**Received:** 01 Dec 2023 | **Accepted:** 15 Apr 2024 **Genel Tıp Derg. Volume** 34/**Issue** 3 (June), 313-318
DOI: 10.54005/geneltip.1398846

**ORIGINAL ARTICLE**

# Determination of University Students' Preventive Attitudes for Lung Cancer and Healthy Life Awareness and The Influencing Factors

# Üniversite Öğrencilerinin Akciğer Kanserinden Korunmaya Yönelik Tutum ve Sağlıklı Yaşam Farkındalıkları ile Etkileyen Faktörlerin Belirlenmesi

[1]Melike Demir Doğan

[1]Department of Nursing, Gümüşhane University Faculty of Health Sciences, Gümüşhane, Türkiye

**Correspondence**

Department of Nursing, Gümüşhane University Faculty of Health Sciences, Gümüşhane, Türkiye.

**E-Mail:** melekdm@gmail.com

**How to cite ?**

Demir Doğan M. Determination of University Students' Preventive Attitudes for Lung Cancer and Healthy Life Awareness and The Influencing Factors. Genel Tıp Derg. 2024;34(3):313-8.

**ABSTRACT**

**Objective:** This study was conducted to determine the attitudes of university students towards lung cancer screening and healthy lifestyle and the factors affecting these attitudes.
**Material and Method:** In this descriptive cross-sectional study, data were collected from 295 students between September 2022 and February 2023 using personal information form, Healthy Living Awareness Scale, and Health Belief Model Scale for Lung Cancer and Screenings.
**Results:** It was observed that the perception of sensitivity and perception of obstacle subscales of the Health Belief Model Scale for Lung Cancer and Screenings were higher in males than females, and those with extended families had higher perception of violence and perception of obstacle than those with nuclear families. Perception of sensitivity and perception of violence decreased as general health status improved. Sensitivity perception was higher in smokers compared to non-smokers. Health motivation was higher in non-smokers than smokers. In addition, perception of barrier was higher in alcohol consumers compared to non-consumers. As the awareness of healthy living increased, the perception of violence and perception of barrier subscales of the health belief model of lung cancer orientation decreased.
**Conclusion:** Consequently, it was determined that the students perceived lung cancer screening as beneficial, but they were not sensitive enough to have screening. The barrier perception related to screening was low, the health motivation was high and the severity perception was moderate.

**Keywords:** Lung Cancer Awareness, Healthy Life Awareness, University Students, Health belief model

**ÖZ**

**Amaç:** Bu çalışma, üniversite öğrencilerinin akciğer kanseri taramalarına ve sağlıklı yaşam tarzına yönelik tutumlarını ve bu tutumları etkileyen faktörleri belirlemek amacıyla yapılmıştır.
**Gereç ve Yöntem:** Tanımlayıcı-Kesitsel nitelikteki bu çalışmada veriler Eylül 2022-Şubat 2023 tarihleri arasında 295 öğrenciden kişisel bilgi formu, Sağlıklı Yaşam Farkındalık Ölçeği, Akciğer Kanseri ve Taramalarına Yönelik Sağlık İnanç Modeli Ölçeği kullanılarak toplanmıştır.
**Bulgular:** Akciğer Kanseri ve Taramalarına Yönelik Sağlık İnanç Modeli Ölçeği duyarlılık algısı ve engel algısı alt ölçeklerinin erkeklerde kadınlara göre daha yüksek olduğu ve geniş aileye sahip olanların çekirdek aileye sahip olanlara göre daha yüksek şiddet algısı ve engel algısına sahip olduğu görülmüştür. Genel sağlık durumu iyileştikçe duyarlılık algısı ve şiddet algısı azalmıştır. Sigara içenlerde duyarlılık algısı içmeyenlere göre daha yüksektir. Sigara içmeyenlerin sağlık motivasyonu sigara içenlere göre daha yüksekti. Ayrıca, alkol tüketenlerde tüketmeyenlere kıyasla engel algısı daha yüksekti. Sağlıklı yaşam farkındalığı arttıkça Akciğer kanserine yönelim sağlık inanç modelinin şiddet algısı ve engel algısı alt ölçeklerinin azaldığı görülmüştür.
**Sonuç:** Öğrencilerin akciğer kanseri taramasını faydalı olarak algıladıkları, ancak tarama yaptırmak için yeterince duyarlı olmadıkları belirlenmiştir. Taramaya ilişkin engel algısı düşük, sağlık motivasyonu yüksek ve şiddet algısı orta düzeydedir.

