Original Article

# Knowledge Levels of Seasonal Migratory Agricultural Workers on Sexually Transmitted Infections

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**Abstract**

**Objectives:** The purpose of this study was to determine the knowledge levels of seasonal migratory agricultural workers (SMAW) on sexually transmitted infections (STIs).
**Study Design:** Sexually transmitted diseases-related questions of multi-purpose cross-sectional type 'Determination of Needs of Seasonal Migratory Agricultural Worker Families 2011' of United Nations Population Fund and Harran University were analyzed in the study.
**Methods:** Sample group of the study consisted of 1211 married women and 1064 married men. Necessary permissions were received for the study to be conducted by using face-to-face interview. Descriptive statistics and chi-square test were used to analyze the data.
**Results:** 28.3% of women and 57.7% of men participating in the study expressed that they heard of STIs. 26.4% of women and 54.2% of men who expressed they heard of them stated that they knew ways of protection. While infections frequently heard by women were HIV/AIDS (22.0%), hepatitis B (8.5%), fungal infections (7.8%), papilloma (2.7%); the frequency rates of these infections heard by men were respectively HIV/AIDS 47.1%, hepatitis B 20.4%, fungal infections 7.3%, papilloma 4.3%.
**Conclusion**: Consequently, it was determined that seasonal migratory agricultural workers did not have sufficient knowledge on STIs and protection methods and they were under risk.

**Key Words:** Seasonal migratory agricultural worker, STIs.

## Introduction

Sexually transmitted infections (STIs) are a universal public health problem in terms of the disease burdens caused by their complications and sequela through the high incidence of acute cases. These infections cause infertility, loss of fetus, ectopic pregnancy, anogenital cancer and premature death since diagnosis and treatment cannot be determined in early period, and in addition they result in undesirable conditions such as newborn and infant infections. Furthermore, they also create an economic burden which should be taken into consideration on individual and national levels (Morbidity and Mortality Weekly Report, 2010; National Strategies and Action Plan for Health Sector 2005; Özdemir, Ayvaz & Poyraz, 2003). Due to the specified reasons, the 6$^{th}$ goal of Millennium Development Goals has been identified as fighting against HIV/AIDS, malaria, and other epidemics (WHO Millennium Development Goals, 2013).

More than 1 million people have been reported to be exposed to STIs every day. 500 million people catch one of the infections of chlamydia, gonorrhea, syphilis, and trichomonas vaginalis every year. According to the report of United Nations, incidence of syphilis in member states is 4.9 in 100.000, incidence of chlamydia is 175 in 100.000, and incidence of gonorrhea is 12.6 in 100.000. Lymphogranuloma venereum (LGV) which is a STD has been on the increase in recent years. 1775 cases in the United Nations, 546 cases in the Netherlands, and 373 cases in France were reported in 2011. While syphilis and gonorrhea are more frequently seen in men, chlamydia is more frequent in women. STIs are stated to be observed mostly in young adults in the report (Sexually transmitted infections in Europen 2011). Additionally, the risk of HIV is three times higher than other sexually transmitted diseases (Sexually transmitted infections, 2013).

Turkey is one of the countries with the highest risk in the world in terms of STIs (Çok, Gray & Ersever, 2001; Yıldırım, 2002; WHO Global HIV/ AIDS Surveillance Report, 2005). According to the 2004 data of the Ministry of Health; 3681 cases of syphilis, 6951 cases of hepatitis B and 210 cases of HIV/AIDS were reported in Turkey; on the other hand, in the year of 2005, 4019 cases of syphilis, 8663 cases of hepatitis B and 332 cases of HIV/AIDS were reported (Ministry of Health, Health Statistics Yearbook, 2012). Additionally, it has been reported that the incidence of AIDS was 0.11 in 100.000. Number of local cases was 79 and number of foreign cases was 10 (Ministry of Health, Health Statistics Yearbook, 2012).

