours on average in the social life space. A very little percent of the elderly needs walking stick while all of them expressed that they suffer from losses in vision and hearing. (3.1.1.)

Half of the interviewed elders that suffer from problems in vision and walking stated that they see the floor better since most of the floor tiles are non-slippery and matte. It is also observed that the texture of the floor in the social areas has a level of reflection that does not affect elders' daily social actions and activities despite the effect of the artificial light during the day. Way-markers for the visually disabled on the floor tiling, which was made compulsory by the new regulations, cause worries in all of the interviewed elders, who stated that they are worried that they might trip and

fall. Since the social life spaces that have high width circulation converge the middle axis, these spaces do not meet the circulation that the elderly wants, according to the interviewed elders. The elderly also expressed that they can lose their balance because of the roughness created by these markers, triggering their worries to get injured. To ensure a flawless circulation for the elderly, the way-markers for the visually disabled should have a lower hight, and placed away from the spaces where the elderly spend most of their times to be in mobility and in communication with each other. (Figure 5.6.)(3.1.2.)

Preferred for today's hospitals and healthcare centers, such materials as epoxy, mermoleum and lineleum are also concluded to be useful in these facilities since they are easy to take care of and ensure safety and freedom in terms of biological aspects, according to the results from the analyses.



Figure5.6. Visually Handicapped Way in Social Areas (Taken by Zeynep Aldemir)

The stair that is located right in the middle of the current building and the well that it creates connect the social areas with the exterior scenery, thereby allowing the social spaces to benefit from the daylight. (Figure 5.8.)



Figure5.7.Stairs and Social Area (Taken by Zeynep Aldemir)



Figure5.8.Stairs and Stairwell (Taken by Zeynep Aldemir)

As confirmed by psychologists and in researches, the daylight is of benefit for the biological and psychological parameters in the elderly to a great extend. There is a high potential in the social areas especially for the elderly to benefit from the daylight. For all of the 30 elders interviewed to learn their views about the daylight in the social spaces of the nursing home, the distribution of the daylight in the social life spaces of the current building designed is highly powerful and positive. For the elders that have mostly vision problems, the daylight is more important. (Figure 5.9.) The reason to it is that the elderly think the artificial lighting is not as successful as in ensuring a healthy vision no matter how much successful it is in adequacy and density. (3.1.1.)





Figure5.9.Buca Social Life Campus, Nursing and Rehabilitation Center Exterior Landscape
(Taken by Zeynep Aldemir)

The case of maximizing the daylight in an interior space, which was touched upon by Dr. Şahin by also giving examples from foreign countries, is seen in Buca Social Life Nursing and rehabilitation Center. Both of the two sides of the building benefit from the daylight, one partially the other one completely. This ensures that the elderly live in a space with a garden view and the daylight, thereby allowing the elderly both to physically relax and psychologically feel more alive.

In the questions directed concerning the texture of the furniture of the social areas, some findings concerning some biological aspects in sofas were revealed. It was determined that the elderly prefer fabric or even twill fabric rather than leather or artificial leather. Leather upholstery and artificial upholstery on sofas have been found to cause the elderly to glide on sofas and also cause sweating, which the elderly think is not healthy. Figure 5.12. The thesis study proves that the place solutions for the elderly should include the ones that the floor tiling should not cause reflection and should be matte and non-slippery to prevent falling; and as for the furnitures, matter, non-sweating and non-glide textile should be preferred as much as possible. (Figure 5.10.,5.11.)



Figure 5.10. Twill Cotton Fabric Sitting Group in Social Area (Taken by Zeynep Aldemir)



Figure 5.11. Twill Cotton Fabric Sitting Group in Social Area (Taken by Zeynep Aldemir)



Figure 5.12. Leather Fabric Sitting Group in Social Area (Taken by Zeynep Aldemir)

Another comment that was concluded from the interviews concerning the features of the furnitures is that the sofas are deep-seated when they sit on them, which makes it difficult for them to stand up. Especially for the elderly that have problems with their bones, this is observed to be more difficult. The seating-depth is fixed to be 70 cm by Neufert according to global standards of body and architecture but this varies in the elderly because of the physical changes.