**Anahtar Kelimeler:** Akciğer Kanseri Farkındalığı, Sağlıklı Yaşam Farkındalığı, Üniversite Öğrencileri, Sağlık inanç modeli

## Introduction

Lung cancer is one of the most common cancers and the leading cause of death worldwide (1,2). The incidence of lung cancer in Ireland is 1,407 in men and 1,157 in women. The mortality rate is 1,069 per year in men and 785 per year in women (3). In the UK, the5-year relative survival rate for early-stage lung cancer is 57%, but it is only 3% for patients diagnosed in advanced stage (4). In USA, the estimated incidence of lung cancer in 2023 is 12.2% for all cancers and mortality is 20.8% for all cancers; the 5-year survival rate between 2013 and 2019 is 25.4 (5). In Turkiye, lung cancer is seen in 55.6% of men and 10.9% of women (6). On average, 18% of lung cancer patients survive for five years (7). Fifty-seven percent of patients are diagnosed at a late stage, resulting in a higher mortality rate (2). One study reported that annual low-dose computed tomography (CT) scans for early diagnosis of lung cancer reduced mortality by 20% (8). Increased awareness of symptoms has been reported to increase the number of people with persistent coughs who seek primary health care and have a chest x-ray, leading to more lung cancer diagnoses (9,10). In another study, it was reported that 2.9% of high-risk smokers underwent lung CT scanning in 2011 and this rate increased to 5.8%

**Peer-Review:** Double anonymized - Two External
**Plagiarism Checks:** Yes - intihal.net
**Complaints:** geneltip@selcuk.edu.tr


Selcuk University Press
Genel Tıp Dergisi | e-ISSN: 2602-3741
https://dergipark.org.tr/tr/pub/geneltip
https://yayinevi.selcuk.edu.tr/

in 2015 (11). In other studies, the increase in the rate of lung CT scanning in high-risk smokers is estimated to be 1.9% (12,13). Therefore, early detection of signs and symptoms of lung cancer and increased public awareness are crucial to reduce cancer incidence and mortality in low- and middle-income countries (14).

Similar or lower levels of awareness of lung cancer risks and symptoms have been observed in the UK (15) and Canada (16). Studies have reported that public awareness of cancer symptoms has a positive effect on early detection rates of lung cancer (17,18). In order to prevent cancer, WHO has implemented action plans against the main preventable risk factors of cancer and recommended the implementation of early diagnosis and screening programs. With this action plan, it is predicted that new cancer cases, cancer cases diagnosed at advanced stages and deaths due to breast, cervical and colorectal cancers will decrease (19).

For lung cancer, which increases with age, it may be important to start screening at an early age. In the light of this information, this study was conducted to determine the awareness of university students representing the young population about lung cancer screening and healthy living and the factors affecting them.

## Materials and Methods

### Type of the Study and Sampling

This descriptive cross-sectional study was conducted to determine the awareness of university students about lung cancer screening and healthy living and the factors affecting them. A total of 295 undergraduate and associate degree students from a state university were included in the sample. The inclusion criteria were being a student of that university and agreeing to participate in the study. In the study, the data were collected from the students who agreed to participate in the study.

### Data Collection Tools

In the study, the data were collected between September 2022 and February 2023 using a personal information form, the Healthy Life Awareness Scale (HLAS) and Health Belief Model Scale for Lung Cancer and Screening (HBMSLCS). The data were collected with a questionnaire form created through the google form.

Personal Information Form: It is a questionnaire that was prepared by the researchers in accordance with the literature and includes questions about characteristics of the participants such as age, gender, and income level.

