

# Alzheimer's Disease Awareness: A Cross Sectional View From Eskisehir

Alzheimer Hastalığı Farkındalığı: Eskişehir'den Kesitsel Bir Bakış

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## Abstract

Alzheimer's Disease (AH) is an age-related progressive neurodegenerative disease characterized by memory loss, cognitive impairment, and functional decline. Awareness of AH is important in terms of increasing prevalence and impact on general society. With this study, we aimed to evaluate a cross-sectional perspective from the city where we live the general and group differences in knowledge and attitudes about AH. Physicians and nurses working in Eskişehir City Hospital and individuals over the age of 18 selected randomly in Eskişehir were included in the study. A questionnaire including 4 questions about AH and awareness was applied to the people who accepted the study by the attending physician. In the survey study, demographic data such as age, gender, educational status and occupation were recorded with the approval of the participant. Participants were divided into three groups: Physicians working in Group I Eskişehir City Hospital, nurses working in Group II Eskişehir City Hospital and randomly selected healthcare workers living in Group III Eskişehir. A total of 435 individuals, 311 (71.5%) women and 119 (28.5%) men, were included in the study. 103 (23.7%) in Group I, 112 (25.7%) in Group II and 220 (50.6%) in Group III participated in the survey. While 242 (55.6%) of the 435 participants in our study evaluated normal the occurrence of forgetfulness in people over 65, 193 (44.4%) stated that it was not normal. "Is there a cure for Alzheimer's disease?" 256 (58.9%) people answered no, and 179 (41.1%) people answered yes. 252 (57.9%) people answered yes and 183 (42.1%) answered no to the hereditary question of AH. While 219 people (50.4%) were aware of the existence of a center for Alzheimer's patients in Eskişehir, 216 people (49.6%) did not have any information. There are no known publications about the awareness of the disease in our country. Our study is important in terms of providing a cross-sectional view of the country from Eskişehir.

**Keywords:** Alzheimer, awareness, dementia

## Özet

Alzheimer Hastalığı (AH), hafıza kaybı, bilişsel bozukluk ve fonksiyonel düşüş ile karakterize edilen yaşa bağlı ilerleyici nörodegeneratif bir hastalıktır. Artan prevalansı ve genel topluma etkisi açısından AH'nın farkındalığı önemlidir. Bu çalışma ile AH hakkındaki bilgi ve tutumlardaki genel ve grupsal farklılıkları yaşadığımız şehirden kesitsel bir bakış değerlendirmesini amaçladık. Eskişehir Şehir Hastanesi'nde çalışan hekimler ve hemşireler ile Eskişehir ilinde yaşayan ve rastgele seçilen 18 yaş üzeri bireyler çalışmaya alınmıştır. Çalışmayı kabul eden kişilere, uzman hekim tarafından AH ve farkındalık ile ilgili 4 adet soru içeren bir anket uygulanmıştır. Anket çalışmasında katılımcının onayı ile yaşı, cinsiyeti, eğitim durumu ve mesleği gibi demografik verileri kaydedilmiştir. Katılımcılar 3 gruba ayrılarak incelendi: Grup I Eskişehir Şehir Hastanesi'nde görevli hekimler, Grup II Eskişehir Şehir Hastanesi'nde görevli hemşireler ve Grup III Eskişehir ilinde yaşayan rastgele seçilen sağlık çalışanı olmayan, halktan kişiler olarak belirlendi. Çalışmaya 311'i (%71.5) kadın, 119'u (%28.5) erkek olmak üzere toplam 435 birey dahil edildi. Grup I'de 103 (%23.7), Grup II'de 112 (%25.7) ve Grup III'de 220 (%50.6) kişinin ankete katılımı sağlandı. Çalışmamızdaki 435 katılımcının 242'si (%55.6) 65 yaş üzeri kişilerde unutkanlığın görülmesini normal olarak değerlendirirken, 193'ü (%44.4) normal olmadığını belirtti. "Alzheimer hastalığının tedavisi var mıdır?" sorusunu 256 (%58.9) kişi hayır, 179 (%41.1) kişi ise evet olarak yanıtladı. AH'nın kalıtsallığı sorusuna 252 (%57.9) kişi evet, 183 (%42.1) kişi hayır olarak cevapladı. Eskişehir ilinde Alzheimer hastaları için bir merkezin varlığından 219 (%50.4) kişi haberdar iken, 216 kişinin (%49.6) bilgisi yoktu. Ülkemizde hastalığın farkındalığı ile ilgili yapılmış bilinen yayın bulunmamaktadır. Bizim çalışmamız ülkeye Eskişehir ilinden kesitsel bir bakış sağlaması açısından önemlidir.