The measurements showed that the seating-dept of the sofas located in the current social spaces are 79-80 cm. Thus, the elderly are technically rightful to request cushions for their backs. Considering that the cushion depth varies between 10-15 cm, it can be concluded also that the elderly can be comfortable mostly in a seating-depth of 65-70 cm. The interviewed elders agree that the chairs used in the second-degree social spaces i.e. in the terraces that are located on every line of the current building are more comfortable.

The studies reveal that it is important for the elderly to feel filled around by the sofa or the chair that they are sitting on. The already existing fear of falling caused by the current sensory, attrition for bones problems and cognitive losses can be diminished if designs in such form and of such characteristics are used. This can also enhance elders' self confidence.

The technical means to meet this factor is to make sure that the chair of the sofa that they are sitting on have an armrest, which also be at an adequate hight. The elderly extremely press against the armrests while sitting down and standing up.

These armrests thus prevent such negative effects as falling or being driven away from the two sides in cases of slipping or dizziness.(Figure 5.13.)



Figure 5.13. Chair with Armrest in 2.Level Social Area-Terrace (Taken by Zeynep Aldemir)

5.2.2.Analysis Of Elder Satisfaction In Terms Of Psychological and Social Aspects

The stairwell located right in the middle axis of the building and connecting with the social areas and the relation of this stairwell with the social areas reveal that these spaces are certainly used, which is why natural and artificial plantation has been preferred in these spaces. The current scenery of the building and its garden arrangement, as well as the contact with nature in the interior space are important factors. Therefore, it is observed that all these spaces are decorated various kinds of natural flowers. This practice confirms the hypothesis of Ulrich. Ulrich defines use of natural elements such as trees, plants, and water especially in hospitals and spaces for the elderly as positive distractions as they correspond to vision, smell and even to sound, and asserts that nature in interior spaces is a means of stress recovery (Ulrich and Parsons, 1990). (Figure 5.14.)



Figure 5.14. Plants and Mini Trees in Social Areas (Taken by Zeynep Aldemir)

The interview with the elderly expressed that they find this practice well to the purpose. They also added that they would be happy if this practice is preferred more. Along with the plants and water that are both defined as positive distractions by Ulrich, an element of water (a tiny fish pool or decorative pool or a vertical or horizontal water-screen that flows non-stop) can also be an additional application to connect all these elements and to make sure that they all completely are effective in the social spaces of the Buca Social Life Campus Nursing and Rehabilitation Center. Carrying the water element that is in the exterior space outside the building

(decorative pool) to the interior space can be a positive distraction, and be a complementary factor in recovering the lack of sea view caused by the current building's location in the elders' perception. Following the interviews held with the elderly as part of the thesis, this situation has been understood to have a diminishing effect on the feeling of being alone and excluded, which is discussed in 3.2.2. under Chapter 3, and a boosting effect on the feeling of belonging.

The interviews concluded that none of the interviewed elders decided to live in the nursing and rehabilitation center because they were excluded by their family but because of the fear of being alone at home, not being able to deal with houseworks and most importantly because they wanted to get social after losing their partner. More than half of the elders interviewed expressed that the sensory losses do not affect their social lives, and that deciding to live at this nursing home has contributed to them in psychological terms. Because the trips, concerts, various other events and the events organized by other institutions to visit them please them, thereby fulfilling the being social factor under the psychological needs. It has also been recorded that such event and organizations reduce the fear of death, which is known by all but not expressed clearly by any of them, in the elderly.

According to the answers given by most of the elders interviewed to the questions concerning the use of social areas in the nursing home; chatting, reading newspaper-books, listening to radio while sitting next to a friend were observed to take place in the nursing home. They expressed that they do not need such activities as playing games and watching TV in these spaces, and even that they do not want these activities and that they do prefer these activities to take place in the cafeteria downstairs.

