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# Perception Of Health, Health Literacy Levels Of Farm Labourers and Related Factors*

## Tarım İşçilerinin Sağlık Algıları, Sağlık Okuryazarlığı Düzeyleri ve İlişkili Faktörler

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## Abstract

**Objective:** This is a cross sectional study conducted to determine living conditions, perception of health, health literacy levels of farm labourers and related factors.

**Material and Method:** The study population consisted of 915 people and the study sample consisted of 269 people. Stratified random sampling method was used in the study. The data of the study were obtained through home visits in a village where agricultural workers live. A questionnaire form, the Perception of Health Scale and European Literacy Scale were used as data collection tools. In the study; ethics committee permission, institutional permission, and written consent from the participants were obtained. Data obtained in the study was evaluated in the SPSS 21.0 program and in the electronic environment.

**Result:** According to the results of the study; 42.4% of the participants were female, 57.6% were male and the mean age was 50.89±13.88. The Health Perception Scale score of those who use the stove for heating was found to be lower. Those who drank tap water, did not wear overalls and did not take a shower after work had a lower European Literacy Scale score ($p<0.05$).

**Conclusion:** At the end of the study, it was found that there is a relationship between the way of warming up and the perception of health; drinking water preference, wearing overalls, taking a shower and health literacy. In this context, it is recommended to carry out information and awareness activities for agricultural workers.

**Keywords:** Agriculture, Health, Health Literacy, Workers, Perception

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**Öz**

**Amaç:** Bu, tarım işçilerinin yaşam koşulları, sağlık algısı, sağlık okuryazarlığı düzeyleri ve ilgili faktörleri belirlemek amacıyla yapılmış kesitsel bir çalışmadır.

**Gereç ve Yöntem:** Araştırma evreni 915 kişiden, örneklemi ise 269 kişiden oluşmaktadır. Çalışmada tabakalı rastgele örnekleme yöntemi kullanılmıştır. Araştırmanın verileri tarım işçilerinin yaşadığı bir köyde ev ziyareti yoluyla elde edilmiştir. Veri toplama araçları olarak anket formu, Sağlık Algısı Ölçeği ve Avrupa Okuryazarlık Ölçeği kullanılmıştır. Araştırmada etik kurul izni, kurum izni ve katılımcılardan yazılı onam alınmıştır. Çalışmada elde edilen veriler SPSS 21.0 programında ve elektronik ortamda değerlendirilmiştir.

**Bulgular:** Çalışmanın sonuçlarına göre; Katılımcıların %42.4'ü kadın, %57.6'sı erkek ve yaş ortalaması 50.89±13.88'dir. Isınmak için soba kullananların Sağlık Algısı Ölçeği puanı; musluk suyu içenlerin, tulum giymeyenlerin ve işten sonra duş almayanların Avrupa Okuryazarlık Ölçeği puanı daha düşük bulundu ($p<0.05$).

**Sonuç:** Çalışmanın sonunda, ısınma şekli ile sağlık algısı arasında; içme suyu tercihi, tulum giyme ve duş alma ile sağlık okuryazarlığı ilişki olduğu bulundu. Bu kapsamda tarım işçilerine yönelik bilgilendirme ve bilinçlendirme çalışmaları yapılması önerilmektedir.

**Anahtar kelimeler:** Tarım, Sağlık, Sağlık Okuryazarlığı, İşçiler, Algı,

## INTRODUCTION

Agriculture is an important industry because it provides employment to a significant percentage of the population, agricultural products feed people and it is a raw material resource for agriculture based industries (Burdur, 2018). 2019 Turkey is at the top of the list with 18.2% for the percentage of people working in agriculture industry in the whole population in a country which is followed by Mexico with 12.6%, Greece with 12% and Poland 9.2%. The lowest percentages are in Israel with 0.9%, Belgium and the UK with 1 % and Canada with 1.5% (TÜİK, 2020).

