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Assessment of seasonal agricultural workers' mental health

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Abstract

Aim: Mental health of the seasonal agricultural workers (SAW) can be negatively affected due to working under hard conditions, being exposed to discrimination from time to time, working in a socially isolated field, and having insufficient social support resources. This study aimed to assess the mental health of the SAW.

Materials and Methods: This study was conducted from June to September 2021 in a family health center region in a province located in the southeast of Turkey in which the SAW intensely populated. The study sample consisted of 300 seasonal agricultural workers. Data were collected using an introductory form and the Brief Symptom Inventory (BSI) through face-to-face interviews. The data were analyzed using the Statistical Package for Social Sciences (SPSS) 22.00 program, descriptive statistics (numbers, percentages, means), independent samples t-test, the Mann Whitney-U test, variance analysis, and the Kruskal-Wallis test.

Results: The participants' mean subscale scores were 8.08±6.39 for somatization, 15.81±9.15 for depression, 11.79±8.32 for anxiety, 8.84±5.18 for hostility, and 14.10±8.13 for negative self-concept. Their mean index scores were 1.10±0.58 for the Global Severity Index (GSI), 24.44±11.09 for the Positive Symptom Total (PST), and 2.08-0.53 for the Positive Symptom Distress Index (PSDI). A statistically significant difference was found between anxiety and depression subscales by gender; somatization subscale by marital status, education level, presence of chronic diseases, and duration of employment; and negative self-concept and hostility subscales by presence of chronic diseases ($p<0.05$).

Conclusion: It can be concluded that the SAW had psychopathological tendencies. Therefore, it is critical to periodically assess the mental health of the SAW and to develop coping strategies regarding the problems they experience.

Introduction

A seasonal agricultural worker (SAW) is described as a permanent or temporary seasonal worker who is a citizen of the country or a foreigner and works at any stage of agricultural production in their own or someone else's field for salary/daily wage or real payment with or without a contract [1]. These workers with inadequate and irregular incomes constitute more than half billion of the world population and they immigrate to different regions every season to earn money for their families [2,3]. However, the unhealthy conditions encountered during this continuous immigration may cause them to have many physiological problems [4]. The frequently seen stress factors and long-term traumatic stress among the SAW increase the prevalence of various physical disorders as well as psychological disorders such as anxiety and depression [5,6,7].

In addition, working under challenging conditions for long hours, being a stranger in their working environment, being exposed to discrimination from time to time, working in a socially isolated area, and being away from their familial social supports are among the critical factors that may negatively affect the mental health of these workers [5,8,9]. When the literature is examined, the prevalence of mental health problems of MTIs is stated as 31.5% [6]. Although there are various studies showing that there are high levels of mental symptoms such as depression and anxiety in workers, it is noteworthy that the studies are old and only evaluated in a limited area [6,8,9]. Therefore, it is critical to determine the psychological symptoms of SAW, which plays an important role in meeting the basic nutritional needs of the society. This study contributes to the literature by assessing the mental health of this large population in the society and offering relevant solutions. Therefore, this study aimed to assess the mental health of the SAW.

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The present study aimed to assess the mental health of seasonal agricultural workers. For this aim, the following research questions were tried to be answered.

- What is the mental health of seasonal agricultural workers?
- What kinds of variables affect the mental health of seasonal agricultural workers?

Materials and Methods

Study design and study population

The study was conducted descriptively and a cross-sectional study in order to assessment of seasonal agricultural workers' mental health. This study was conducted from June to September 2021 in a family health center region in a province located in the southeast of Turkey, where the SAW is intensely populated. The target population included the seasonal agricultural workers (in the recent year) whose ages ranged from 18 to 65. The study sample was determined using the 30-cluster sampling technique of the WHO, in which 10 individuals were reached in each cluster and 300 in total [10].

Ethical approval

Before conducting this study, ethics committee approval (26.04.2021 - 09/26) was obtained from the Clinical Research Ethics Committee of the university in which this study was conducted. Written permission and informed consent were obtained from the relevant institutions and the participants.

Data collection

The clusters' starting points were chosen using the simple random sampling method from the streets of the predetermined neighborhoods. The individuals were visited in their homes, and the data were collected through face-to-face interviews conforming to the pandemic measures.

Data collection tools

An individual information from and the BSI were used to collect the study data.