Moreover, the elderly want to be isolated and stay alone at a specific spot of the social areas for some days. Within this expectation, it is possible to create a single or double spot to allow individuals to stay alone, read book, make phone calls in the social areas and to create a supportive space with floor lamps in addition to the ceiling lighting already available in the social areas. This can be supportive of the belonging factor in cases where the elderly need privacy, discussed under the subtitle of the second title, outside their own rooms (3.2.). Listed among th important factors that have an impact on elders' life quality by Mc Daniel and Bach, the need for personal inner space can be fulfilled (2.1.).

This visual is related to current social area. The elderly support the idea that these personal spaces(individual) should be increased in number.(Figure 5.15., 5.16.,5.17.,5.18.,5.19.)



Figure 5.15. Double & Triple Sitting Layout

Figure 5.16. Double Sitting Layout



Figure5.17. Double Sitting Layouts Seperation from Multi-Sitting Layouts (Taken by Zeynep Aldemir)

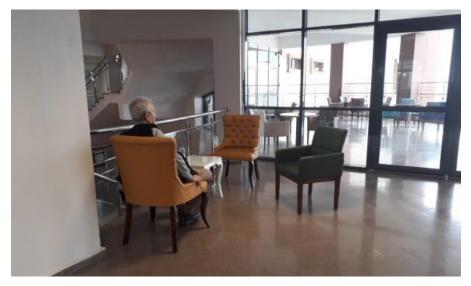


Figure 5.18. Trio Sitting Layouts (Taken by Zeynep Aldemir)



Figure 5.19. Double Sitting Layouts (Taken by Zeynep Aldemir)

The elderly that frequently read books, like knitting, get social by listening to music on radio with their friends think that they are affected in a negative way when they carry out these activities in the social spaces together with their friends or with people around them. The positive effect of this situation is that they do not feel alone and even that they feel like a tiny family towards each other, according to the interviewed elders.(3.2.2.)

The spatial and furniture evaluations made first of all for the social areas and the interviews with the elderly show different results, and the answers given were observed to be differ in each individual.

The interviews revealed that what the elderly needed the most is a variety of chairs in number in the social areas of the Buca Social Life Campus.

The detail concerning this request is as follows:

Considering the elderly live in a crowded population, the questions directed to the elderly and the analyses conducted reveal that, since it is not welcome for them to be a part of the group that involves individuals that they do not get on well with or want to talk to, or to be a part of female group if a person is a man or a part of male group if that person is a woman, it can be a stress relieving factor to incorporate tinier but more compact furniture arrangements into the social areas (3.2).

The interviewed elders state that they prefer face-to-face seating arrangement (sociopetal arrangement) because of the sensory problems that they suffer. The second preference of the individuals is that they sit next to each other at a distance where they can hear and see each other. The researches prove that sociopetal seating has high level of interaction. The seating arrangements in the nursing homes have thus been arranged mostly to be for sociopetal-interaction, thereby making sure that

the elderly get social together. (Figure 5.22., 5.23., 5.24.) (3.1.1.) (3.1.3.). In conclusion, biological changes and transforming needs also have an effect on the elders' psychological wellbeing, and thus expose an effect on their social life. (3.2)



Figure5.20. Sociofugal- low interaction (Taken by Zeynep Aldemir)

Figure5.21. Mid- interaction (Taken by Zeynep Aldemir)



Figure5.22. Sociopetal- High Interaction (Taken by Zeynep Aldemir)

Figure5.23. Sociopetal- High Interaction (Taken by Zeynep Aldemir)



Figure 5.24. Sociopetal- High Interaction (Taken by Zeynep Aldemir)

