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Assessment of Awareness and Knowledge Levels Regarding Obstructive Sleep Apnea in the Turkish Population

Türk Toplumunda Obstrüktif Uyku Apnesine İlişkin Farkındalık ve Bilgi Düzeylerinin Değerlendirilmesi

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Abstract

Objectives: The aim of this study was to assess the awareness and knowledge levels of the Turkish population regarding Obstructive Sleep Apnea (OSA).

Materials and Methods: A 19-question online questionnaire was administered via Google Forms. The first 7 questions collected demographic data (e.g., gender, age, education), while the remaining 12 assessed OSA knowledge. The data were analyzed using Pearson Chi-Square and Fisher's Exact tests, with $p<0.05$ considered significant.

Results: A total of 1,032 individuals completed the survey (56% female, 44% male). Of these, 50.9% were single and 46.7% married. Education levels varied, with 63.7% university graduates and 7.1% holding postgraduate degrees. While 58.7% had heard of OSA, significant knowledge gaps were evident. Associations were first examined using chi-square or Fisher's exact tests, followed by multivariable logistic regression analysis to identify independent predictors of OSA awareness. Significant associations were found between OSA awareness and several demographic variables, particularly gender, age group, and education level ($p < 0.05$).

Conclusion: Public awareness and knowledge of OSA in Türkiye remain low. Medical education should be enhanced with additional training and curriculum time on sleep disorders. Public awareness should also be promoted through campaigns, seminars, and accessible educational materials to support early diagnosis and prevention of OSA-related complications.

Keywords: Obstructive Sleep Apnea, sleep, population, Türkiye

Öz

Amaç: Bu çalışmanın amacı, Türk toplumunda Obstrüktif Uyku Apnesi'ne (OSA) ilişkin farkındalık ve bilgi düzeylerini değerlendirmektir.

Materyal ve Metot: Google Forms aracılığıyla 19 sorudan oluşan çevrimiçi bir anket uygulanmıştır. İlk 7 soru demografik verileri (cinsiyet, yaş, eğitim düzeyi vb.) toplarken, kalan 12 soru OSA hakkında bilgi düzeyini değerlendirmiştir. Veriler Pearson Ki-Kare ve Fisher's Exact testleri kullanılarak analiz edilmiş, $p<0.05$ değeri istatistiksel olarak anlamlı kabul edilmiştir.

Bulgular: Toplam 1.032 birey ankete katılmıştır (%56 kadın, %44 erkek). Katılımcıların %50,9'u bekar, %46,7'si evlidir. Eğitim düzeyleri incelendiğinde, %63,7'sinin üniversite mezunu, %7,1'inin ise lisansüstü eğitim aldığı belirlenmiştir. Katılımcıların %58,7'si OSA hakkında daha önce bilgi sahibi olduğunu belirtmiş, ancak genel bilgi düzeylerinde belirgin eksiklikler saptanmıştır. OSA farkındalığı ile cinsiyet, yaş grubu ve eğitim düzeyi gibi çeşitli demografik değişkenler arasında anlamlı ilişkiler bulunmuştur ($p<0.05$).

Sonuç: Türkiye'de toplumun OSA konusundaki farkındalık ve bilgi düzeyleri yetersizdir. Tıp eğitimi müfredatına uyku bozukluklarıyla ilgili daha fazla içerik ve uygulama süresi eklenmelidir. Ayrıca erken tanı ve OSA'ya bağlı komplikasyonların önlenmesini desteklemek amacıyla, toplum farkındalığının artırılmasına yönelik kampanyalar, seminerler ve erişilebilir eğitim materyalleriyle halk eğitimi desteklenmelidir.