Individual information form

The individual information from was prepared by the researchers after reviewing the literature, which consisted of 13 questions regarding the sociodemographic characteristics, health behaviors, and job-related characteristics of the SAW [6]. In these three contexts, the questions are generally in the form of age, gender, marital status, education status, income status, family type, presence of chronic disease, chronic disease name, working time as a seasonal agricultural worker, stay in the field, job satisfaction status, most problematic work-related situations and mental health perception status. Mental health perception status was measured as how the individual evaluates his or her own mental state (good, medium, bad). On the other hand, chronic diseases generally refer to physiological chronic diseases such as diabetes, hypertension and asthma that the individual has.

Brief Symptom Inventory (BSI)

The BSI was developed by Derogatis [11] to identify the psychological symptoms. Şahin and Durak [12] have conducted a validity study of its Turkish version. This 4-point Likert-type inventory has 53 items with five subscales: anxiety, depression, negative self-concept, somatization, and hostility [11,12]. The inventory items are scored as follows: 0 (not at all), 1 (slightly), 2 (moderately), 3 (very), and 4 (extremely). The highest possible score is 212, and the lowest is 0. This inventory is suitable for adolescents and adults. Higher total scores indicate higher frequencies of symptoms [12].

The scale consists of five sub-dimensions. A scoring key was made for each subscale. The scores of this subscale were found by giving points between 0-4 according to the student's marking of each question with the scoring key. [12].

Anxiety: includes symptoms and behaviors such as fear, worry, nervousness, irritability, trembling, panicking, nausea, diarrhea, urinary frequency, shortness of breath, sweating, and frequent breathing. Anxiety subscale consists of 13 items.

Depression: includes symptoms and behaviors such as grief, pessimism, pessimism, unhappiness, loneliness, negative feelings about self, suicidal tendencies, loss of interest, and indecision. The depression subscale consists of 12 items.

Negative Self: It includes symptoms such as feeling small, unsuccessful, worthless and guilty when the individual compares himself/herself with others by feeling of personal inadequacy and smallness. The Negative Self subscale consists of 12 items.

Somatization: It includes many recurrent somatic complaints that persist for years and are not understood to be due to any physical disorder. It includes symptoms such as somatization, fainting, chest pains, abdominal pain, nausea, shortness of breath, and numbness in the body. The somatization subscale consists of 9 items.

Anger: includes symptoms such as irritability and trembling, anger, anger, insecurity, desire to beat, hurt or hurt someone, and a desire to spill something.

The anger subscale consists of 7 items. The high total scores obtained from the scale indicate the frequency of the individual's symptoms. Its validity and reliability for adolescents was done by Şahin et al., and the internal consistency coefficients of the subscales were found to be between 70 (somatization) and .88 (depression), and the internal consistency coefficient of the inventory was .94 [12]. The Cronbach's alpha coefficient was 0.92 for this study. This inventory has three global indices with different scoring methods. These are Global Severity Index (GSI), Positive Symptom Total (PST), and Positive Symptom Distress Index (PSDI) [12]. The dependent variable of the present study was the mean BSI score.

The independent variables of the study were the participants' gender, marital status, education level, income level, family type, presence of chronic diseases, the duration of employment, location of residence in the field, job satisfaction, and perception of mental health.

Statistical analysis

The data that were collected in the study were analyzed using the Statistical Package for the Social Sciences for Windows (SPSS, Version 25, Armonk, NY: IBM Corp. Released 2017). Descriptive statistics were used in the analysis of the data (numbers, percentages, means). In addition, t-test and Mann Whitney U test were used to compare two means, and one-way analysis of variance and Kruskall Wallis Test were used to compare means of three and above. In addition post hoc (LSD) test applied. Skewness and kurtosis values were examined to determine whether they fit the given normal distribution. The value of $p<0.05$ was considered significant in the analyses. In addition, the Cronbach alpha coefficient of the scale was calculated in this study.

Results

Of the participants, 56.3% were female, 65.7% were married, and 31.7% were illiterate. Of them, 51.7% had a moderate level of income. Of the participants, 62.3% had nuclear families and 21.3% had chronic diseases. Of them, 31% worked as SAW for fewer than five years, 90.7% stayed at in tents when they were at the field, 71.7% were not happy with their job, and 42.7% considered their mental health poor. Of the participants, 35% indicated that the most problematic factor for them was the fact that their job was difficult (Table 1).