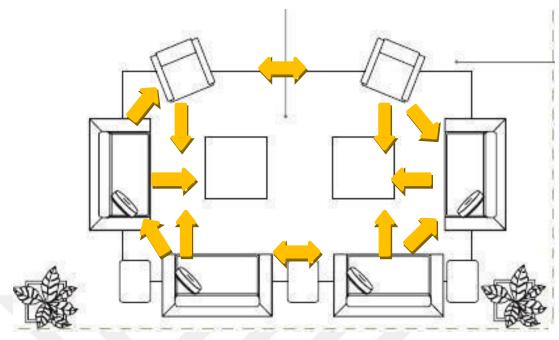


Figure 5.25. Sociopetal- High Interaction

Another topic to be discussed concerns the color and texture of the furnitures used in the social areas. According to the analyses, the elderly living at the nursing home mostly prefer furnitures of light colors and their tones, instead of the ones colored dark blue or dark brown. The sofas with upholstery of dark colors make them pessimist and prone to melancholy, express the elderly. The scientific reason to this is the vision that the elders have because of the transforming sensory. Not seeing the color exactly as it is causes worries in the elderly and damage to their self-confidence. Moreover, psychologically speaking, these colors and their tones start to make them feel bored, and even stressed. In interiors designs composed of red, orange and yellow colors - the colors that are on the energetic and cheerful part of the color scale, preferring these colors have an influential impact on the elders' perceptions since they can increase their energy, thereby accelerating their circulatory system and make them feel safe. It also encourages them to adapt to the social environment that they are in as well (3.1.1.,3.2.). It has also been proved that the light blue, light pink and purple colors reduce stress in the elderly. Figure 5.23.

The interviews concluded that all of the interviewed elders sought not aesthetic but comfort in the furnitures. Considering this piece of information, in the spatial layouts in the spaces for the elderly, the colors preferred for furnitures affected their psychology. However, what is actually important for them is the comfort level and

ergonomics of furnitures, rather than their aesthetic view. Additionally, adding additional pieces of furnitures for the elderly to stretch out their legs and to relax constitutes an important factor in cases where a sudden accident might take place or an elder needs resting. (Figure 5.26.)(3.1.1.,3.1.2.)



Figure 5.26. Variety of Energic Colors in Sofas (Taken by Zeynep Aldemir)

Moreover, in the furniture layouts where the elderly spend time, they find white coffee tables of 60x110 cm modest and relaxing. These coffee tables are perceived to be modest as they are white and as their style resonate with them, and even that they think these white coffee tables look like the ones that they had at their own homes. Giving a glass effect by applying Plexiglas on the tables, the tables allow them to place the pictures, poems, and postcards that they like so they feel less alone and excluded as their whole memories and life are right before them. As discussed in the thesis, keeping an object that they love and own, or a memory close to themselves make sure that the elderly have a feeling of belonging and privacy, according to scientific researches.(3.2.2.,3.2.4.)

According to the results from the researches, because of the problems related to vision in the elderly that cause them to experience difficulties in perceiving colors and objects, the white color or light colors can be better on the furnitures for the elderly. (Figure 5.27.)(2.1.2.,3.2.)



Figure 5.27. Coffe Tables in Social Area (Taken by Zeynep Aldemir)



Figure 5.28. General Sitting View of Elders in Buca Nursing and Rehabilitation Center (Taken by Zeynep Aldemir)

There two other factors that draw attention in the social areas. The first one is the pictures hung on the branches of the artificial tree by the elders living there facilitate an environment where the elderly can feel happier as the number of these pictures increases, which is another positive impact created in the social areas. (Figure 5.29.)

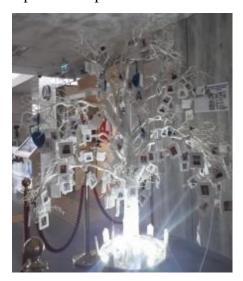


Figure 5.29. Tree in Social Area (Taken by Zeynep Aldemir)

Moreover, the paintings and works that they create are hung on the walls of the corridors and of the social areas in a way allowing them to see these works as well, which is also an encouraging factor for them to get more social and take part in more social activities. This, on the other side, make sure that they stay away from the psychology of getting lonely and quittin on life. (Figure 5.30.)(2.1.2.,3.4.,3.2.2., 3.2.4.)