Anahtar Kelimeler: Obstrüktif uyku apnesi, Türkiye, toplum, uyku

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INTRODUCTION

Obstructive Sleep Apnea (OSA) is a multifactorial sleep-related breathing disorder characterized by recurrent upper airway collapse during sleep, resulting in intermittent hypoxia, hypercapnia, and sleep fragmentation. Although once considered a predominantly adult condition, OSA is now recognized across all age groups, including children and adolescents, and is associated with significant physical, cognitive, behavioral, and psychosocial consequences.[1] If left untreated, OSA may lead to excessive daytime sleepiness, attention deficits, mood instability, and increased cardiometabolic risks such as hypertension, obesity, insulin resistance, and type 2 diabetes.[2-4]

The rising global prevalence of OSA has become a major public health concern. It affects approximately 1–5% of children and more than 20% of adults, yet a large proportion remains undiagnosed.[5,6] Underdiagnosis is frequently attributed to nonspecific symptoms and low public awareness, as common signs including loud snoring, restless sleep, and daytime behavioral problems are often overlooked or misinterpreted, contributing to diagnostic delays and poor treatment adherence.[7,8] Public awareness is therefore critical for early recognition and management. Individuals who understand OSA-related risks are more likely to seek medical assistance and adhere to treatments such as continuous positive airway pressure (CPAP) or mandibular advancement devices (MADs).[9] Increased awareness also facilitates parental vigilance, early childhood screening, and interdisciplinary collaboration among pediatricians, otolaryngologists, dentists, and sleep specialists.[10-12]

Despite its importance, limited research has assessed public knowledge of OSA in developing or middle-income countries.[13-15] International findings consistently demonstrate insufficient awareness of symptoms and systemic consequences[1]; for example, fewer than half of Australian respondents recognized OSA's impact on children, while most French adults underestimated cardiovascular risks.[11,14] Türkiye's rapid urbanization, rising childhood obesity, irregular sleep habits, and increased screen exposure further elevate sleep-related health concerns.[16] Yet population-level data on OSA awareness remain limited. Sociocultural characteristics, healthcare accessibility, and medical system trust also influence awareness.[17] Additionally, dental and orthodontic professionals equipped with airway-focused diagnostic tools can identify structural risk factors such as retrognathia, macroglossia, or a high-arched palate.[18]

This study aims to evaluate OSA awareness and knowledge among the Turkish population and identify sociodemographic factors influencing awareness, thereby supporting the development of culturally tailored, region-specific educational strategies.

MATERIALS AND METHODS

Ethics Committee Approval: This research was approved by the Ordu University Non-Interventional Clinical Research Ethics Committee (Date: 12.05.2023, decision no: 147). The study was conducted in accordance with the ethical standards of the Declaration of Helsinki and relevant international guidelines. All participants provided electronic informed consent prior to inclusion in the survey.

Study Design and Setting: This descriptive cross-sectional study was conducted between May and August 2023 to assess awareness and knowledge of obstructive sleep apnea (OSA) among adults in Türkiye. Data were collected with a Google Forms questionnaire distributed via social media and email groups. Paper copies were also administered in selected rural areas and healthcare facilities to reach adults without internet access and were entered into the same database. This cross-sectional study was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies

Survey Development and Content Validation: The questionnaire comprised 19 items. Seven questions recorded socio-demographic variables (gender, age, marital status, city of residence, education level, occupation and monthly income), and twelve assessed knowledge of OSA symptoms, risk factors, treatment options and potential health consequences. Three experts in sleep medicine, public health and survey methodology reviewed the draft and suggested minor revisions to improve clarity. No formal pilot study or internal consistency analysis (e.g. Cronbach's alpha) was performed because the aim was to describe population-level knowledge, not to develop a psychometric scale. The survey items were developed based on a review of previously published population-based questionnaires assessing awareness and knowledge of obstructive sleep apnea. Questions were adapted from earlier international surveys and refined to ensure cultural and linguistic appropriateness for the Turkish population. Content validity was assessed procedurally through expert review. Three experts with experience in sleep medicine, public health, and survey methodology independently evaluated the questionnaire for relevance, clarity, and comprehensiveness. Minor revisions were made based on consensus to improve wording and content coverage.