Agriculture is 2nd employment area in Turkey and in the world. Agricultural production differs from other sectors in terms of numerous factors such as distance from urban services, low educational level, and seasonal labor force migration due to its performance in rural areas. Seasonal migratory agricultural workers, defined as the heart of sustainable agricultural production constitute about 450 million of 1.1 billion agricultural labor force in the world (Hurst, Temrine & Karl, 2007). When studies conducted in Turkey are analyzed, it is also seen that approximately 39% of agricultural workers consist of seasonal migratory population (Şimşek & Kırmızıtoprak, 2013). In countries where agricultural production is common; seasonal migratory agricultural workers are defined as a special risk group in terms of low education levels, poor accommodation and working conditions, crowded living, poverty, agricultural chemicals, accidents and injuries, long and hard working conditions and accidents, injuries, diseases and early deaths based on access to health, education and other services (Donham & Thelin, 2006; Şimşek, Koruk & Doni, 2012; Gilden, Huffling & Sattler, 2010; Koçakoğlu, Şimşek & Ceylan, 2009). Even though there are medical institutions offering services towards STIs in Turkey, it is very important to determine the groups who cannot reach such services in terms of control of STIs and ascertain the approaches specific to these groups. Due to the fact that seasonal migratory agricultural workers, who spend 6-7 months of a year in rural areas of 48 different cities of Turkey and whose fertility rates are high, cannot access health services sufficiently (Şimşek, 2011) and most of STIs do not show indications and symptoms, studies demonstrating the knowledge levels of these workers are required. Therefore, this study was conducted in order to determine the knowledge levels of seasonal migratory agricultural workers on STIs.

## Materials and Method

### *Design and sample*

Sexually transmitted infections-related questions of multi-purpose cross-sectional type 'Determination of Needs of Seasonal Migratory Agricultural Worker Families 2011' of United Nations Population Fund and Harran University were analyzed in the study. Population of the study consisted of houses where seasonal migratory agricultural workers resided in two city centers where seasonal agricultural workmanship is high. The sample size was determined as 1200 houses by the Turkish Statistical Institute (TSI) and houses were selected by using probability cluster sampling method. The study was completed in 1021 houses (response rate was 85.2%). Houses inhabited by a total of 2275 individuals, including

1211 married women aged between 15-49 and 1064 married men aged between 15-60 were visited for interview.

***Measures***

Household Questionnaire involving socio-demographic questions such as age, gender and education level and 'Sexually Transmitted Infections' section, which was added into Female and Male Questionnaire to determine the knowledge level regarding STI, were used in the study. The specified section had questions regarding status of knowledge such as having heard of STI, knowing protection methods, and health results in absence of early diagnosis-treatment.

***Procedures***

Questionnaire was applied through individual selection method in case of more than one individual in the same age range in the house. In the study where face-to-face interview method was used, approval of the University's Ethics Committee and consents of individuals participating in the study were received.

***Analytic strategy***

Questionnaires returned from the areas were controlled in the same day and data were entered in SPSS 11.5 software program by data entry personnel independent of each other. In this study, descriptive statistics were stated and chi-square test was used in order to determine if there is a difference among groups or not.

**Results**

While 53.2% of seasonal migratory agricultural workers participating in the study were female, 46.8% were male. Average age of women was 29.5 ± 10.6 and the average age of men was 33.1 ± 14.0. When their educational status were analyzed; 49.8% of women were illiterate, whereas 18.2% had secondary stage and above education. 18.8% of men were illiterate and 32.3% had primary stage education.

In terms of educational status, women were more disadvantageous compared to men. In this study in which one of every two persons was determined to be an agricultural worker since their birth; 37% of women and 35% of men stated that they have been working as agricultural workers for 20 years and longer. According to the language spoken at home, approximately 60% of women and men were Kurdish, 30% were Arabian and about 10% were Turkish. Approximately half of women and men had low level of welfare.

A 28.3% of women and A 57.7% of men expressed that they heard of sexually transmitted infections. As is seen in Table 1, there was no significant difference between the rates of having heard of STIs and age, educational level, welfare level, number of cities they worked in and years of having worked as agricultural workers of women ($p > .05$), whereas frequency rates of having heard of STIs varied according to the language spoken at home and place of residence ($p < .05$). There was a significant difference between the frequency rates of having heard of STD among men and their ages, educational status, cities they resided in and years of having worked as agricultural workers ($p < .05$), whereas there was no significant difference among their number of cities they worked in, levels of welfare and the language spoken at home ($p > .05$).

The most frequent heard STIs were HIV/AIDS (22%) and hepatitis B (8.5%) in women, and HIV/AIDS (47.1%) and hepatitis B (20.4%) in men. The rate of those, who stated that STIs are only infected through sexual intercourse, was 26.4% in women and 43.6% in men (Table 2).

As methods of protection, women specified not having sexual intercourse (8.2%), using condoms (4.5%) and having an intercourse with a reliable sexual partner (6%). On the other hand, men stated methods of not having sexual intercourse (28.3%), using condoms (15.6%), having an intercourse with a reliable sexual partner (8.2%) and not having an intercourse for money (6.0%) (Table 3).