Figure 5.30. Elder's Painting on Walls in Social Areas (Taken by Zeynep Aldemir)

5.2.3. Analitical Results of Buca Social Life Campus- Nursing and Rehabilitation Center

As examined both Nursing houses in Turkey and also nursing houses in worlwide, also Buca Social Life Campus- Nursing and Rhebailitation Center was examined under all design parameter which are identified in thesis. As a result; this complex containes all the design parameters for elders and also their benefits for the elderly.

Design parameters for elders contains 3 seperate groups like bilological; sensory problems, attrition for bones and cognitive inability. The most effective factors of the biological part are the use of daylight and the ergonomics of the furniture in the elderly.

Second psychological group; safety, belonging, privacy and be social. The most effective factors of the psychological part are way markers in social areas, artifical plantation, building intrevort plan lay out and also activities like cincerts, trips etc. Last one is the social is the third group which is also directly related with

psychological group; chating, meeting with family or grandchilds, games and supportive activities like bocca.

DESIGN PARAMETERS FOR ELDERS	EVALUATION RESULTS		
BIOLOGICAL		elders think that daylight in the social areas of the building the distribution of the daylight in the social life spaces of the current building	
Sensory Problems	V	designed is highly powerful and positive. For the elders that have mostly vision problems.	
Attrition for Bones	V	chairs used in the second-deg.social areas i.e. in the terraces that are located on every line of the current building are more comfortable.	
Cognitive Inability	V	The social areas are connected with 3 main corridors, and each of these corridors has been named.	
PSYCHOLOGICAL			
Safety	~	They expressed that they can lose their balance because of the roughness created by these markers, triggering their worries to get injured. To ensure a flawless circulation for the elderly, the way-markers for the visually disabled should have a lower hight, and placed away from the spaces where the elderly spend most of their times to be in mobility and in communication with each other safely	
Belonging	V	certainly used, which is why natural and artificial plantation has been preferred in these spaces-belonging	
Privacy	V	Due to its intrevort plan layout, it also provide to feel privacy also.	
Be social	V	Because the trips, concerts, various other events and the events organized by other institutions to visit them please them, thereby fulfilling the being social factor.	
SOCIAL			
Chating	V	The elderly that frequently read books, like knitting, get social by listening to music on radio with their friends think that they are affected in a negative way when they carry out these activities in the social areas togetherwith their friends or with people around them. The positive effect of this situation is that they do not feel alone and even that they feel like a tiny family towards each other.	
Meeting with family and grandchilds	V		
Game	V	Preferable Bocche	
Supportive Activities Reading, writing, listening music, hobies	V	Under the observation of doctors and experts, activities are oranized.	

Table 5.5. Desing Parameters for Elders- Buca Social Life; Nursing and Rehabilitation Centers Evaluation Results

CHAPTER 6

CONCLUSION AND FUTURE RESEARCH

There are many factors that restrict the old population that is gradually increasing worldwide. They restrict the elderly in a way that causes reduction in their life quality. Listed among these factors, spatial design offered for the elderly is discussed in this study within the context of spatial functions. To make sure that the elderly sustains an active life by preserving their life quality, it is necessary to analyze elders' needs and the spatial information concerning these needs so they can be transferred to future. It is highly important that the spatial conditions observed in a space where an elder lives are suitable for that elder's life style. It is thus thought that the spaces for the elderly should replace some of the losses caused by the biological changes occurring in the elderly, fulfill some of their psychological needs such as safety and belonging while also making sure that they sustain their connection with their social environment. These are the roles that these places are in charge of fulfilling. It should be main objective to arrange spaces that ensure a healthy aging process for the elderly in architectural terms. The place and design characteristics related to the elderly can only be fulfilled in consideration with the physical and cognitive changes occurring in the elderly, diminishing skills and increasing needs. A design that is suitable and effective is needed to make sure that the elderly sustains their lives in the same place.