Sampling and Participants: Convenience sampling was used for this online and paper-based design. Eligibility criteria were age ≥18 years, residence in Türkiye, and provision of informed consent. Individuals younger than 18 years; healthcare professionals (including physicians, dentists, nurses, pharmacists, and physiotherapists); and medical or dental students were excluded to avoid professional bias. Despite diverse settings, university graduates were over-represented, limiting generalizability. In total, 1,620 individuals completed the survey; after exclusion of healthcare professionals, 1,032 respondents were included in the final analysis. The flow diagram was not included because participant inclusion was straightforward and is clearly described in the text.

Outcome Measures: Primary outcomes were OSA awareness (having heard of OSA) and knowledge (understanding of symptoms, risk factors, and treatments). The secondary outcome was the association between socio-demographic characteristics and OSA awareness and knowledge.

Statistical Analysis: A priori sample size calculation was performed using G*Power software (version 3.1.9.7), assuming a 95% confidence level, 80% statistical power, and a 5% margin of error, which indicated a minimum required sample size of 400 participants. A total of 1,032 participants were included in the analysis to enhance statistical power and precision. Statistical analyses were conducted using IBM SPSS Statistics version 26.0. OSA awareness was defined as the primary outcome variable and coded as a binary variable (yes/no). Associations between OSA awareness and sociodemographic variables (gender, age group, marital status, education level, and monthly income) were initially evaluated using Pearson's chi-square test or Fisher's exact test, as appropriate. Subsequently, multivariable binary logistic regression analysis was performed to identify independent predictors of OSA awareness. Multicollinearity among independent variables was assessed prior to regression analysis and was not considered problematic. Effect estimates were reported as odds ratios with 95% confidence intervals. A p-value < 0.05 was considered statistically significant, while p-values < 0.001 were considered highly statistically significant.

RESULTS

A total of 1,032 participants were included in the analysis. Women constituted 56.0% (n=577), and most respondents were single (50.9%) and university graduates (63.7%). Nearly half of the participants (49.5%) reported a monthly income of less than 10.000 TL. Detailed demographic characteristics are presented in Table 1.

Table 1. Demographic characteristics of subjects participating in this study (n=1032).

		n (%)
Gender	Female	577 (56)
	Male	455 (44)
Age	18-25	444 (43)
	26-35	184 (17.8)
	36-45	202 (19.6)
	46-55	159 (15.4)
	>56	43 (4.2)
Marital Status	Married	482 (46.7)
	Single	526 (50.9)
	Widow	4 (0.3)
	Divorced	20 (1.9)
Education Status	Primary School	63 (6.1)
	Secondary School	42 (4)
	High School	195 (18.8)
	Bachelor's degree	658 (63.7)
	Master's Degree	74 (7.1)
Monthly Income	less than 10.000 TL	511 (49.5)
	10.000-19.999 TL	364 (35.2)
	20.000-29.999 TL	114 (11)
	30.000-39.999 TL	17 (1.6)
	40.000-49.999 TL	12 (1.1)
	more than 50.000 TL	14 (1.3)

The results of the logistic regression analysis are presented in Table 2. Significant associations were identified between obstructive sleep apnea awareness and several demographic variables. Gender was a strong determinant of awareness, with females demonstrating significantly lower awareness compared with males ($p<0.001$). Among age groups, only participants aged ≥55 years showed a significant decrease in awareness ($p<0.001$), while no

significant differences were observed in the other age categories (18–24, 25–34, 35–44, 45–54) (p>0.05). Education level was one of the strongest determinants of awareness. Significant differences were found among individuals with primary school (p=0.031), high school (p<0.001), associate degree (p < 0.001), and bachelor's degree education (p<0.001). Participants with a master's degree also demonstrated significantly lower awareness (p<0.001). Regarding monthly income, only the 30,000–39,999 TL category showed a significant association (p<0.05), while no significant differences were observed in the other income groups (p>0.05). Marital status—including being married, single, widowed, or divorced—showed no significant association with OSA awareness (p>0.05).