When health problems caused by STDs were analyzed; while 11.5% of women remarked that they would cause cancer, 5.5% infertility, 3.0% infection on sexual organs, 2.1% inguinal pain, 1.7% absence of sexual appetite; 14% of men remarked that it would cause cancer, 6.8% infertility, 3% absence of sexual appetite and, 1.7% inguinal pain, and 1.7% infection on sexual organs.

**Discussion**

One of the significant problems encountered through sexual behaviors which are among the basic needs of men is STIs (Topbaş, Çan & Kapucu, 2003). In this study, knowledge status of migratory population in agriculture, which is an important line of work, regarding STI was examined.

The frequency rates of having heard of STI were approximately 28% in women and 58% in men. In addition to poor living conditions, the conducted studies also reported that individuals did not have sufficient knowledge on STIs (Özdemir, Ayvaz & Poyraz, 2003; Siyez & Siyez, 2009).

In this study, the fact that STIs are less frequently known by women is an indicator of the importance given to women by the society due to regional characteristics, and it is not culturally considered appropriate for young women to talk about these subjects. On the other hand, this situation can also be explained with the low educational levels of women.

It was determined that infections are more commonly known in the age group of 15-19 (Bakır et al., 2003). Similarly, in a study, it was also reported that the young individuals in the age group of 15-16 had a higher rate of knowing STIs compared to other age groups (Gottvall, 2009). Young individuals in this period are more affected by the individuals around them (peers, family, etc.) and media compared to other age groups, and they may exhibit risky behaviors to satisfy their curiosity.

It is reported in the literature that groups with lower educational levels are under risk in terms of STI (Bakır et al., 2003). In this study, it was determined that men with higher education levels had significantly higher rates of having heard of STIs (Table 1). Women with higher educational levels also had a higher rate of having heard of STI (Table 1). Nazik and Gönen (1993) conducted a study in Lower Seyhan Plain, and reported that 80.6% of women were illiterate, which was similar to this study (Nazik & Gönen, 1993). As the educational level increased, individuals used media more frequently and raise their awareness regarding STI.

It was determined in this study that while women who heard of STIs had low levels of welfare, men who had high levels of welfare also had higher rates of having heard of STIs (Table 1). In studies conducted by Sevim et al., (2002) and Oğultürk (1991), it was reported that as level of welfare decreased, rates of having heard of STIs also decreased (Sevim & Özden, 2002; Oğultürk, 1991). This situation can be closely associated with the fact that individuals working as seasonal migratory agricultural workers had different living priorities due to poverty.

STIs have started to become a significant problem in Turkey due to insufficient education programs and difficulties encountered in conveying information regarding diseases to all levels of society. In this study, the most commonly known STIs in both women (22.0%) and men (47.1%) was HIV/AIDS. While similar results have been obtained in other studies, frequency rates of knowing them are quite higher compared to seasonal migratory population. In the study conducted by Açıkel et al., the most commonly known STI was found to be HIV/AIDS (76.1%). Participants who gave the answer of gonorrhea were ranked as the second with the rate of 49.7%. Syphilis was only indicated by 6.5% of participants (Açıkel et al., 2005). In another study conducted in a military unit in Ankara, sexually transmitted infections were questioned and the rate of knowing AIDS was 76.0%, gonorrhea 43.0%, syphilis 29.0% and hepatitis B 37.0% (Ceylan et al., 2002). In the study conducted by Kılıç et al., AIDS took the first place (96.0%), followed by syphilis (73.0%), gonorrhea (87.0%) and Hepatitis B (39.0%) (Kılıç et al., 2004). In the study conducted by Topbaş et al., in Trabzon, AIDS was the most commonly known STI (95.0%), however only 31.0% of students were aware of Hepatitis B (Topbaş, Çan & Kapucu, 2003). In a study conducted with 134 students in Croatia, almost all students (96.5%) knew AIDS (Kapamadzija, Bjelica & Segedi, 2001). In another study conducted among 8453 adolescents in India; the rate of those who were aware of AIDS was 39.5% and the rate of those who are aware of other STIs is 18.0% (Gupta et al., 2004).