Healthy Life Awareness Scale (HLAS): This scale was developed by Özer and Yılmaz in 2020 and it consists of 15 items and four subscales. The change subscale consists of five items, the socialization subscale consists of three items, the responsibility subscale consists of three items and the nutrition subscale consists of three items. The minimum score that can be obtained from this scale is 15 and the maximum score is 75. A high score indicates a high awareness of healthy living. The Cronbach's alpha value was 0.813 (20). In this study, the Cronbach's alpha value of the scale was 0.972.

Health Belief Model Scale for Lung Cancer and Screening (HBMSLCS): This scale was developed by Demir Dogan and colleagues in 2021 and it consists of 30 items; the HBMSLCS consists of five subscales (perceived trust and benefits, perceived sensitivity, perceived barriers, perceived health motivation and perceived motivation). Items are scored on a 1 to 5 point scale (1-strongly disagree, 2disagree, 3-undecided, 4-agree, and 5-strongly agree). The minimum and maximum scores on this scale range from 10 to 50 for trust and perceived benefits, 5 to 25 for perceived susceptibility, 4 to 20 for perceived barriers, 6 to 30 for perceived health motivation, and 5 to 25 for perceived seriousness. Higher scores denote greater sensitivity and caring, perceived benefits and perceived barriers in perceived barriers. The Cronbach alpha value of the trust-benefit perception sub-dimension was 0.779, the Cronbach alpha value of the sensitivity perception sub-dimension was 0.833, the Cronbach alpha value of the barrier perception sub-dimension was 0.737, and the Cronbach alpha value of the sub-dimension of the perception of health motivation was 0.725. (21). In the present study, the perceived trust and benefit subscale was 0.864, the perceived sensitivity subscale was 0.914, the perceived barriers subscale was 0.840, the perceived health motivation subscale was 0.800, and the perceived seriousness subscale was 0.778.

### Statistical Analysis

Descriptive methods (mean, standard deviation, median, frequency and percentage) were applied to analyze the data. Mann-Whitney U-test, t-test, Pearson correlation analysis and Spearman correlation analysis were used to analyze the data.The results were expressed as 95% confidence interval and significance level as $p<0.05$.

### Ethical Considerations

Ethics committee approval was obtained from Gümüşhane University Scientific Research and Publication Ethics Committee (dated 27/04/2022 and numbered 2022/3) in order to conduct the study. Participants verbal informed consent was obtained. This study was conducted in accordance with the principles of the Declaration of Helsinki.

## Results

The mean age of the students was 22.08±5.56, and 69.2% of them were female. Majority of the students (92.9%) were single and 48.5% were the first-year students. While the rate of those who expressed their income as 'income equal to expenses' was 57.6%, 79% had a nuclear family type and 71.9% resided in a dormitory. It was determined that a great majority of the group did not have any chronic disease (92.2%), did not drink alcohol (95.9%), did not smoke (79.3%), and 56.9% defined their general health as good. A great majority of the students did not have a cancer patient in their first-degree relatives (85.1%) (Table 1).

**Table 1:** Socio-demographic characteristics (n=295)

| | n | % |
|---|---|---|
| Gender | | |
| Female | 204 | 69,2 |
| Male | 91 | 30,8 |
| Marital status | | |
| Married | 21 | 7,1 |
| Single | 274 | 92,9 |
| Family type | | |
| Nuclear family | 233 | 79,0 |
| Extended family | 62 | 21,0 |
| Grade | | |
| 1 | 143 | 48,5 |
| 2 | 67 | 22,7 |
| 3 | 32 | 10,8 |
| 4 | 53 | 18,0 |
| Income status | | |
| Income less than expenses | 96 | 32,5 |
| Income equals expense | 170 | 57,6 |
| Income more than expenses | 29 | 9,8 |
| Current residency | | |
| With family | 60 | 20,3 |
| in the dormitory | 212 | 71,9 |
| At home with friends | 16 | 5,4 |
| alone at home | 7 | 2,4 |
| General health Status | | |
| bad level | 7 | 2,4 |
| Medium-level | 107 | 36,3 |
| good level | 168 | 56,9 |
| Having any chronic disease | | |
| Yes | 23 | 7,8 |
| No | 272 | 92,2 |
| Smoking status | | |
| Yes | 61 | 20,7 |
| No | 234 | 79,3 |
| Alcohol intake | | |
| Yes | 12 | 4,1 |
| No | 283 | 95,9 |
| Family cancer history | | |
| Yes | 44 | 14,9 |
| No | 251 | 85,1 |

As a result of the statistical analysis, it was determined that there was a positive significant correlation between general health status and income status. The participants' general health improved as their income level increased (p=0.001) (Table 3).