The participants' mean subscale scores were 8.08±6.39 for somatization, 15.81±9.15 for depression, 11.79±8.32 for anxiety, 8.84±5.18 for hostility, and 14.10±8.13 for negative self-concept. Their mean index scores were 1.10±0.58 for the GSI, 24.44±11.09 for the PST, and 2.08-0.53 for the PSDI (Table 2).

A statistically significant difference was found between mean anxiety and depression subscale scores by gender; mean somatization subscale scores by marital status, and mean somatization subscale scores by education level ($p<0.05$). As a result of the post hoc test, the somatization score averages of the illiterates and 21 years and above workings are significantly higher than the others. A statistically significant difference was found between mean negative self-concept, somatization, and hostility subscale scores by the presence of chronic diseases ($p<0.05$). A statistically significant difference was found between the somatization subscale by the duration of employment, anxiety subscale by the location of residence in the field, and depression and hostility subscales by the status of job satisfaction ($p<0.05$). A statistically significant difference was found between all subscales of the inventory by the perception of mental health of the SAW with a poor mental health ($p<0.05$) (Table 3). According to the post hoc test, those who perceive their health status as poor have a significantly higher mean score than the others (Table 3).

Considering the female SAW, a statistically significant difference was found between mean GSI and PST scores by gender; mean PST scores by family type; mean GSI, PST, and PSDI scores by the presence of chronic diseases; mean PST scores by the location of residence in the field; mean GSI scores by the status of job satisfaction; and mean GSI, PST, and PSDI scores by the perception of mental health ($p<0.05$) as shown in Table 4. According to the post hoc test, those who perceive their mental health perception status as poor have a significantly higher mean score than the others (Table 4).

Table 1. Distribution of the characteristics of the seasonal agricultural workers.

Characteristics		n	%
Gender	Male	131	43.7
	Female	169	56.3
Marital Status	Married	197	65.7
	Single	103	34.3
Education Status	Illiterate	95	31.7
	Primary School	86	28.7
	Middle School	44	14.7
	High School	45	15.0
	University and Above	30	10.0
Income Status	Good	11	3.7
	Moderate	155	51.7
	Poor	134	44.7
Family Type	Nuclear Family	187	62.3
	Extended Family	113	37.7
Have a Chronic Disease	Yes	64	21.3
	No	236	78.7
Working Time as a Seasonal Agricultural Worker	Less than 5 years	93	31.0
	6-10 years	93	31.0
	11-15 years	42	14.0
	16-20 years	34	11.3
	21 years and above	38	12.7
Stay in the Field	Tent	272	90.7
	Housing	28	9.3
Happy with Their Job	Yes	85	28.3
	No	215	71.7
Mental Health Perception Status	Good	113	37.7
	Moderate	59	19.7
	Poor	128	42.7
Most Problematic Work-Related Situations	Weather conditions	88	29.3
	Housing Conditions	41	13.7
	Family Issues	17	5.7
	Workload/difficulty	105	35.0
	Little Fee	13	4.3
	Health Problems	14	4.7
	Negative Attitudes of the Employer	10	3.3
	There is no Problem	12	4.0

Discussion

It can be highly challenging to assess the mental health of agricultural workers in the urban or rural areas. They have to travel due to their job is one of the main factors that make this assessment challenging. Few studies were found in the literature examining the seasonal agricultural workers' mental health, which might be because of the difficulty of reaching these workers. In this regard, this

Table 2. Mean brief symptom inventory scores of the seasonal agricultural workers.

Brief Symptom Inventory	Minimum and Maximum Values of The Scale	(X̄±SD)	Minimum and Maximum Values of Participant Responses
Somatization Subscale	0-36	8.08±6.39	0.00-28.00
Depression Subscale	0-48	15.81±9.15	0.00-41.00
Anxiety Subscale	0-52	11.79±8.32	0.00-40.00
Hostility Subscale	0-28	8.84±5.18	0.00-24.00
Negative Self-concept	0-48	14.10±8.13	0.00-38.00
Global Severity Index (GSI)	0-4	1.10±0.58	0.09-2.92
Positive Symptom Total (PST)	0-53	24.44±11.09	2.00-53.00
Positive Symptom Distress Index (PSDI)	0-4	2.08±0.53	1.00-4.00

study aimed to assess the mental health of the SAW in a province of Turkey in which they are intensely populated [1,13,14]. To fulfill this aim, the assessment was performed over many symptoms such as depression, anxiety, negative self-concept, somatization, and hostility that are common in adults.