**Anahtar Kelimeler:** Alzheimer Hastalığı, Demans, Farkındalık

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## 1. Introduction

Alzheimer's disease (AD) is an age-related, progressive neurodegenerative disease characterized by loss of memory, cognitive dysfunction. The AD awareness is important due to increased prevalence and its effects on society. The increasing national and international interest on AD leads novel improvements in pathophysiology, diagnosis and treatment [1].

In recent studies, it has been reported that there are marked variations in knowledge, awareness and behavioral attitude about disease depending on age, gender, geography, education level and occupation [1, 2]. In large studies, it was shown that there are many misunderstanding in the population regarding the disease [2]. In this study, we aimed to present a cross-sectional assessment of knowledge and attitudes about AD in general and subgroups in Eskişehir.

## 2. Material and Method

The study included clinicians and nurses working in Eskişehir City Hospital and individuals aged >18 who were randomly selected and living in Eskişehir province. A questionnaire including 4 questions about AD and awareness was applied to participants by clinicians via face-to-face interview method. Demographic data such as age, gender, education level and occupation were recorded with consent of participants. The participants were stratified into 3 groups: Group I, clinicians working in Eskişehir City Hospital; Group II, nurses working in Eskişehir City Hospital; and Group III non-healthcare individuals in Eskişehir. The items in questionnaire included whether forgetfulness is normal in individuals aged >65 years; whether AD is hereditary; whether there is a treatment for AD; and whether there is a care center for AD patients in Eskişehir. All questions were responded as yes or no. The answers were recorded, classified and analyzed.

Inclusion criteria: all clinicians and nurses who were working in Eskişehir City Hospital and accepted to participate to survey and all adults who were living in Eskişehir province and accepted to participate to survey were included with aim of achieving a large database. In the clinician and nurse groups, healthcare professional working at department of neurology and psychiatry were excluded; thus, the reliability of sample was protected by excluding participants who could provide answers in their professions.

### *Ethic committee*

The study was approved by Ethics Committee Chairmanship on Non-interventional Clinical Research of Eskişehir Osmangazi University (approval#25403353-050.99-E.52128; approval date: 17.03.2020). After ethic approval, the survey was completed in the field within one month.

### *Statistical analysis*

SPSS 22 program was used for statistical analysis of data. To determine the statistical significance between the groups, numerical data were evaluated by the t-test and other data by the chi-square test. The chi-square for normally distributed data and the Fisher's exact for non-normally distributed data were performed.  $p < 0.05$  was considered statistically significant.

## 3. Results

A total of 435 individuals, 311 (71.5%) female and 119 (28.5%) male, were included in the study. Mean age was  $37.2 \pm 11.6$  years (19-73 years). In Group I, 103 individuals (23.7%) were participated to the survey whereas 112 individuals (25.7%) in Group II and 220 individuals (50.6%) in Group III. Of the participants, 327 (75.1%) university graduate whereas 72 (16.6%) were high-school graduate, 19 (4.4%) were primary school graduate and 17 (3.9%) were secondary school graduate (Table 1).

**Table 1.** Demographic characteristics of the participants

|                        | Number | Percent |
|------------------------|--------|---------|
| <b>Gender</b>          |        |         |
| <b>Woman</b>           | 311    | %71.5   |
| <b>Man</b>             | 119    | %28.5   |
| <b>Groups</b>          |        |         |
| <b>Group I</b>         | 103    | %23.7   |
| <b>Group II</b>        | 112    | %25.7   |
| <b>Group III</b>       | 220    | %50.6   |
| <b>Education Level</b> |        |         |
| <b>University</b>      | 327    | %75.1   |
| <b>High school</b>     | 72     | %16.6   |
| <b>Middle School</b>   | 17     | %3.9    |
| <b>Primary school</b>  | 19     | %4.4    |

While 242 (55.6%) of the 435 participants in our study evaluated the observation of forgetfulness as normal in people over the age of 65, 193 (44.4%) stated that it was not normal. "Is there a treatment for Alzheimer's disease? 256 (58.9%) answered the question as "no" and 179 (41.1%) answered yes. For

question "Is Alzheimer's disease hereditary?", 252 participants (57.9%) responded as "Yes" while 183 participants (42.1%) responded as "No". 219 participants (50.4%) were informed about presence of care center for AD patients while 216 (49.6%) had no knowledge about such a care center (Table 2).