Total mean scores of the subscales of the HBMSLCS were 43.56±4.98 for the trust-benefit perception subscale, 11.81±5.75 for the sensitivity perception subscale, 10.13±4.60 for the barrier perception subscale, 21.48±3.91 for the health motivation subscale, and 17.49±4.57 for the severity perception subscale.

As a result of the statistical analysis, it was determined that there was a significant difference between gender and the sensitivity perception and barrier perception subscales of the HBMSLCS. Male participants' sensitivity perception (p=0.009) and barrier perception were higher compared to their female counterparts (p=0.001). The severity perception was higher in those with chronic disease than those without chronic disease (p=0.004). There was a significant correlation between family type and the barrier and severity perception. The barrier perception was higher in those with extended families than those with nuclear families (p=0.014). Those with extended families had a higher severity perception than those with nuclear families (p=0.005) (Table 2).

It was determined that the sensitivity perception was higher in smokers than non-smokers (p=0.033). Non-smokers had higher health motivation than their smoker counterparts (p<0.001). In addition, alcohol consumers had a higher barrier perception than those who did not consume alcohol (p=0.014) (Table 2).

As a result of the statistical analysis, it was determined that there was a negative significant correlation between the general health status and the sensitivity perception and severity perception. As the general health status improved, the sensitivity perception (p=0.009) and the severity perception (p=0.013) decreased (Table 3).

The total mean score of the HLAS was 49.41±17.33. Total mean scores of its subscales were 17.39±6.71 for the change subscale, 12.92±4.72 for the socialization subscale, 10.14±3.86 for the responsibility subscale, and 8.94±3.58 for the nutrition subscale.

As a result of the statistical analysis, it was found that there was a negative significant correlation between the total mean score of the HLAS and the barier perception and the severity perception of the HBMSLCS. It was observed that the barrier perception (p<0.001) and the severity perception (p=0.014) decreased as the healthy life awareness increased. In addition, as the university years increased, the healthy life awareness increased, as well (p<0.001) (Table 3).

It was found that there was a negative significant correlation between the change subscale mean score of the healthy life awareness scale and the sensitivity perception, barrier perception, severity perception and health motivation subscales of HBMSLCS. As change subscale mean score increased, the sensitivity perception (p=0.020), the barrier perception (p<0.001), the severity perception (p=0.021) and the health motivation (p=0.017) decreased. In addition, the change subscale mean score increased as the university years increased (p<0.001) (Table 3).

It was determined that as the mean score of the socialization subscale of the HLAS increased, the barrier perception decreased (p<0.001). The socialization

**Table 2:** Variables Affecting the Dimensions of the Health Belief Model Scale for Prevention from Lung Cancer

| | | Gender | | Presence Of Chronic Disease | | Family Type | | Cigarette Use | | Alcohol Use | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Female | Male | Yes | No | Nuclear Family | Extended Family | Yes | No | Yes | No |
| Trust-Benefit Perception | Mean ±sd | 43,73±4,35 | 43,19±6,18 | 43,52±3,17 | 43,57±5,11 | 43,63±4,85 | 43,32±5,50 | 43,85±4,79 | 43,49±5,04 | 42,16±5,85 | 43,62±4,95 |
| | p | 0,393* | | 0,962* | | 0,662* | | 0,620* | | 0,321* | |
| Sensitivity Perception | Mean ±sd | 11,13±5,30 | 13,34±6,43 | 12,91±5,54 | 11,72±5,77 | 11,38±5,37 | 13,43±6,79 | 13,21±5,10 | 11,44±5,86 | 14,91±6,06 | 11,68±5,71 |
| | p | 0,009** | | 0,341* | | 0,069** | | 0,033* | | 0,056* | |
| Barrier Perception | Mean ±sd | 9,52±4,30 | 11,51±4,96 | 10,34±4,44 | 10,12±4,62 | 9,75±4,42 | 11,56±5,01 | 10,13±4,41 | 10,14±4,66 | 13,33±4,09 | 10,00±4,58 |
| | p | 0,001** | | 0,821* | | 0,014** | | 0,988* | | 0,014* | |
| Health Motivation Perception | Mean ±sd | 21,25±3,81 | 22,00±4,12 | 21,08±4,18 | 21,51±3,90 | 21,43±3,80 | 21,64±4,34 | 19,73±4,29 | 21,93±3,69 | 22,16±5,00 | 21,45±3,87 |
| | p | 0,129* | | 0,616* | | 0,712* | | <0,001* | | 0,537* | |
| Motivation Perception | Mean ±sd | 17,36±4,71 | 17,78±4,26 | 20,08±3,47 | 17,27±4,59 | 17,14±4,54 | 18,79±4,52 | 17,54±4,18 | 17,47±4,68 | 17,66±4,47 | 17,48±4,59 |
| | p | 0,470* | | 0,004* | | 0,005** | | 0,925* | | 0,893* | |