This study found that approximately half of the participants (42.7%) considered their mental health poor. This result points out the significance of the current situation regarding the society's mental health. The mean BSI scores obtained in this study also emphasized this importance. Given the scores on three global indices (GSI, PST, and PSDI), the scores obtained in this study were higher than that of many other studies that assess the mental health of adults [15-19]. One study on the SAW found that the frequency of the adults' mental health problems was 31.5% [6]. The SAW showed more psychological symptoms than other professional groups investigated in other studies. The main underlying reason for this may be the problems in their job that lead to problematic situations in individuals' existential areas. Studies in the literature showed that the SAW experienced many physiological problems, such as mostly staying at unhealthy places like tents, being incapable of meeting their basic needs, such as sleep and nutrition, and receiving inadequate health care services as well as being frequently exposed to harsh climatic conditions or communicable diseases [2,7]. In addition, the SAW had many psychosocial problems that were challenging to tackle, such as leaving the place they were living in and traveling to different regions, thus being away from their social support systems; being underpaid although they intensely worked in hard and risky jobs; being continuously exposed to negative attitudes of their employers; and having cultural conflicts due to traveling to different regions [5,6,8,9]. In parallel with the results in the literature, the SAW in this study also stated that they experienced difficulties that would harm their sense of self such as challenges in their job, harsh climatic and shelter conditions, underpayment, being unable to meet basic needs, and being away from their family.

The high scores obtained from the subscales of the BSI may be related to these problems. Being mostly away from their family and thus lacking social support systems and being underpaid despite the heavy workload may cause the workers to show depression, negative self-concept, and somatization symptoms. Being exposed to negative attitudes of their employer and harsh climatic or shelter conditions and having cultural conflicts in their working environment may cause the workers to show anxiety and hostility symptoms. It was found after reviewing the literature that the mean scores previous in this study were higher than the mean scores in other studies conducted with adult participants and parallel to the mean scores in the studies conducted with agricultural workers [5, 6, 15, 17, 19].

Examining the mental status of the SAW by gender, this study found that female participants had higher scores than males regarding all symptoms except for hostility. Nearly all psychiatric epidemiological studies support this result [20-22]. Similarly, Şimşek et al.6 found that the mental health prevalence of female SAW was 1.4 times higher than that of male SAW. This may be because of the effects of gender roles in the patriarchal region. Women receive less payment than men although they do the same work especially in unskilled jobs (such as agricultural work) [23]. In addition, being away from their families or social support systems deepens women's need for basic trust. This need and discrimination may harm women's sense of self and cause them to have a depressive and/or anxious state of mind.

This study found that the participants who were married, worked as an agricultural worker for long years, and had lower education levels had significantly higher scores on the somatization subscale. Somatization may convert an individual's personal or social problems into physical symptoms [24]. Individuals with lower education levels are commonly unable to produce solutions for their problems or at a disadvantage reaching solution sources [25]. This situation may also be related to the severe somatization symptoms that the SAW with lower education levels experienced due to the problems with their social and working life. Married individuals are more likely to have problems due to the effects of their family dynamics and working conditions. Because increasing problems may also increase the pressure on them, these individuals may have more coping-related difficulties. The fact that the married SAW showed more somatization symptoms may be related to the problems they had in more than one field. Dığrak et al. [16] conducted a study with adults and found consistent results with this study regarding marriage and lower

Table 3. Comparison of the BSI subscales Scores of the SAW by their characteristics.