**Table 1: Distribution of status of male/female seasonal migratory agricultural workers to hear of stds according to some basic characteristics**

| | Female | | | | Male | | | |
|---|---|---|---|---|---|---|---|---|
| Basic Characteristics | Heard about | Not heard about | Total | Number | Heard about | Not Heard about | Total | Number |
| **Age Groups** | | | | | | | | |
| 15-19 | 24.7 | 75.3 | 100.0 | 324 | 52.3 | 47.7 | 100.0 | 258 |
| 20-24 | 29.3 | 70.7 | 100.0 | 184 | 79.6 | 20.4 | 100.0 | 142 |
| 25-29 | 30.8 | 60.2 | 100.0 | 113 | 63.8 | 36.2 | 100.0 | 105 |
| 30-34 | 31.8 | 68.2 | 100.0 | 129 | 73.2 | 26.8 | 100.0 | 71 |
| 35-39 | 28.1 | 71.9 | 100.0 | 171 | 58.6 | 41.4 | 100.0 | 99 |
| 40-44 | 24.8 | 75.2 | 100.0 | 153 | 48.5 | 51.5 | 100.0 | 134 |
| 45 and above | 20.0 | 73.0 | 100.0 | 137 | 48.6 | 51.4 | 100.0 | 255 |
| | | $X^2 = 11.360$ | $p = .078$ | | | $X^2 = 59.705$ | $p = .000$ | |
| **Educational Level** | | | | | | | | |
| Illiterate | 20.1 | 79.9 | 100.0 | 603 | 47.5 | 52.5 | 100.0 | 200 |
| Literate-primary school drop-out | 35.5 | 64.5 | 100.0 | 197 | 54.8 | 45.2 | 100.0 | 104 |
| Primary stage | 35.1 | 64.9 | 100.0 | 191 | 52.9 | 47.1 | 100.0 | 344 |
| Secondary stage and above | 38.6 | 61.4 | 100.0 | 220 | 67.3 | 32.7 | 100.0 | 416 |
| | | $X^2 = 3.891$ | $p = .143$ | | | $X^2 = 34.586$ | $p = .000$ | |
| **City of Residence** | | | | | | | | |
| Şanlıurfa | 21.3 | 78.7 | 100.0 | 856 | 53.0 | 47.0 | 100.0 | 734 |
| Adıyaman | 45.4 | 54.6 | 100.0 | 355 | 68.2 | 31.8 | 100.0 | 330 |
| | | $X^2 = 71.733$ | $p = .000$ | | | $X^2 = 19.346$ | $p = .000$ | |
| **Level of Welfare** | | | | | | | | |
| Lowest | 32.4 | 67.6 | 100.0 | 219 | 56.3 | 43.7 | 100.0 | 199 |
| Low | 27.2 | 72.8 | 100.0 | 559 | 56.8 | 43.2 | 100.0 | 486 |
| Middle | 28.1 | 71.9 | 100.0 | 374 | 58.7 | 41.3 | 100.0 | 336 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| High | 25.4 | 74.6 | 100.0 | 59 | 67.5 | 32.5 | 100.0 | 40 |
| | | $X^2 = 3.106$ | p =.078 | | | $X^2 = 1.225$ | p =.747 | |
| **Number of cities they worked in** | | | | | | | | |
| 1 | 29.5 | 70.5 | 100.0 | 821 | 57.4 | 42.6 | 100.0 | 707 |
| 2 and above | 26.1 | 73.9 | 100.0 | 380 | 58.3 | 41.7 | 100.0 | 357 |
| | | $X^2 = 2.210$ | p =.137 | | | $X^2 = .376$ | p =.540 | |
| **Period of time for which they worked as an agricultural worker** | | | | | | | | |
| 9 years and less | 30.6 | 69.4 | 100.0 | 356 | 57.0 | 43.0 | 100.0 | 237 |
| 10-19 years | 24.1 | 75.9 | 100.0 | 345 | 52.2 | 47.8 | 100.0 | 253 |
| 20 years and more | 28.4 | 71.6 | 100.0 | 412 | 55.9 | 44.1 | 100.0 | 376 |
| | | $X^2 = 2.118$ | p = .347 | | | $X^2 = 12.868$ | p = .005 | |
| **Languages spoken at home** | | | | | | | | |
| Only Turkish | 49.0 | 51.0 | 100.0 | 100 | 74.2 | 25.8 | 100.0 | |
| Only Kurdish | 24.7 | 75.3 | 100.0 | 194 | 62.1 | 37.9 | 100.0 | |
| Only Arabic | 8.9 | 91.1 | 100.0 | 124 | 45.8 | 54.2 | 100.0 | |
| Turkish-Kurdish | 35.4 | 64.6 | 100.0 | 554 | 59.8 | 40.2 | 100.0 | |
| Turkish-Arabic | 16.3 | 83.7 | 100.0 | 239 | 47.9 | 52.1 | 100.0 | |
| | | $X^2 = 9.537$ | p = .002 | | | $X^2 = 6.808$ | p = .146 | |
| **Total** | **28.3** | **71.7** | **100.0** | **1211** | **57.7** | **42.3** | **100.0** | |