In this thesis are a literature review concerning the elderly, as well as observations, and analyses of interviews. Within the context of the interviews held, it is intended to obtain the data that can answer questions about the changing needs of the elderly in the social areas—in the nursing and rehabilitation center. The systematized interior design analyses were conducted, and they were supported by the interview questions asked in an attempt to determine some spatial and furniture layout solutions to enhance elders' satisfaction.

Two different analyses were conducted as part of the thesis. The first one is the analysis of the observation and interview studies that were conducted to examine their connection with the social areas that they are in because of the biological

changes in them. The second one is the analysis that was conducted concerning their connection with the social areas that they are in within the context of the psychological and sociological changes in them. These analyses conclude with evaluations that concern the applications of the interior design data retrieved in the sample nursing home's social areas.

Use of the daylight factor that is highly important in interior space layout and organization is understood to affect the psychological state of the elderly, and that it contributes to their getting social. Based on the scientific data and the interviews held with the elderly, it is also observed that use of the daylight boost their will to hold on to life. Moreover, incorporating natural factors such as plants, water into the design is of benefit for the elders' welfare, and make them feel better psychologically. It also encourages them to take part in activities and get social-engaged.

The analyses of the interviews reveal that the elders leaving their families and the house order that they have been in for a long time to start living in nursing homes want to stay alone so they can read books, newspapers, or rest by themselves. The double seating layout that is currently available in the social space for this case can be increased in number, and some spots can be selected to apply warm interior design solutions in an attempt to create a positive effect on the elderly.

The study also reveals that the elderly prefers the seating order that has the highest level of sociopetal-interaction. As already observed in the research conducted as part of the thesis, sitting in sociopetal seating layout has a positive effect on the elders' biological welfare while also uplifting them since it allows them to hear and understand each other easily.

The sofas of dark color make the elderly pessimist and feel alone; therefore, the red, orange and yellow colors and their tones are preferred by the elderly. Within the context of the analysis conducted on the interviews, the patterns that are on the sofas and their cushions do not have either negative or positive effect on them. However, the texture of the fabric used for the sofas i.e. leather or artificial leather causes gliding while they are taking a seat and standing up. The function of the furniture is another important factor since the elderly expect the furniture to surround them tightly so they feel more secure when seated. It is also important that, furniture layouts, hygiene of the furniture and their ability to make the elderly feel secure and belonging bear great importance in the social life spaces where there is the highest level of circulation, socialization and events taking place.

According to the analyses results from the interviews, it is now known that the elderly does not prefer colorful or extremely patterned walls in the social areas where they spend most of their times, and that they feel more comfortable in spaces surrounded by walls of softer colors. Use of multiple colors on walls or patterned wall papers might also cause confusion, and occasionally headache and balance problems, as already taken note of.

In conclusion, the thesis questions the satisfaction of the elderly with the social areas of the nursing homes based on the interior place data obtained, and makes interior design suggestions for the social areas within nursing homes based on the data obtained. The studies to be conducted in the future that will discuss the places that were constructed for the use of the elderly can make use of the results obtained in this study to dwell on the different perspectives of the topic.

In table 6; there is a detailed list of design parameters for elders in social areas of nursing and rehabilitation centers. According to the analysis of the elderly interviewed; those who have been marked in blue are the factors they find important in social areas. Sensory problems and attrition for bones are most important factors in a biological section. Safety(being safe) and being social factors are indispensable for elders in a psycholohical section. Chating with friends or relatives and supportive activities (reading, writing, listening music, hobies etc.) are connecting factors for elders in social areas.