Table 2. Demographic characteristics (gender, age group, education, marital status, monthly income) and their associations with awareness of obstructive sleep apnea.

Demographic Characteristic	ß	Standard Error	Wald	p-value	Odds Ratio (OR)	95% CI	
						Lower	Upper
Male*	-	-	-	**-**	1.000	-	-
Female	-1.000	0.150	44.236	**<0.001**	0.368	0.274	0.494
18-24*	-	-	-	**-**	1.000	-	-
25-34	-0.289	0.238	1.472	0.225	0.749	0.470	1.194
35-44	-0.381	0.327	1.361	0.243	0.683	0.360	1.297
45-54	-0.950	0.353	7.235	**0.007**	0.387	0.194	0.773
>55	-1.701	0.441	14.868	**<0.001**	0.183	0.077	0.433
Married*	-	-	-	-	1.000	-	-
Single	-0.109	0.267	0.168	0.682	0.896	0.531	1.512
Widow	-1.114	0.631	3.114	**0.078**	0.328	0.095	1.131
Divorced	-0.807	1.234	0.418	0.513	0.446	0.040	5.009
Primary School*	-	-	-	**-**	1.000	-	-
Secondary School	-0.947	0.440	4.632	**0.031**	0.388	0.164	0.919
High School	-1.393	0.352	15.687	**<0.001**	0.248	0.125	0.495
Associate Degree/Bachelor's Degree	-1.977	0.340	33.848	**<0.001**	0.138	0.071	0.269
Master's Degree	-2.521	0.445	32.041	**<0.001**	0.080	0.164	0.919
Less than 10,000 TL*	-	-	-	**-**	1.000	-	-
10,000-19,999 TL	-0.145	0.182	0.632	0.427	0.865	0.605	1.236
20,000-29,999 TL	-0.503	0.279	3.258	**0.071**	0.605	0.350	1.044
30,000-39,999 TL	-1.906	0.788	5.858	**0.016**	0.149	0.032	0.696
40,000-49,999 TL	-0.105	0.669	0.024	0.876	0.901	0.243	3.344
More than 50,000 TL	-0.986	0.655	2.267	0.132	0.373	0.103	1.346

*: Reference category; The significance level was set at p < 0.05; p-values < 0.001 were considered highly statistically significant.

Knowledge of OSA symptoms, risk factors, and treatment options was generally low. Snoring was the most frequently recognized symptom (29.7%, n=306), and 31.0% (n=320) reported "no idea." Upper-airway narrowing (38.8%, n=400) and obesity (24.7%, n=255) were the most commonly identified risk factors, while only 1.3% (n=13) recognized hypertension as a comorbidity. Awareness of oral appliance therapy was similarly limited: 64.5% (n=666) reported "no idea," and only 12.9% (n=133) identified orthodontists as the responsible providers. Gender differences were significant across all OSA knowledge items (p<0.05), as shown in Table 3.

Table 3. Comparative Analysis of Gender Differences in Awareness of OSA Risks, Symptoms, Diagnosis, and Treatment Modalities.

		The Effect of Smoking			p*	The Effect of Alcohol			p*
		Yes	**No**	**No Idea**		**Yes**	**No**	**No Idea**	
Gender, n (%)	Female	321 (31.1)	26 (2.5)	250 (24.2)		288 (27.9)	27 (2.6)	262 (25.3)	
	Male	207 (20)	36 (3.4)	212 (20.5)	**0.05**	178 (17.2)	45 (4.3)	232 (22.4)	**0.05**
		The Benefit of using an Oral Appliance In OSA			**p***	**Is OSA a condition that needs to be treated?**			**p***
		Yes	**No**	**No Idea**		**Yes**	**No**	**No Idea**	
Gender, n (%)	Female	191 (18.5)	26 (2.5)	360 (34.8)		407 (39.4)	7 (0.6)	163 (15.7)	
	Male	117 (11.3)	37 (3.5)	306 (29.6)	**0.05**	244 (23.6)	15 (1.4)	196 (18.9)	**0.05**
		Awareness about Obstructive Sleep Apnea							**p***
		Yes				**No**			
Gender, n (%)	Female	377 (36.5)				200 (19.3)			**0.05**
	Male	229 (22.1)				226 (21.8)			

Continuation of **Table 3**.