* t testi, **Mann-Whitney U

**Table 3:** Correlation between the Dimensions of the Health Belief Model Scale for Prevention from Lung Cancer, the Healthy Life Awareness Scale and its sub-dimensions, and some variables

| | Trust-Benefit Perception | | Sensitivity Perception | | Barrier Perception | | Health Motivation Perception | | Motivation Perception | | Income Status | | Students grade | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | r | p | r | p | r | p | r | p | r | p | r | p | r | p |
| HLAS Total | 0,032 | 0,588* | -0,113 | 0,054* | -0,267 | <0,001* | -0,094 | 0,109* | -0,143 | 0,014* | 0,014 | 0,810** | 0,245 | <0,001** |
| HLAS Change | 0,007 | 0,910* | -0,136 | 0,020* | -0,261 | <0,001* | -0,139 | 0,017* | -0,135 | 0,021* | -0,006 | 0,925** | 0,259 | <0,001** |
| HLAS Socialization | 0,068 | 0,246* | -0,079 | 0,174* | -0,227 | <0,001* | -0,043 | 0,462* | -0,043 | 0,462* | 0,037 | 0,527** | 0,213 | <0,001** |
| HLAS Responsibility | 0,053 | 0,366* | -0,105 | 0,072* | -0,272 | <0,001* | -0,078 | 0,184* | -0,124 | 0,034* | 0,003 | 0,961** | 0,232 | <0,001** |
| HLAS Nutrition | -0,124 | 0,034* | -0,071 | 0,222* | -0,205 | <0,001* | -0,051 | 0,384* | -0,141 | 0,016* | 0,026 | 0,659** | 0,166 | 0,004** |
| General Health Status | -0,024 | 0,680** | -0,151 | 0,009** | -0,103 | 0,076** | 0,040 | 0,494** | -0,144 | 0,013** | 0,197 | 0,001** | 0,035 | 0,549** |

*Pearson Correlation, ** Spearman's Correlation

subscale mean score also increased as the university years increased (p<0.001). It was found that there was a negative significant correlation between the mean score of the responsibility subscale of the HLAS and the barrier perception and the severity perception. As the mean score of the socialization subscale increased, the barrier perception (p<0.001) and the severity perception (p=0.013) decreased. The mean score of the responsibility subscale (p<0.001) and the nutrition subscale (p=0.004) also increased as the university years increased (Table 3).

It was found that there was a negative significant correlation between the nutrition subscale mean score of the HLAS and the trust-benefit perception, the barrier perception and the severity perception in the HBMSLCS. As the nutrition subscale mean score increased, the trust-benefit perception (p=0.034), the barrier perception (p<0.001) and the severity perception (p=0.016) decreased (Table 3).