			BSI Subscales									
Characteristics		n	Anxiety		Depression		Negative Self-concept		Somatization		Hostility	
			$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Gender	Male	131	0.80	0.65	1.14	0.78	1.19	0.71	0.74	0.69	1.33	0.76
	Female	169	0.98	0.61	1.44	0.72	1.16	0.65	1.01	0.70	1.20	0.71
	t, p		t=2.552 p=0.011		t=-.457 p=0.001		t=0.349 p=0.727		t=-3.299 p=0.001		t=1.484 p=0.139	
Marital Status	Married	197	0.90	0.63	1.34	0.77	1.21	0.68	0.97	0.68	1.28	0.69
	Single	103	0.92	0.65	1.26	0.74	1.10	0.65	0.76	0.74	1.22	0.82
	t, p		t=-.252 p=0.801		t=0.798 p=0.425		t=1.281 p=0.201		t=2.483 p=0.016		t=0.678 p=0.505	
Education Status	Illiterate	95	0.87	0.65	1.25	0.70	1.11	0.54	1.06	0.75	1.20	0.65
	Primary School	86	0.90	0.63	1.36	0.76	1.24	0.74	0.92	0.66	1.23	0.70
	Middle School	44	0.93	0.64	1.37	0.79	1.22	0.62	0.78	0.63	1.32	0.75
	High School	45	0.93	0.58	1.34	0.83	1.17	0.81	0.70	0.73	1.26	0.90
	University and Above	30	0.92	0.72	1.25	0.78	1.10	0.73	0.76	0.68	1.45	0.83
	F, p		F=0.107 p=0.980		F=0.398 p=0.810		F=0.519 p=0.722		F=2.744 p=0.029		F=0.768 p=0.547	
Family Type	Nuclear Family	187	0.87	0.63	1.29	0.73	1.11	0.63	0.86	0.71	1.24	0.74
	Extended Family	113	0.96	0.64	1.39	0.79	1.26	0.73	0.94	0.69	1.29	0.74
	t, p		t=-1.251 p=0.212		t=-1.431 p=0.154		t=-1.887 p=0.060		t=-0.916 p=0.360		t=-0.599 p=0.550	
Have a Chronic Disease	Yes	64	1.03	0.71	1.44	0.74	1.32	0.68	1.44	0.73	1.47	0.66
	No	236	0.87	0.61	1.28	0.76	1.13	0.67	0.75	0.62	1.20	0.74
	t, p		t=1.753 p=0.081		t=1.492 p=0.137		t=2.044 p=0.042		t=7.493 p<0.001		t=2.614 p=0.009	
Working Time as a Seasonal Agricultural Worker	Less than 5 years	93	0.91	0.70	1.32	0.81	1.13	0.70	0.78	0.74	1.29	0.89
	6-10 years	93	0.95	0.62	1.40	0.76	1.22	0.76	0.86	0.68	1.28	0.71
	11-15 years	42	0.82	0.54	1.17	0.79	1.11	0.67	0.83	0.63	1.15	0.57
	16-20 years	34	0.86	0.62	1.35	0.68	1.12	0.50	0.98	0.68	1.13	0.59
	21 years and above	38	0.90	0.63	1.21	0.66	1.24	0.52	1.26	0.72	1.36	0.67
	F, p		F=0.331 p=0.857		F=0.889 p=0.465		F=0.439 p=0.781		F=3.534 p=0.008		F=0.722 p=0.578	
Happy with Their Job	Yes	85	0.80	0.62	1.17	0.71	1.11	0.52	0.81	0.74	1.08	0.60
	No	215	0.94	0.64	1.37	0.77	1.19	0.73	0.93	0.69	1.33	0.77
	t, p		t=-1.704 p=0.089		t=-2.037 p=0.043		t=-0.973 p=0.331		t=-1.230 p=0.220		t=-2.681 p=0.008	
Mental Health Perception Status	Good	113	0.65	0.50	1.01	0.63	0.86	0.54	0.66	0.59	1.00	0.61
	Moderate	59	0.72	0.52	1.21	0.74	1.10	0.56	0.76	0.55	0.98	0.48
	Poor	128	1.21	0.67	1.63	0.75	1.48	0.70	1.16	0.77	1.61	0.79
	F, p		F=31.559 p<0.001*		F=23.292 p<0.001*		F=30.764 p<0.001*		F=17.815 p<0.001*		F=30.846 p<0.001*	
			Median	Percentiles 25th 75th	Median	Percentiles 25th 75th	Median	Percentiles 25th 75th	Median	Percentiles 25th 75th	Median	Percentiles 25th 75th
Income Status	Good	11	0.76		1.16		0.83		0.44		1.28	
	Moderate	155	0.76	0.38 1.30	1.16	0.75 1.83	1.08	0.66 1.58	0.77	0.33 1.33	1.14	0.71 1.71
	Poor	134	0.76		1.25		1.20		0.77		1.14	
	X^{2KW}, p		X^{2KW}=0.541 p=0.763		X^{2KW}=2.096 p=0.351		X^{2KW}=1.487 p=0.475		X^{2KW}=0.289 p=0.865		X^{2KW}=0.119 p=0.942	
Stay in the Field	Tent		0.76	0.38 1.30	1.16	0.75 1.83	1.08	0.66 1.58	0.77	0.33 1.33	1.14	0.71 1.71
	Housing		0.88		1.41		1.08		0.66		1.57	
	Z, p		Z=-2.252 p=0.024		Z=-1.536 p=0.124		Z=-0.855 p=0.392		Z=-1.257 p=0.209		Z=-1.729 p=0.084	