Agricultural industry contains many health risks due to working conditions and many farm labourers are at risk of occupational accidents and illnesses and some even lose their life. One thousand nine hundred twenty three workers died in occupational accidents in 2018 and 1.736 workers died in 2019 and 45% of these workers who lost their lives were farm labourers. In March 2020 113 workers died in occupational accidents and when these accidents were classified according to industries, agriculture was at the top of the list with 19% (http://www.guvenlicalisma.org).In addition to occupational accidents, due to the risks in agriculture, respiratory diseases, dermatological problems, musculoskeletal diseases, psycho-social disorders, cancers and occupational illnesses are also seen in farm labourers. Among causes of occupational illnesses, 18% of the occupational illnesses are caused by physical factors, 13% by organic dusts, 57% by other causative agents (Adana ve ark, 2020; Aktuna, 2017;Serin & Çuhadar, 2015).

The perception of health, which is based on individuals' assessment of their own health status in general and allows them to evaluate their biological, mental and social status, is often low in disadvantaged groups such as agricultural workers and can be affected by many situations. Even living in either urban or rural areas can also have an effect on the perception of health (Lee et al., 2015). Being aware, understanding and fulfilling personal responsibilities is very important in perception of health. In order to develop a perception of health, a person's feelings, thoughts, prejudices and expectations about his or her health status should be identified; communication between the healthcare worker and the person should be well-established and the person should be able to give clear and correct answers to health related questions (Özdemir, 2018).

Health literacy is important for all segments of society. According to Sorensen et al., health literacy is related with literacy and refers to the knowledge, motivation and skills of an individual to access, understand, interpret and implement health related information in order preserve, maintain and improve quality of life and make decisions and make judgments on a daily basis to improve health. This description includes public health and in addition to the three domains of health i.e. healthcare services, protection from diseases and improvement of health, it also includes individual approach on being sick, being at risk and being healthy (Sorensen et al., 2010).

Farm labourers are exposed to many chemical agents more than other groups in the society. Working outdoors, varying working hours and periods depending on seasonal conditions, unhealthy working conditions cause various health problems in farm labourers (Adana ve ark, 2020). It is known that agricultural workers are more risky in terms of health compared to the normal population. However, there is no study examining their health literacy, health perception and related personal factors.

This study was conducted to determine living conditions, perception of health, health literacy levels of farm labourers and related factors. Public health nursing is the key person in the delivery of health services. It has a serious role in the delivery of appropriate health

services in line with the needs and demands of the individual, families and society. It is important for the service to be provided to know the living conditions of people in a society, their perception of their health status and their level of health literacy. Research on individuals living in rural areas as a neglected group is limited. In this respect, it is thought that this study will contribute to the knowledge of public health nursing, and determining the risk levels of agricultural workers will guide interventional public health nursing studies.

## MATERIAL AND METHOD

**Type of Study:** This is a cross-sectional study.

**Research Questions**

1. Is there a difference between living conditions and perception of health of farm labourers?

2. Is there a difference between living conditions and health literacy of farm labourers?

3. Is there a relationship between perception of health and health literacy of farm labourers?

**Sample Size and Sampling:** There were 1195 people, 507 of whom were women and 688 were men in Baltaköy neighbourhood in 2018.According to the census in 2017, 76.5% of Aydın population were over 18 years old. Therefore the study population consisted of people who were older than 18 years old living in Baltaköy (n=915). The power was set at 0.80 in the G-power program for power analysis of the sample; the confidence interval was 0.05; df:10 and the effect size (medium) was set at 0.25 (Türkal Gün & Adana, 2019; Kuzu & Ergöl, 2019) which resulted in 115 male and 114 female participants (269). A full list of people who comprise the study population was created, and stratified random sampling method was used (stratified according to gender). The study was conducted with home visits between the dates of May 2019 and September 2020. The data were collected by face-to-face interview method in the living areas of the workers (home) and the interviews lasted about 15 minutes.

Inclusion criteria were being a farm labourer, older than 18 years old, and volunteering to participate in the study and having no hearing impairment. People who were living in villages but did not work in agriculture were excluded from this study. All of the data obtained in the research are included in the statistics.

**Data Collection Tools:** Questionnaire Form, Perception of Health Scale (PHS) and Health Literacy Questionnaire-TR (ASOY-TR) were used in the study.

Questionnaire Form: In the questionnaire form developed by the researchers in accordance with the literature and based on expert opinions (1 assistant professor, 2 lecturers with PhD) there are 8 questions about personal information, 7 questions about living conditions, 8 questions about work conditions and 4 questions about health which makes a total of 27 questions.