In consideration of this table; it maintains the importance of all social areas design but besides this, usign day light and accessing to day light is most critical spot in design parameters for elders. Because it effects both their sensory problems and psychological situations. Standart design materials can be used in their private rooms, but according to analysez; on a large scale openings, gaps and windows should be designed in their social areas for benefit from daylight in a healty way.

Another design criterion; the color and esthetic form factor we analyzed in the thesis is not very effective in the elderly. The fabrics of the furniture they are sitting on (not sweaty) and furnitures can support them with the armrests function when they are getting up factors become essential for a design parameters. The other is being social is

In pschological section; feeling safety is depend on their circulation continuity and not meeting with obstacles. Accordingly, design items or layouts should not applicated in their social areas of elders. Being social factor shows that it is more important to provide the opportunity to socialize with the environment than they would like to sit down with the sitting layouts.

According to thesis datas; when designing places especially social areas for elders,, it is important to design social places suitable for doing all activities in there as much as possible. In addition, in order to ensure sustained chating activity, seating layouts are planned to be arranged at the right distance and layouts.

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APPENDIX 1 – Critical Thinking

INTERVIEW QUESTIONS

A. PRE-INTERVIEW QUESTIONS

- 1. How old are you?
- 2. What is your education status?
- 3. What is your job?
- 4. Where are you from?
- 5. How many years you live in here?

B. QUESTIONS FOR ELDERLY REQUIREMENTS

- 6. Do you need any support for moving or walking? If yes, can you explain this support?
- 7. Do you have any physical discomfort? Can you explain what / what is there?
- 8. How is your health?
- 9. What is your reason for settling here?
- 10. What are the positive effects of settling here?
- 11. How do your senses affect your daily social activities? (Sensory problems)

C. QUESTIONS FOR USE OF SOCIAL AREAS

- 12. Can you tell us about your daily routine? (How long do you spend in your room during the day? What time do you use social areas? Etc.)
- 13. Which is more important for you in your social areas? (Basic needs such as eating, drinking, resting, warming need, security, sense of belonging, feeling of care and reputation, ability to do what they want alone.)
- 14. Which is the most benefit activity for you in this complex? Why?
- 15. What is your desire to be in social areas?

- 16. What are your most favourite activities in the social areas of the complex?

 Can you sort? (Book-reading newspapers, listening to music, watching TV-videos, computers, playing with friends, chatting etc.)
- 17. Do you feel comfortable in the social areas in a pyschological way?
- 18. Do you feel ergonomically comfortable in social areas?
- 19. What are the positive effects of spending time in social life? (I'm happy, I'm peaceful, I don't feel lonely, I feel comfortable like in my home, care and dignity of everyone is pleasing me.)
- 20. Do you have a choice in social areas where you spend time? Why? (
 morning afternoon evening, summer winter, week weekend, while my
 guest is there etc.)
- 21. What kind of place do you imagine to meet with your friends and family? (Alone / My Friends / Doesn't matter / Other)
- 22. Do you think there should be isolated areas in the social sphere where you can be alone?
- 23. Are you satisfied with the color of surfaces and coverings which is used in the social areas? Why? (Ceiling, walls and floors will be asked separately)
- 24. Is lighting available for your activities in the social areas? Is the light level enough? (The risk of falling, glare, less or more light, shadows occur due to the decrease in the field of view etc.)

D. QUESTIONS ABOUT THE USE OF FURNITURES

- 25. What are the positive effects of sitting together with your friends in social areas?
- 26. What are the negative effects of sitting together with your friends in social areas?
- 27. Which furniture do you need most in social areas? Why?
- 28. Should furnitures be functional or aesthetic for you in social areas?
- 29. 32. Would you prefer to sit side by side with your friends or face to face? Which makes you feel more comfortable?
- 30. 33. Are you satisfied with colors of the furnitures in the social areas? Why?

- 31. Which fabric do you prefer for furniture in the social areas?(Sample photos and cartels will be offered) (Wood, metal, glass, plastic, fabric only)
- 32. Which furniture colors or colors of fabric do you prefer in the social areas?