## Discussion

In this study, which was conducted to determine university students' awareness of lung cancer screening, it was found that the perception of trust-benefit of the lung cancer belief model was high, so the screening was perceived as beneficial. It was determined that the total mean score of the sensitivity perception subscale was low, so there was not enough sensitivity about screening. The total mean score of the barrier perception subscale was low, so the barrier perception related to screening was low. The health motivation was high and the severity perception was moderate. A study conducted in Estonia reported a moderate level of awareness of lung cancer risks and symptoms (22). It was observed that level of awareness of lung cancer risks and symptoms is similar between or lower in England (15) or Canada (16). In other studies, it was determined that the level of knowledge about lung cancer symptoms was insufficient (15,23,24). Studies have shown the positive effect of raising public awareness about cancer symptoms on the early detection rates of lung cancer (17,18). No previous study of the sample group of our study was found. However, when we look at the studies conducted with lung cancer symptom awareness, it is thought that the results are similar.

In the present study, it was determined that sensitivity and barrier perception of the lung cancer belief model were higher in men than in women. Those with extended families had higher barrier and severity perceptions than those with nuclear families. The sensitivity perception and the severity perception decreased as the general health status improved. An Australian study reported that women were better

aware of lung cancer symptoms (25). Likewise, a study reported that women were better aware of lung cancer symptoms (26). In another study, it was stated that lung cancer awareness of women and men was similar (27). The differences in the results of the study may be attributed to the differences in the sample groups.

In the present study, it was determined that the sensitivity perception was higher in smokers compared to their non-smoker counterparts. Non-smokers had higher health motivation than smokers. Moreover, the barrier perception was higher in alcohol cunsumers compared to those who did not consume alcohol. In a study, it was found that most of the smokers did not have lung cancer screening, and although the screening rates increased, this rate did not increase among smokers (28). Another study revealed that most of high-risk smokers have never heard of or had screening for lung cancer, nor were they aware of the existence of a screening test for lung cancer (29). Studies on attitudes towards lung cancer screening have shown that smokers place less value on the benefits of lung cancer screening. It has also been reported that stigma is a barrier to participation in screening (30,31). Furthermore, emotional barriers such as fear of being diagnosed with lung cancer (32) and the belief that the lungs are an incurable organ (31,33) have been reported to reduce participation in lung cancer screenings.

It was observed that as the healthy life awareness increased, the barrier perception and severity perception subscales of the lung cancer belief model decreased. As the awareness of change, which is the subscale of the healthy life awareness scale, increased, the subscales of the lung cancer awareness scale, the barrier perception, seriousness perception, and health motivation subscales of the lung cancer belief model decreased. As the mean score of the socialization subscale of the healthy life awareness scale increased, the barrier perception and seriousness perception subscales of the lung cancer belief model decreased. Likewise, as the mean score of the nutrition subscale of the healthy living awareness scale increased, the trust-benefit perception, barrier perception, and seriousness perception subscales of the lung cancer belief model decreased. In a study, it was determined that as the healthy life awareness increased, the positive attitude towards cancer screening increased. Similarly, it has been reported that as the awareness of change, socialization, responsibility, and nutrition subscales of Healthy Life Awareness Scale increase, the positive attitude towards cancer screening increases (34). Similarly, in another study, a significant difference was reported between breast self-examination and health perception score (34). In the light of these results, it can be asserted that high healthy life awareness has a positive effect on lung cancer awareness.

## Conclusion

• The results showed that students perceived lung cancer screening as beneficial, but were not sufficiently sensitized to be screened.

• Perceptions of barriers to screening were low, health motivation was high, and perceptions of severity were moderate.

• Perceptions of susceptibility and barriers to lung cancer are higher in men than in women, and perceptions of susceptibility and severity decrease as general health status improves.

• As healthy lifestyle awareness increased, perceptions of barriers and severity towards lung cancer screening decreased.

• It is recommended that studies with larger sampless hould be conducted to increase lung cancer awareness and lung cancer awareness campaigns should be emphasized.

## Limitations

The results obtained from the research are limited to the students studying at Gümüşhane University.

## Acknowledgment

We would like to thank all the students who supported the study with their participation.

## Ethical Aspects of the Study/Ethics Committee Approval:

Ethics committee approval was obtained from Gümüşhane University Scientific Research and Publication Ethics Committee for the conduct of the study.

## Conflict of interest:

The authors have no vested interest.

## Financial Support/Financial Disclosure:

No financial support was received for the study.