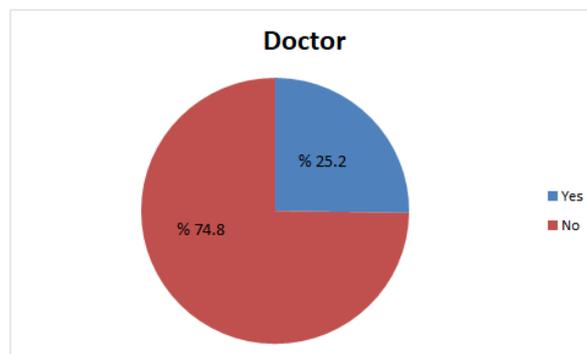
**Table 2.** Number and percentages of questionnaire questions and answers given.

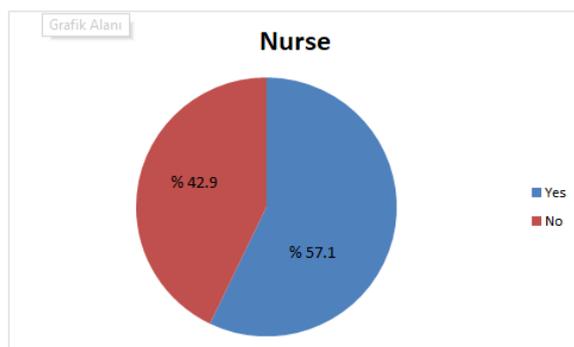
|   | Yes      |           |            | Total       | No          |
|---|----------|-----------|------------|-------------|-------------|
|   | GRO UP I | GRO UP II | GROU P III |             |             |
| <b>Forgetfulness is normal in individuals aged&gt;65 years?</b> | 26       | 64        | 152        | 242 (%55.6) | 193 (%44.4) |
| <b>Is there a treatment for AD?</b>                             | 41       | 43        | 95         | 179 (%41.1) | 256 (%58.9) |
| <b>Is AD hereditary ?</b>                                       | 80       | 77        | 95         | 252 (%57.9) | 183 (%42.1) |
| <b>Is there a care center for AD patients in Eskişehir ?</b>    | 57       | 60        | 102        | 219 (%50.4) | 216 (%49.6) |

*AD: Alzheimer's Disease*

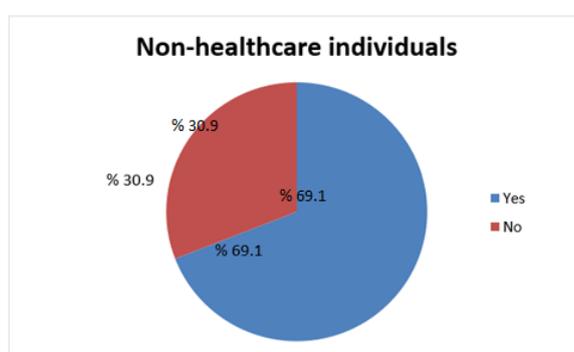
While 26 of 103 physician participants (Group I) who participated in our study evaluated the observation of forgetfulness as normal in people over the age of 65. 152 of 220 people

in Group III answered the question as same. The question of the hereditary of AD was answered as no with 125 people in Group III (57.1%). (Graphic 1)

**Graphic 1.** Is forgetfulness normal in individuals aged>65



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**Graphic 1.** Is forgetfulness normal in individuals aged>65

There was no significant difference in all items according to gender in the study. When answers to the question "Is forgetfulness normal in individuals aged>65 years?" was

assessed, it was determined that awareness significantly differed in Group I when compared with Group II and III ( $p < 0.001$ ) (Table 3).

**Table 3.** Survey questions and comparison of given answers between groups

|   | GROUP I<br>n = 103 | GROUP II<br>n = 112 | GROUP III<br>n = 220 | p      |
|---|--------------------|---------------------|----------------------|--------|
| Forgetfulness is normal in individuals aged>65 years? | 26 (%25.2)         | 64 (%57.1)          | 152 (%69.1)          | <0.001 |
| Is there a treatment for AD?                          | 41 (%39.8)         | 43 (%38.4)          | 95 (%43.2)           | 0.6    |
| Is AD hereditary ?                                    | 80 (%77.7)         | 77 (%68.8)          | 94 (%42.9)           | <0.001 |
| Is there a care center for AD patients in Eskişehir ? | 57 (%55.3)         | 60 (%53.6)          | 102 (%48.8)          | 0.5    |