		The Effect of Smoking				p*	The Effect of Alcohol			p*
		Awareness of obstructive sleep apnea–related risks								
		Family History	**Nasal Congestion**	**Male**	**DM**	**HT**	**Old Age**	**AN**	**OB**	
Gender, n (%)	Female	37 (3.5)	56 (5.4)	13 (1.2)	15 (1.4)	7 (0.6)	58 (5.6)	254 (24.6)	137 (13.2)	**0.05**
	Male	24 (2.3)	58 (5.6)	13 (1.2)	24 (2.3)	7 (0.6)	59 (5.7)	147 (14.2)	123 (11.9)	
		Awareness of OSA-related symptoms								p*
		Snore	**Wake up**	**Morning Headache**		**Thoughtfulness**	**Overstrain**	**No idea**		
Gender, n (%)	Female	192 (18.6)	121 (11.7)	6 (0.5)		14 (1.3)	107 (10.3)	137 (13.2)		**0.05**
	Male	115 (11.1)	78 (7.5)	6 (0.5)		13 (1.2)	78 (7.5)	165 (15.9)		
		Who Makes Oral Appliances								
		Family Physician	**Dentist**	**Otolaryngologist**		**Orthodontist**	**Prosthetic Specialist**	**No idea**		p*
Gender, n (%)	Female	4 (0.3)	55 (5.3)	182 (17.6)		91 (8.8)	29 (2.8)	216 (20.9)		**0.05**
	Male	3 (0.2)	45 (4.3)	107 (10.3)		43 (4.1)	23 (2.2%)	234 (22.6)		
		OSA Diagnosis		p*		**OSA Treatment**				p*
		Yes	No			Yes	No			
Gender, n (%)	Female	10 (0.9)	567 (54.9)	**0.05**		7 (0.6)	570 (55.2)			**0.05**
	Male	43 (4.1)	412 (39.9)			39 (3.7)	416 (40.3)			

*: Results of Pearson Chi-Square test (p <0.05 considered statistically significant); DM: Diabetes mellitus; HT: Hypertension; AN: Airway narrowing; OB: Obesity.

Most participants (94.8%, n=979) reported no prior OSA diagnosis. Among the 53 diagnosed individuals, 86.7% (n=46) stated that they had received treatment, with CPAP being the most common modality. Treatment-related distributions are presented in Figure 1.