Perception of Health Scale (PHS): English original of the perception of health scale which is used to assess perception of health was developed by Diamond et al. in 2007 and Turkish reliability and validity study of the Turkish version was done by Kadıoğlu and Yıldız (2012). This is a 5 point Likert type scale with 15 items and four factors. There are four factors in the scale: "Centre of Control", "Self-Awareness", "Certainty", and "Importance of Health". Minimum score is 15 and maximum score is 75 in the scale. The Cronbach Alpha coefficient of the scale was evaluated in two different groups; and it was found to be 0.70 and 0.77

(Diamond et al., 2007; Kadıoğlu & Yıldızoğlu, 2012). In our study, the alpha coefficient of the Health Perception Scale was found to be 0.72.

Health Literacy Questionnaire ASOY-TR: Original name; Health Literacy Questionnaire ASOY-TR is the Turkish adaptation of The European Health Literacy Survey (HLS-EU). The scale was developed by the European Health Literacy Consortium. It includes a conceptual framework, three health related dimensions (treatment, protection from diseases and improvement of health) and information about health related decision making and practices (access, understand, decide and implement). The total score in the scale ranges between 47-188. In the scale, a score between 0-25 points refers to insufficient health literacy; 26-33 refers to limited health literacy, a score between 34-42 refers to sufficient health literacy and a score between 43-50 refers to excellent health literacy The alpha coefficient of the scale is 0.95 (Abacıgil ve ark, 2016). In this study, the alpha coefficient of the Health Literacy Questionnaire was found to be 0.90.

**Ethical Considerations:** This study was approved by the Non-interventional Clinical Research Ethics Committee of the Nursing Department in Aydın Adnan Menderes University (date: 12.06.2019 and 2019/100 no:72759255-100 Meeting number:62) and necessary permits were obtained from the governor's office and from the local authority of the village where the study was done. Participation in the study was voluntary and written consents were obtained from the farm labourers who agreed to participate in the study. Permissions to use ASOY-TR Scale and PHS scale in our study were obtained via mail. This study is a part of the post-graduate thesis with the project number HF-19009 supported by the Scientific Research Projects Unit of Aydın Adnan Menderes University in Turkey.

**Data Assessment:** Data obtained in the study was assessed in the SPSS 21.0 program and in the electronic environment. To analyse the data, descriptive statistical analyses (arithmetic mean, standard deviation, frequency, percentage), t test, One Way Anova Test, and correlation test were used ($p<0.05$). Independent variable of the study was demographics of the participants and dependent variable is the mean score in the European Health Literacy Survey-TR (ASOY-TR) and Perception of Health Scale (PHS). There was a risk of volunteer bias in this study; however, the fact that all participants included in the sample were volunteers reduced this risk.

In the normal distribution analysis; mean score, minimum and maximum point range, Gauss curve was analyzed and additionally Kolmogorov-Simirnov test significance level was calculated ($p<0.05$). Data is normally distributed.

## RESULTS

According to the results of the study; 42.4% of the participants were female (n=114) 57.6% were male )(n=155) and the mean age was 50.89±13.88. Eighty two point nine percent of the participants were married; 59.8% (n=161) were elementary school graduate; 61.7% (n=193) reported that they had a balanced budget and 81.8% (n=220) had some form of social security; 86.6% (n=233) had a nuclear family and 35.3% (n=95) had three children. Eighty eight point one percent (n=237) had stoves for heating and 39.9% (n=107) drank tap water. Sixty two point eight percent of the participants (n=169) had indoor toilets and 91.5% (n=246) had indoor bathrooms and 90.3% (n=243) had indoor kitchens. Seventy three point two percent of farm labourers (n=206) did not use masks during work, 63.6% (n=171) did not use gloves, 81% (n=218) did not cover their heads and 93.3% (n=251) did not wear overalls. Forty eight point seven percent (n=131) of the farm labourers didn't washer their hands and face after working in fields, 68% (n=183) did not shower after work and 8.9% (n=24) took no safety measures during and after working in fields.