When examined in terms of the answers about the heritability of AD, it was found that the Group III awareness was statistically significantly different compared to Group I and II. ( $p < 0.001$ )

There was no significant difference between all groups for questions about AD treatment and AD care center in Eskişehir. ( $p > 0.05$ )

In addition, no significant difference was detected in first 3 questions according to age

between groups ( $p>0.05$ ). However, it was found that there was significant difference in answers to the question "Is there a care center for AD patients in Eskişehir?" according to age in Group I ( $p=0.02$ ). No significant difference was determined between all groups and all questions in terms of education level. ( $p>0.05$ )

#### 4. Discussion

Alzheimer and dementia are generally used interchangeably in the society, although all forgetfulness cases are not AD. The dementia is not a single entity; rather, it is a clinical condition resulting from several diseases. The AD is the most commonly seen type of dementia [5]. The AD is an insidious-onset disease with slow progression, resulting in decreased life expectancy by causing physical and functional losses.

The AD prevalence is increased by advancing age [6]. In epidemiological studies, similar prevalence rates have been reported from different regions of world [7]. In recent studies the estimated AD prevalence has been reported as 5.05% (95% CI: 4.73-5.39) in Europe [8]. According to 2014 World Alzheimer Report published by Alzheimer's Disease International/ADI, there are 46.8 million AD patients worldwide. In the report, it was projected that this figure will reach up to 74.7 million in 2030 and 131.5 million in 2050 [9]. In a study from Turkey, Gurvit et al. reported AD prevalence as 10% in individuals aged >70 years [10]. The overall prevalence of dementia was 8.4%, but ranged from 2.2% between the ages of 55-59 to 5.3% in those aged 60-64, and 30.4% in those aged 75 and over, according to another study reported by Özbabalık et al. (11) It is known that there are 400,000 AD patients in Turkey and AD will be more prevalent in the future with aging population. Taking their families into account, it is apparent that AD is major public health issue that involves a large population [12].

The clinical findings may include cognitive impairment, behavioral and psychiatric symptoms and impaired daily life activities. Seeking medical attention may be delayed due to fact that behavioral and psychiatric

problems as an initial symptoms. The low awareness regarding disease prevents early diagnosis of AD. In our study, as expected, AD awareness was higher in clinician and nurse groups (Group I and II) when compared to society (Group III). However, it as seen that forgetfulness in individuals aged >65 years is even considered as normal in the clinician group by 25.2%. This implicates that forgetfulness, first and alarming sign for AD, can be neglected by advancing age, leading to delay in diagnosis until moderate of advanced stages. Previous studies showed that there is a great gap of knowledge about AD in Turkish society. In a survey on relatives of AD patients, it was seen that 75 of participants had no knowledge about AD [13]. At least one-half of AD patients die without diagnosis or treatment. In another study, it was found that 83% of 1400 participants considered senility as normal in elder life [12]. In fact, early diagnosis is very important in AD and measures taken at middle-ages may delay onset of AD. Thus, it is highly important to inform and enhance awareness in the society together with announcement of advances. The enhancement of public awareness will reduce barriers seen in both diagnosis and treatment of disease and will prevent stigma for the disease. Given the extent of population affected by AD, it is apparent that there is a need for multi-stakeholder public health approach involving family, civil society organizations, religious organization, academia, media, private sector and international organization in the fight against AD [9]. In this regard, media has a great responsibility in improving perspective to AD and AD patients, fighting in stigma and approaches sensitive to human rights in addition to improving public knowledge about disease by activities such as awareness campaigns [9].

In this cross-sectional study, it was found that the recognition level for facilities such as AD care center or day care center was 51.7% in the society. Collaboration should be implemented to increase recognition level.

Currently, there is no definitive treatment in AD, which may cure and return patient normal [13, 14]. However, several agents

have been developed, which may slow disease progression and improve daily life activities by relieving symptoms [16, 17]. In our study, opinions about treatment of disease were comparable among 3 groups.

In additions to effect on patients, AD also leads serious psychosocial and economic burden on caregivers, families and society. In Turkey, a member of family commits care for AD patient, who is generally his/her partner or daughter. In advances stages of AD, patients require continuous support and supervision of caregiver. Thus, the caregiver experiences a severe stress and exhaustion [12].

The burden of care and emotional distress are increased in caregivers by increasing severity of cognitive, psychological, behavioral and motor decline in AD. In this process,

caregivers increasingly require coping strategies and social support [18]. In a study using focus-group discussion with caregivers, it was revealed that the need for admission to nursing home by caregivers was increased [19]. These studies indicated that it is important to improve recognition level of Alzheimer care center and/or nursing home.