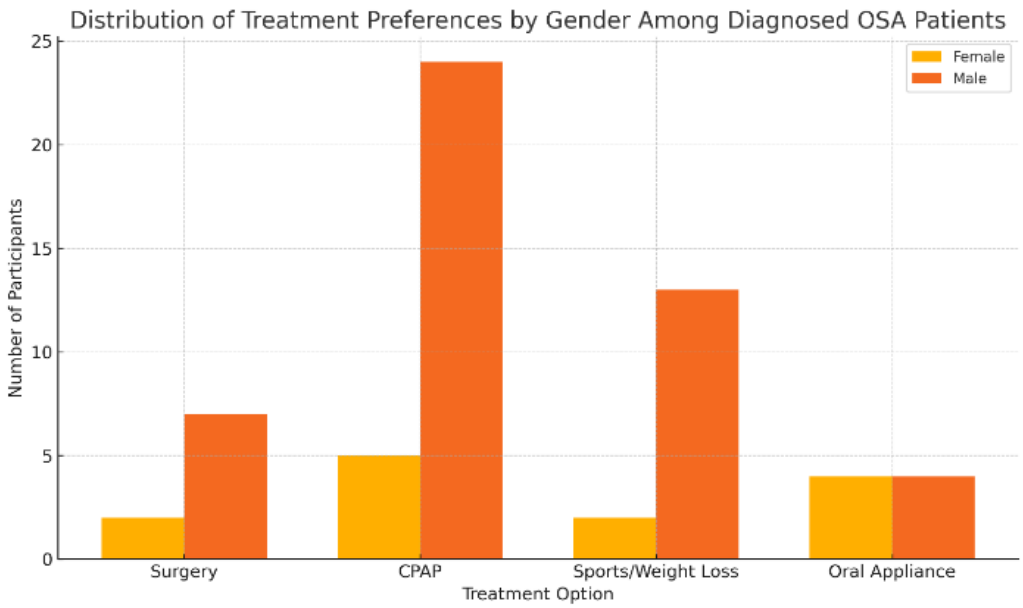

Figure 1. Distribution of specialists consulted for OSA diagnosis, stratified by gender.

Regarding first-contact healthcare preferences, Otolaryngologist were the most frequently selected providers (n=468), while 28.7% (n=296) reported being unsure about where to seek care. These findings are illustrated in Figure 2.

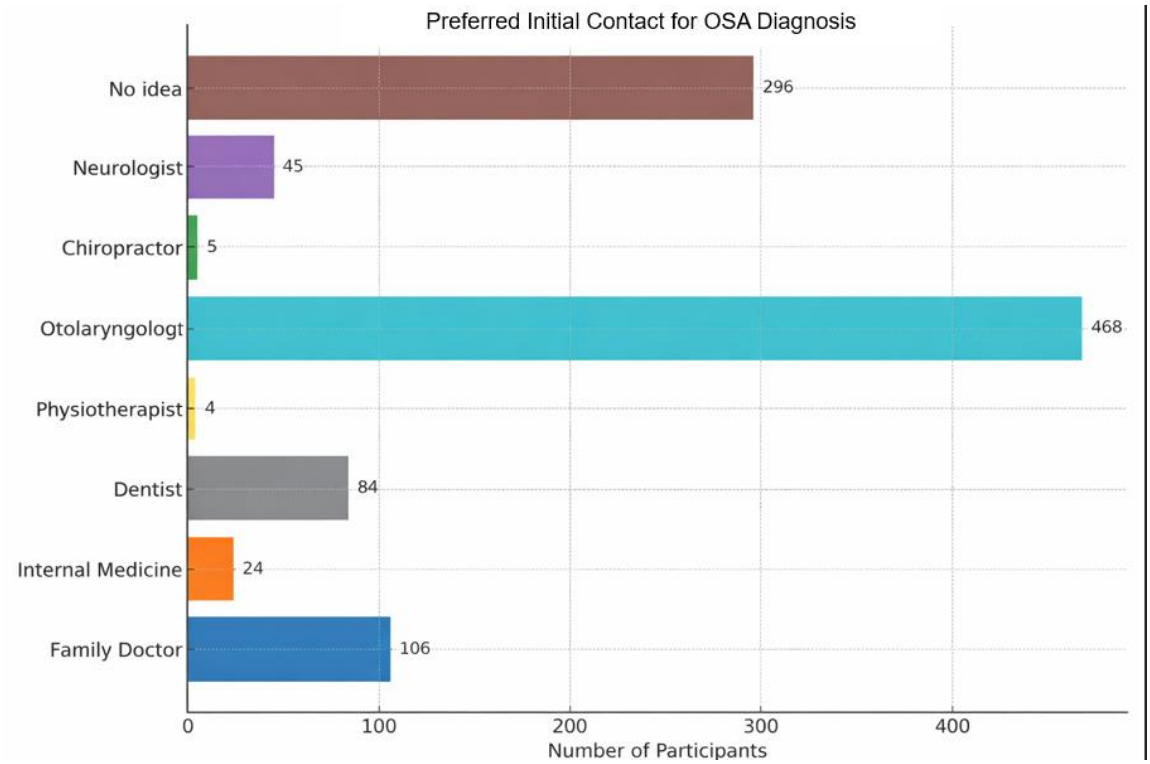

Figure 2. Preferred Initial Contact for OSA Diagnosis Among Participants.