**Table 1. Comparison of Personal Traits with Perception of Health Scale Mean Scores and European Health Literacy-TR Scores**

| Personal Sharacteristics/ The Health Scale Mean and The European Health Literacy-TR | | | PHS | ASOY-TR |
|---|---|---|---|---|
| | | n(269) | X±SS | X±SS |
| Gender | Female | 114 | 45.59±5.98 | 28.94±6.94 |
| | Male | 155 | 46.34±5.76 | 30.05±6.62 |
| *Test, p | | | 1.031; 0.303 | 1.329;0.185 |
| *Marital Status | Single | 46 | 46.65±4.70 | 31.13±8.04 |
| | Married | 223 | 45.89±6.07 | 29.26±6.45 |
| Test, p | | | 0.795;0.427 | 1.715;0.087 |
| **Education Status | Illiterate | 12 | 42.83±5.18 | 23.58±9.71 |
| | Literate | 13 | 43.46±5.04 | 21.43±4.65 |
| | Elementary School | 161 | 46.00±6.08 | 29.12±6.08 |
| | Middle School | 40 | 46.17±5.94 | 30.70±7.99 |
| | High School | 35 | 47.25±5.01 | 32.96±6.01 |
| | University and Higher Degrees | 8 | 49.25±3.95 | 32.49±5.58 |
| Test, p | | | 10.986;0.052 | **24.848;0.001** |
| **Economic Condition | Insufficient | 61 | 45.52±5.84 | 29.55±6.94 |
| | Balanced | 193 | 46.23±5.88 | 29.61±6.76 |
| | Income More | 15 | 45.33±5.80 | 29.24±5.58 |
| Test, p | | | 0.612;0.736 | 0.038;0.981 |
| * Social Security | Abscent | 49 | 45.44±5.38 | 30.90±7.17 |
| | Present | 220 | 46.15±5.96 | 29.89±6.65 |
| Test, p | | | 0.762;0.447 | 1.511;0.132 |
| ** Family Type | Nuclear family | 233 | 46.19±5.90 | 29.63±6.69 |
| | Extended family | 32 | 44.71±5.43 | 29.99±6.15 |
| | Lives alone | 4 | 46.75±6.80 | 22.96±13.35 |
| Test, p | | | 0.727;0.695 | 0.608;0.738 |

In the ASOY-TR scale, those who were illiterate had lower scores than those who were elementary, middle, high school graduates and those who had university and higher degrees; those who were literate had lower scores than those who were high school graduates or had university of higher degrees; those who were elementary school graduates had lower scores than high school graduates ($p<0.05$). No difference was found in the PHS mean scores and ASOY-TR scale mean scores depending on the gender, marital status, economic condition of the family, availability of social security and family type. Furthermore no difference was found between the level of education and PHS mean scores (Table1.)

**Table 2. Comparison of Living Conditions with Perception of Health Scale Mean Scores and European Health Literacy-TR Scores**

| Living Conditions / The Health Scale Mean and The European Health Literacy-TR Scores | | | PHS | ASOY-TR |
|---|---|---|---|---|
| | | n(269) | X±SS | X±SS |
| Way of Heating | Stoves | 238 | 45.78±5.89 | 29.40±6.72 |
| | Natural Gas | 14 | 50.57±5.25 | 29.50±6.94 |
| | Air Conditioning | 17 | 45.70±4.39 | 32.08±7.18 |
| Test, p | | | **8.833;0.012** | 4.529;0.104 |
| Drinking Water | Tap Water | 107 | 45.81±6.27 | 28.13±6.21 |
| | Tank Water | 5 | 47.40±10.80 | 28.58±5.55 |
| | Transport Water | 96 | 45.75±5.25 | 29.52±7.25 |
| | Bottled Water | 39 | 46.84±5.12 | 32.69±5.72 |
| | Treatment Water | 22 | 46.50±6.50 | 31.57±7.34 |
| Test, p | | | 1.980;0.740 | **18.953;0.001** |
| Location of the Toilet | Indoor | 169 | 46,40±5,91 | 29,60±6,36 |
| | Out of home | 67 | 45,07±6,10 | 28,93±7,62 |
| | Both inside and outside the home | 33 | 46,03±4,91 | 30,76±6,98 |
| Test, p | | | 2,591;0,274 | 1,702;0,427 |
| Location of the Bathroom | Indoor | 246 | 46.24±5.79 | 29.28±6.47 |
| | Out of home | 17 | 44.17±6.91 | 33.04±9.57 |
| | Both inside and outside the home | 6 | 42.33±3.50 | 31.85±6.84 |
| Test, p | | | 4.842;0.089 | 3.055;0.217 |
| Location of the Kitchen | Indoor | 243 | 46.19±5.89 | 29.51±6.85 |
| | Out of home | 19 | 44.68±5.59 | 29.13±4.59 |
| | Both inside and outside the home | 7 | 43.85±6.28 | 33.08±8.72 |
| Test, p | | | 3.371;0.185 | 1.005;0.605 |