## References

1.Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2018;68(6):394–424.

2.Siegel RL, Miller KD, Jemal A. Cancer statistics, 2018. CA Cancer J. Clin. 2018;68 (1):7–30.

3.National Cancer Registry Ireland, 2018. Cancer factsheet – lung. https://www.ncri.ie/sites/ncri/files/factsheets/Factsheet%20lung.pdf. (Accessed 1 September 2020).

4.Cancer Research Uk, 2020. Lung cancer statistics. https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer type/lung-cancer#heading-Two. (Accessed 1 September 2020).

5.National Cancer Institute. Cancer stat facts: lung and bronchus cancer. Website. https://seer.cancer.gov/statfacts/html/lungb.html. Accessed May 31, 2023.

6.Turkey cancer statistics, 2018. Türkiye kanser istatistikleri, T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü (Republic of Turkey Ministry of Health). chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://hsgm.saglik.gov.tr/depo/birimler/kanser-db/Dokumanlar/Istatistikler/Kanser_Rapor_2018.pdf (Accessed 13 February 2024).

7.Jemal A, Ward EM, Johnson CJ, et al. Annual report to the nation on the status of cancer, 1975-2014, featuring survival. J. Natl. Cancer

Inst. 2017;109 (9).

8.Aberle DR, Adams AM, Berg CD, et al. Reduced lung-cancer mortality with low-dose computed tomographic screening. N. Engl. J. Med. 2011; 365 (5): 395–409.

9.Suckling R. Early Lung Cancer Intervention in Doncaster: Doncaster 3 Week Cough 'How To' Guide. Cancer Research UK. 2010. http://info.cancerresearchuk.org/ prod_consump/groups/cr_common/@nre/@hea/documents/generalcontent/cr_042781.pdf (accessed 5 Mar 2012).

10.Tod AM, Suckling R, Rogers T, et al. Early intervention in lung cancer within Doncaster (ElCiD). Lung Cancer 2008;60:S17.

11.Huo J, Shen C, Volk RJ, Shih YT. Use of CT and chest radiography for lung cancer screening before and after publication of screening guidelines: intended and unintended uptake. JAMA Intern. Med. 2017; 177 (3): 439–441.

12.Jemal A, Fedewa SA. Lung Cancer screening with low-dose computed tomography in the United States-2010 to 2015. JAMA Oncol. 2017; 3 (9): 1278–1281.

13.Pham D, Bhandari S, Oechsli M, Pinkston CM, Kloecker GH. Lung cancer screening rates: data from the lung cancer screening registry. Proc. Am. Soc. Clin. Oncol. 2018; 36 (15_suppl): 6504.

14.Torre LA, Bray F, Siegel RL, Ferlay J, Lortet-Tieulent J, Jemal A. Global cancer statistics, 2012. CA Cancer J Clin. 2015;65(2):87–108.

15.Simon AE, Juszczyk D, Smyth N, Power E, Hiom S, Peake MD and Wardle J. Knowledge of Lung Cancer Symptoms and Risk Factors in the UK: Development of a Measure and Results from a Population-Based Survey. Thorax 2012; 67: 426- 432. https://doi.org/10.1136/thoraxjnl-2011-200898

16.Walker SL, Saltman DL, Colucci R and Martin L. Awareness of Risk Factors among Persons at Risk for Lung Cancer, Chronic Obstructive Pulmonary Disease and Sleep Apnea: A Canadian Population-Based Study. Canadian Respiratory Journal 2010; 17: 287-294. https://doi.org/10.1155/2010/426563

17.Ironmonger L, Ohuma E, Ormiston-Smith N, Gildea C, Thomson CS, Peake MD. An evaluation of the impact of large-scale interventions to raise public awareness of a lung cancer symptom. Br J Cancer. 2015;112(1):207–16.

18.Power E, Wardle J. Change in public awareness of symptoms and perceived barriers to seeing a doctor following Be Clear on Cancer campaigns in England. Br J Cancer. 2015;112(Suppl 1):S22–6.