DISCUSSION AND CONCLUSION

This study provides one of the most comprehensive assessments to date of public awareness and knowledge regarding obstructive sleep apnea (OSA) in Türkiye. Although more than half of respondents reported having heard of OSA, further analysis revealed a striking gap between superficial familiarity and accurate understanding of the condition's symptoms, risk factors, systemic consequences, and treatment modalities. When compared with the most recent international population-based surveys, our findings demonstrate several convergent global patterns as well as country-specific characteristics that have important implications for public health planning. The overall awareness rate in Türkiye (58.7%) is similar to recent data from the United States (50–60%) and Australia (46%).[14] However, it remains notably higher than awareness rates reported in China[19] (41%), Colombia[6] (24%) and Saudi Arabia[4] (27.8%, 2024 survey). Despite this moderate level of "hearing of OSA," deeper knowledge across all countries remains low. The 2024 China National Survey (n=18,000), one of the largest contemporary studies, reported that only 32% recognized typical symptoms, 29% understood cardiovascular risk, and 41% had never heard of OSA.[19] These findings closely parallel our results, where snoring was identified by only 29.7% and nearly one-third of respondents selected "no idea," underscoring that superficial awareness does not translate into clinical knowledge. The 2024 Colombian Study further demonstrated that only 24% of adults understood that untreated OSA could cause cardiometabolic complications.[6] Our data show an even greater knowledge deficit: hypertension—a well-established OSA comorbidity was identified by only 1.3% of participants. This rate is lower than those reported in China[19] (15%), France[11] (10%), and Saudi Arabia[4] (8%), suggesting an urgent need for cardiovascular risk education in Türkiye. The 2023 Australian Survey found higher awareness among women and individuals with university education.[14] This sociodemographic pattern was strongly replicated in our study, where female gender and higher education level were the strongest predictors of OSA knowledge. Similar effects were reported in the United States[7] and Canada[12], indicating that education-driven health disparities in sleep disorders are globally pervasive.

A Global Challenge Recognition of OSA-related symptoms was limited across all countries, including Türkiye. While snoring was the most widely identified symptom, only 1.1% recognized morning headaches and fewer than 2% identified cognitive or attention-related symptoms. These results align with the 2024 Chinese survey, which reported poor recognition of "silent" symptoms such as fatigue and inattention.[19] Recent studies show that approximately 50% of OSA patients present initially with neurocognitive or behavioral symptoms rather than respiratory signs.[2,3] However, public understanding of these manifestations remains extremely limited worldwide.

The gap is clinically important, as delayed recognition of atypical symptoms contributes to diagnostic delays of 2–4 years, as reported in Canadian and U.S. cohorts.[8]