*One Way ANOVA*

In the PHS, the mean score of those who used stoves for heating was lower than those who used natural gas; in the ASOY-TR scale the mean score of those who drank tap water was lower than those who used filtered water and bottled water($p<0.05$) (Table 2).

**Table 3. Comparison of Protective Measures While Working with Perception of Health Scale Mean Scores and European Health Literacy-TR Scores**

| Protective Measures While Working/ The Health Scale Mean and The European Health Literacy-TR | | | PHS | ASOY-TR |
|---|---|---|---|---|
| | | n(269) | X±SS | X±SS |
| Using Masks | Yes | 63 | 46.14±5,54 | 32.37±7.53 |
| | No | 206 | 45.99±5.96 | 28.73±6.29 |
| Test, p | | | 0.180;0.857 | **3.829;001** |
| Use of Gloves | Yes | 98 | 45.94±6.09 | 30.24±6.37 |
| | No | 171 | 46.07±5.73 | 29.20±6.97 |
| Test, p | | | 0.163;0.871 | 1.212;0.227 |
| Head Covering | Yes | 51 | 47.70±5.25 | 29.60±7.23 |
| | No | 218 | 46.10±6.00 | 29.57±6.67 |
| Test, p | | | 0.433;0.666 | 0.028;0.978 |
| Wearing Protective Coveralls | Yes | 18 | 45.00±7.51 | 33.09±5.40 |
| | No | 251 | 46.09±5.73 | 29.33±6.79 |
| Test, p | | | 0.768;0.443 | **2.298;0.022** |
| Hand and Face Washing after Work | Yes | 138 | 45.62±5.69 | 29.69±6.42 |
| | No | 131 | 46.45±6.01 | 29.46±7.13 |
| Test, p | | | 1.158;0.248 | 0.278;0.782 |
| Shower after Work | Yes | 86 | 45.15±5.90 | 31.05±7.65 |
| | No | 183 | 46.43±5.81 | 28.89±6.21 |
| Test, p | | | 1.687;0.093 | **2.464;0.014** |
| Taking precautions while working | Yes | 245 | 46.54±6.43 | 26.22±5.47 |
| | No | 24 | 45.97±5.81 | 29.91±6.80 |
| Test, p | | | 0.451;0.652 | **2.571;0.11** |

*Student t test*

In the ASOY-TR scale, farm labourers who did not use masks during work in fields had lower scores than those who did; those who did not wear overalls had lower scores than those who did; those who did not shower after work had lower scores than who did ($p<0.05$).No difference was found between PHS mean scores and ASOY-TR mean scores depending on whether farm labourers use gloves, cover their heads during work and wash their hands and face after work. Furthermore no difference was found between using masks and wearing overalls during work, taking showers after working in fields and taking safety measures before, during and after working in fields and PHS mean scores (Table 3).

**Table 4. Relationship between Farm Labourers' Perception of Health Scale Mean Scores and European Health Literacy-TR Scale Scores**

| The Perception of Health Scale / The European Health Literacy Survey-TR for farm labourers. | n | | ASOY-TR |
|---|---|---|---|
| PHS | 269 | r | 0.740 |
| | | p | 0.227 |

*Pearson Correliation Test*

There was no relationship between the Perception of Health Scale and the European Health Literacy Survey-TR for farm labourers (Table 4).