19.World Health Organization. Cancer Fact Sheet March, 2021. https://www.who.int/news-room/fact-sheets/detail/cancer Erişim Tarihi: 06.08.2021

20.Özer E, Yılmaz N. Healthy Life Awareness: A Scale Development Study. J Tradit Med Complement Ther. 2020;3(1):47-60. doi:10.5336/jtracom.2019-72138

21.Demir Doğan M, Sül A, Aynacı G, Çürük H and Yeşilyurt S. Development study of health belief model scale for Lung Cancer and its Screening. Int J Cancer Res Ther, 2021; 6 (2):12-17.

22.Hanson HM, Raag M, Adrat M and Laisaar T. Awareness of Lung Cancer Symptoms and Risk Factors in General Population. Open Journal of Respiratory Diseases 2017;7: 1-11. https://doi.org/10.4236/ojrd.2017.71001

23.Saab MM, Noonan B, Kilty C, FitzGerald S, Collins A, Lyng Á, et al. Awareness and help-seeking for early signs and symptoms of lung cancer: A qualitative study with high-risk individuals. Eur J Oncol Nurs. 2021;50:101880.

24.Desalu OO, Fawibe AE, Sanya EO, Ojuawo OB, Aladesanmi AO, Salami AK. Lung cancer awareness and anticipated delay before seeking medical help in the middle-belt population of Nigeria. Int J Tuberc Lung Dis. 2016;20(4):560–6

25.Crane M, Scott N, O'Hara BJ, Aranda S, Lafontaine M, Stacey I, et al. Knowledge of the signs and symptoms and risk factors of lung cancer in Australia: mixed methods study. BMC Public Health. 2016;16:508.

26.Elshami M, Abukmail H, Aqel W, et al. Awareness of Palestinians about lung cancer symptoms: a national cross-sectional study. BMC Pulm Med 2022; 22: 135. https://doi.org/10.1186/s12890-022-01923-1

27.Moffat J, Bentley A, Ironmonger L, Boughey A, Radford G, Duffy S. The impact of national cancer awareness campaigns for bowel and lung cancer symptoms on sociodemographic inequalities in immediate key symptom awareness and GP attendances. Br J Cancer. 2015 Mar 31;112 Suppl 1(Suppl 1):S14-21. doi: 10.1038/bjc.2015.31.

28.Erica T Warner, Christopher S Lathan. Race and sex differences in patient provider communication and awareness of lung cancer screening in the health information National Trends Survey, 2013–2017, Preventive Medicine 2019;124: 84-90, https://doi.org/10.1016/j.ypmed.2019.05.001.

29.Simmons VN, Gray JE, Schabath MB, Wilson LE, Quinn GP. High-risk community and primary care providers knowledge about and barriers to low-dose computed topography lung cancer screening. Lung Cancer 2017;106: 42–49.

30.Patel D, Akporobaro A, Chinyanganya N, Hackshaw A, Seale C, Spiro SG. Attitudes to participation in a lung cancer screening trial: a qualitative study. Thorax. 2012;67:418□25.

31.Quaife S, Marlow LAV, McEwen A, Janes S, Wardle J. Attitudes towards lung cancer screening in socioeconomically deprived and heavy smoking communities: informing screening communication. Health Expect. 2016;. https://doi.org/10.1111/hex.12481.

32.Ali N, Lifford K, Carter B, et al. Barriers to uptake among high-risk individuals declining participation in lung cancer screening: a mixed methods analysis of the UK Lung Cancer Screening (UKLS) trial. BMJ Open. 2015;5(7):e008254.

33.Silvestri GA, Nietert PJ, Zoller J, Carter C, Bradford D. Attitudes towards screening for lung cancer among smokers and their non-smoking counterparts. Thorax. 2007;62:126□130.

34.Demir Doğan, M., Kurt, S. & Ertin, B. The correlation between individuals' attitudes toward cancer screening, cancer information overload, and healthy life awareness: a cross-sectional study. J Public Health (Berl.) (2023). https://doi.org/10.1007/s10389-023-01852-1

35.Kızılırmak A, Kartal B, Calpbinici P. Investigation of the relation between doing breast self-examination (BSE) of the students and perception of health. Asian Pac J Health Sci 2017; 4(2):191–197. https://doi.org/10.21276/apjhs.2017.4.2.31