**Table 2: STDs heard by male/female seasonal migratory agricultural workers**

| **Infections** | **Female** | | **Male** | |
|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** |
| HIV/AIDS | 267 | 22.0 | 501 | 47.1 |
| Hepatitis B | 103 | 8.5 | 217 | 20.4 |
| Fungus | 94 | 7.8 | 78 | 7.3 |
| Genital warts/wounds | 33 | 2.7 | 46 | 4.3 |
| Gonorrhea | 17 | 1.4 | 86 | 8.1 |
| Syphilis | 14 | 1.2 | 35 | 3.3 |
| Other | 17 | 1.4 | 9 | 0.8 |
| Not heard | 343 | 28.3 | 600 | 56.4 |

**Table 3: Distribution of opinions of male/female seasonal migratory agricultural workers regarding protection methods against stds (percentage distributions)**

| Opinions | Female | | Male | |
|---|---|---|---|---|
| | Number | Percentage | Number | Percentage |
| Not knowing any protection method | 892 | 73.7 | 487 | 45.8 |
| Use of condoms | 56 | 4.5 | 167 | 15.6 |
| Reliable sexual partner | 49 | 6.0 | 66 | 8.2 |
| Not having a sexual intercourse | 99 | 8.2 | 302 | 28.3 |
| Not having a sexual intercourse for money | 25 | 2.1 | 64 | 6.0 |
| Not sharing blades | 14 | 1.2 | 13 | 1.2 |
| Not kissing | 11 | 0.9 | 16 | 1.5 |
| Other | 89 | 7.3 | 130 | 12.2 |

In the study conducted by Samkange-Zeeb et al., by analyzing 15 studies regarding STIs, the most commonly known STIs is again reported to be HIV/AIDS (Samkange-Zeeb & Zeeb, 2011). In a great part of the world, AIDS is epidemic. Even though its incidence rate in Turkey is low, it is remarkable that its familiarity rates are so high. This situation can be associated with the fact that the results of this disease are fatal and individuals have more opportunities of following these diseases through the mass media. In this study, the fact that women have low rates of knowing STIs can be associated with cultural characteristics and insufficiency of offered health services.

Additionally, working as seasonal migratory agricultural workers may have restricted the individuals' opportunities of education and following the mass media, and therefore affected their awareness of STI negatively.

In this study, the rate of women who do not know any protection methods against sexually transmitted infections was 73.7% whereas the rate of men was 45.8%. Most of the seasonal migratory agricultural workers who were aware of protection methods indicated that not having sexual intercourse is the most effective protection method. Other commonly mentioned protection methods are use of condoms, having a reliable sexual partner, not having an intercourse for money, not sharing blades with anyone, and not kissing. Condom is one of the most commonly known protection methods. In another study conducted in India, when reliable measures against AIDS were questioned, 30.0% stated monogamy, and 17.4% stated the use of condoms for safe sexual intercourse (Gupta et al., 2004).

If STIs cannot be diagnosed and treated in early stage, they may cause problems such as infertility, anogenital cancer, premature death, and loss of fetus. These diseases generally show acute symptoms and become chronic in time (Öcal & Börekçi, 2008). In this study, male and female seasonal migratory agricultural workers indicated the risk of cancer with the highest rate followed by infertility in the second rank. In another study, participants indicated that HPV may cause cancer (Abike & Dünder, 2012).

Consequently, it is seen that the knowledge levels of seasonal migratory agricultural workers on sexually transmitted infections are insufficient. STIs may be infected through body fluids, commonly used materials and at birth (Ünal & Sain, 2002). When seasonal migratory agricultural workers' crowded family lives, high fertility

levels, general practice of giving birth without the presence of health personnel and common use of materials such as nail clippers are evaluated altogether, it is observed that this group is under risk in terms of STIs. Therefore, performing interventional practices such as peer educations (Şimşek & Kırmızıtoprak, 2013), improving the working conditions of seasonal migratory agricultural workers as well as planning and implementing programs for health promotion may be recommended for this group under risk.

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