## 5. Conclusion

To best of our knowledge, there is no study on AD awareness in Turkey. Our study is important as it provides a cross-sectional view to country from Eskişehir province.

In this study, we aimed to improve AD awareness and to provide a course of action for future studies by presenting a cross-sectional view from our city.

## REFERENCES

1. Tsolaki M, Paraskevi S, Degleris N, Karamavrou S. Attitudes and perceptions regarding Alzheimer's disease in Greece. *Am J Alzheimers Dis Other Demen.* 2009;24:21-6
2. Roberts JS, McLaughlin SJ, Connell CM. Public beliefs and knowledge about risk and protective factors for Alzheimer's disease. *Alzheimers Dement.* 2014;10:S381-9.
3. Werner P. Knowledge about symptoms of Alzheimer's disease: correlates and relationship to help-seeking behavior. *Int J Geriatr Psychiatry.* 2003;18:1029-36.
4. Hudson JM, Pollux PM, Mistry B, Hobson S. Beliefs about Alzheimer's disease in Britain. *Aging Ment Health.* 2012;16:828-35.
5. Emre M. 99 soruda Alzheimer Parkinson. (2006) İstanbul: İş Bankası Yayınlar :1-80
6. GBD 2016 Dementia Collaborators. Global, regional, and national burden of Alzheimer's disease and other dementias, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Neurol.* 2019 ;18:88-106.
7. Mayeux R, Stern Y. Epidemiology of Alzheimer disease. *Cold Spring Harb Perspect Med.* 2012 1;2:a006239.
8. Niu H, Álvarez-Álvarez I, Guillén-Grima F, Aguinaga-Ontoso I. Prevalence and incidence of Alzheimer's disease in Europe: A meta-analysis. *Neurologia.* 2017;32:523-532. English, Spanish.
9. Prince, M., Wimo, A., Guerchet, et al. World Alzheimer Report 2015. The global impact of dementia: an analysis of prevalence, incidence, cost and trends. *Alzheimer's Dis Int.* 2015." 2018: 84.
10. Gurvit H, Emre M, Tinaz S, Bilgic B, Hanagasi H, Sahin H, Gurol E, Kvaloy JT, Harmanci H. The prevalence of dementia in an urban Turkish population. *Am J Alzheimers Dis Other Demen.* 2008;23:67-76.
11. Arslantaş D, Ozbabalik D, Metintaş S, Ozkan S, Kalyoncu C, Ozdemir G, Arslantas A. Prevalence of dementia and associated risk factors in Middle Anatolia, Turkey. *J Clin Neurosci.* 2009 ;16:1455-9.
12. Çobaner A., Öğüt P. "Azheimerve Alzheimer'lı Hastaların Haberlerde Temsili." *Online Journal of the Faculty Communication Sciences* 2017: vol: 25/2
13. Baral Kulaksızoğlu I. & Cankurtaran Şahin E. Dünya Alzheimer günü basın açıklaması. *Türkiye Psikiyatri Derneği Bülteni.* 2014;17:17-18.
14. Prout, R. "Critical condition: Alzheimer's and identity in Carla Subirana's *Nedar* (2008)." *Journal of Iberian and Latin American Studies* 18.2-3 2012: 245-263.
15. Knopman DS, Petersen RC, Jack CR Jr. A brief history of "Alzheimer disease": Multiple meanings separated by a common name. *Neurology.* 2019;28;92:1053-59.
16. Edward T. ZaWada (Editör) Geriatric Medicine and Gerontology In: Keskin AO., Durmaz N., Uncu G. et al. "Future Treatment of Alzheimer Disease." *IntechOpen*, 2019: 376-399
17. Falkentoft AC, Hasselbalch SG. Immunoterapi mod Alzheimers sygdom [Immunotherapy for

- Alzheimer's disease]. *Ugeskr Laeger*. 2016; 18;178:V07150588. Danish.
18. Dias R, Santos RL, Sousa MF, Nogueira MM, Torres B, Belfort T, Dourado MC. Resilience of caregivers of people with dementia: a systematic review of biological and psychosocial determinants. *Trends Psychiatry Psychother*. 2015 ;37:12-9
  19. DiZazzo-Miller R., Pociask F.D., and Samuel P."Understanding resource needs of persons with dementia and their caregivers." *Michigan Family Review*, 17, 2013: 1-20,