Inadequate and Globally Consistent in Türkiye, airway narrowing and obesity were the most frequently identified risk factors, mirroring findings from France,[11] Australia[14] and the United States.[15] Yet cardiometabolic risks remain poorly understood everywhere. For instance: Only 12% of Australians recognized OSA's relationship with hypertension.[14] Only 14% of Colombians recognized cardiovascular complications.[6] Only 10% of French respondents identified OSA as a risk factor for metabolic disease.[11] The extremely low hypertension recognition rate in Türkiye (1.3%) places it among the lowest reported internationally. This is concerning given robust evidence linking untreated OSA to resistant hypertension, atrial fibrillation, stroke and myocardial infarction.[3,4] Diagnosis Pathways and First Consultation Preferences Interestingly, the preferred healthcare provider for initial evaluation Otolaryngologist differs markedly from countries where the primary care system plays a larger role. In Australia[14], 85.6% of respondents selected general practitioners as the first point of contact, while in Singapore and Canada, primary care physicians were also predominant.[5,12] Türkiye's preference for Otolaryngologist may reflect health system structure and patient expectations rather than knowledge. However, the relatively high proportion of participants selecting "no idea" suggests a need for clearer public guidance regarding diagnostic pathways. As highlighted by Lin et al.,[17] integrating primary care providers into early screening significantly improves timely diagnosis. Treatment Awareness and the Role of Dentistry Despite the growing global emphasis on multimodal OSA management, awareness of available treatment options remains limited. In our study, 64.5% of respondents reported "no idea" regarding oral appliance therapy (OAT). Similar low recognition has been documented in Australia[14] (18%), Canada[12] (15%), and China[19] (10%). This widespread lack of knowledge persists even though the American Academy of Sleep Medicine endorses OAT as an evidence-based alternative to CPAP in select patient groups.[21] The poor recognition of dentists and orthodontists as providers of OAT—only 12.9% in Türkiye—indicates a need for greater public and interprofessional awareness. Recent 2023–2024 multidisciplinary sleep medicine literature emphasizes that dentists play a critical role not only in delivering OAT but also in screening for anatomical risk factors such as retrognathia, macroglossia and high-arched palates.[18] Incorporating dentists more systematically into public sleep health strategies could substantially improve early recognition. Public Health Relevance and Global Implications Taken together, the evidence demonstrates that Türkiye shares the same fundamental public health burden seen in contemporary international studies: modest superficial awareness but profound deficits in accurate knowledge. Given the economic consequences of untreated OSA—estimated at over $30 billion annually in the United States improving awareness is not merely a clinical priority but a public health imperative.[22] Türkiye's demographic trends, including increasing obesity, sedentary lifestyles and rising cardiometabolic disease prevalence, suggest that the burden of undiagnosed OSA will continue to escalate. Strengths of This Study A major strength of this study is its large sample size (n=1032) and wide demographic coverage, which allowed meaningful comparisons across gender, age, income, and education levels. Unlike many international surveys, this study also included both online and in-person data collection, providing a more inclusive sample of individuals with limited digital access.

In conclusion, this nationwide study demonstrates that while general awareness of obstructive sleep apnea (OSA) exists in Türkiye, detailed understanding of its symptoms, systemic risks, diagnostic pathways, and treatment options remains insufficient. Several limitations should be noted: the use of convenience sampling and the high proportion of university graduates reduce generalizability; self-reported data may introduce recall and social desirability bias; single-choice items may underestimate broader knowledge; and excluding healthcare professionals prevented comparisons with medically trained groups. Nevertheless, the large, geographically diverse sample strengthens the validity of the findings. The results align with international evidence from China, Colombia, Australia, Saudi Arabia, Canada, and the United States, showing that OSA is widely recognized by name but poorly understood in depth. To address this gap, culturally tailored public-awareness campaigns, integration of sleep-health education into primary care, and enhanced multidisciplinary collaboration among otolaryngologists, dentists, orthodontists, pulmonologists, and sleep-medicine specialists are essential. Increasing public understanding of alternative therapies—particularly oral appliances—and implementing national strategies to promote early screening may improve early diagnosis, treatment adherence, and long-term public health outcomes in Türkiye.

Ethics Committee Approval: This research was approved by the Ordu University Non-Interventional Clinical Research Ethics Committee (Date: 12.05.2023, decision no: 147). The study was conducted in accordance with the ethical standards of the Declaration of Helsinki and relevant international guidelines. All participants provided electronic informed consent prior to inclusion in the survey.

Conflict of Interest: All authors declare that they have no conflicts of interest.
Authors' Contributions: Concept – SKB, TB; Supervision – SKB; Materials – TB; Data Collection and/or Processing – OD; Analysis and/or Interpretation – MT; Writing –TB
Peer-review: Externally peer-reviewed.

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