## DISCUSSION

Thirty point six percent of the farm labourers included in our study had two people households, 88.1% used stoves for heating and 44.5% had 4 rooms in their homes; 39.9% drank tap water. Most of the participants had indoor toilets, bathrooms and kitchens.

In the literature, it was reported that farm labourers live in difficult conditions and their houses are not enough for their essential needs (Egemen, 2015). Farm labourers included in our study were living in a village close to a big town in a developed part of Turkey and therefore their relatively good living conditions are not surprising.

In our study, no difference was found in the PHS mean scores and ASOY-TR scale mean scores depending on the gender. Çilingir and Aydın (2017) did not find a difference between the mean PHS score according to gender in the studies they conducted with nursing students. In the studies conducted by Suka et al. (2015), Değerli and Tüfekçi (2018), Demirli (2018), and Bükecik and Adana (2021), no relationship was found between gender and health literacy level. According to the study of Lee et al. (2010), the level of health literacy was found to be higher in women. According to our study results, it can be said that the level of health literacy is not affected by the gender variable.

In our study, those who were illiterate had lower level of health literacy than those who were elementary, middle, high school graduates and those who had university and higher degrees; those who were literate had lower level of health literacy than those who were high school graduates or had university of higher degrees; those who were elementary school graduates had level of health literacy than high school graduates.

Similar to our study, there are studies in the literature which demonstrate that level of education has an effect on health literacy and people with higher education have higher level of health literacy (Aydın & Aba, 2019; Çimen & Bayık Temel, 2017; Değerli & Tüfekçi, 2018; Halverson et al., 2015; Kaya Şenol ve ark, 2019; Mahmoud et al., 2015; Suka et al., 2015). As the level of education increases, people seem to make better health research just like in many other subjects and make more correct choices. Furthermore, the fact that level of education has a positive effect on health literacy is an expected result for us.

In the PHS, the mean score of those who used stoves for heating was lower than those who used natural gas; in the ASOY-TR scale the mean score of those who drank tap water was lower than those who used filtered water and bottled water and the mean score of those who did not have running water was lower than those who used bottled water.

There are no studies in the literature which compare mean scores in the Perception of Health Scale (PHS) and in the European Health Literacy-TR scale (ASOY-TR). Based on the study results, although there was no statistical difference we can suggest that people who had relatively poorer living conditions had more negative perception of health and had lower level of health literacy.

In the ASOY-TR scale, farm labourers who did not use masks during work in fields had lower scores than those who did; those who did not wear overalls had lower scores than those who did; those who did not shower after work had lower scores than who did.

In his study Sezgin (Sezgin, 2019) found that there was no difference between the use of personal protective equipment and health literacy. There are limited number of studies on the use of personal protective equipment in the literature however use of personal protective equipment is critical to protect health and a good health literacy undoubtedly affects this.

No relationship was found between the scores of the participants in the Perception of Health Scale and the European Health Literacy Survey-TR.

Demirli (Demirli, 2019) found that there was no relationship between self-assessment of general health status and health literacy. Kıraç (Kıraç, 2019) found that participants who assessed themselves to be in good health had higher level of health literacy. In the thesis paper, Sezgin (Sezgin, 2019) found that there was no difference in health literacy depending on the perception of general health. Our study results for health status is different from the results of Kıraç (Kıraç, 2019) and comparable to the results of Demirli (Demirli, 2018) and Sezgin (Sezgin, 2019).When the European Health Literacy-TR scale is assessed in a conceptual framework , protection of health is a decision making process which includes improvement of health and implementation of treatments; however perception of health has a more cognitive aspect since it is about being aware of health and understanding the importance of good health; therefore it is an expected result for us to find no relationship between these two scales.

**Limitations of the Study:**

- The study scope is limited to the people who work in agriculture in one region.
- Conceptual basis of the study is limited to articles in Turkish and English.
- Data are based on the declarations of the participants.

## CONCLUSION AND RECOMMENDATIONS

Those who had higher level of education, those who drank bottled water, those who used masks during farm work, those who wore overalls and had shower after work and those who took safety measures when working had higher level of health literacy and those who used natural gas for heating had higher perception of health. Based on these results, it is recommended to increase the number of studies comparing the personal and health characteristics with health perceptions and health literacy levels of agricultural workers.

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