*Post hoc (LSD) test applied.

education levels. In addition, high somatization scores of the individuals who have worked as an agricultural worker for long years suggest that they are physically and mentally exhausted and thus have a lower capacity to cope with challenging conditions in a healthily.

This study found that the presence of chronic diseases was another factor that might negatively affect the mental health of the SAW. The participants with chronic diseases had significantly higher scores on the somatization, negative self-concept, and hostility subscales. Chronic disease is an ongoing health problem that limits one's physical, social, and psychological life [26]. Şimşek et al. [6] found that the presence of chronic diseases was one of the important predictors of mental health. Individuals with chronic diseases have ongoing somatic complaints [16,26]. High somatization scores of the SAW may be related to the potential decrease in their coping capacities depending on their working conditions. In addition, these ongoing symp-

Table 4. Comparison of the Mean GSI, PST, and PSDI scores of the seasonal agricultural workers by their characteristics.

Characteristics		n	GSI		PST		PSDI	
			$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Gender	Male	131	1.02	0.61	25.14	11.44	2.10	0.54
	Female	169	1.16	0.56	29.22	10.50	2.06	0.52
	t, p		t=2.009 p=0.045		t=3.208 p=0.001		t=0.611 p=0.541	
Marital Status	Married	197	1.13	0.57	27.81	10.55	2.10	0.52
	Single	103	1.05	0.62	26.72	12.06	2.03	0.54
	t, p		t=1.107 p=0.269		t=0.807 p=0.420		t=1.193 p=0.234	
Education Status	Illiterate	95	1.09	0.53	27.22	9.83	2.08	0.49
	Primary School	86	1.13	0.59	27.95	11.39	2.08	0.53
	Middle School	44	1.12	0.59	27.90	12.38	2.10	0.46
	High School	45	1.08	0.67	27.13	11.27	2.00	0.58
	University and Above	30	1.08	0.63	26.46	12.31	2.13	0.70
	F, p		F=0.091 p=0.985		F=0.140 p=0.967		F=0.288 p=0.886	
Family Type	Nuclear Family	187	1.06	0.57	26.25	10.95	2.10	0.56
	Extended Family	113	1.17	0.60	29.41	10.08	2.04	0.48
	t, p		t=1.533 p=0.126		t=2.414 p=0.016		t=0.926 p=0.355	
Have a Chronic Disease	Yes	64	1.32	0.57	31.25	9.64	2.20	0.53
	No	236	1.04	0.58	26.41	11.25	2.04	0.53
	t, p		t=3.329 p=0.001		t=3.141 p=0.002		t=2.135 p=0.035	
Working Time as a Seasonal Agricultural Worker	Less than 5 years	93	1.08	0.66	25.20	11.87	2.20	0.59
	6-10 years	93	1.14	0.60	28.86	11.29	2.04	0.53
	11-15 years	42	1.01	0.55	26.90	11.95	1.95	0.52
	16-20 years	34	1.09	0.47	28.02	8.97	2.03	0.43
	21 years and above	38	1.17	0.50	29.52	8.56	2.06	0.47
	F, p		F=0.514 p=0.725		F=1.727 p=0.144		F=1.962 p=0.100	
Happy with Their Job	Yes	85	0.99	0.52	25.64	10.02	2.03	0.45
	No	215	1.14	0.60	28.14	11.43	2.10	0.56
	t, p		t=2.003 p=0.046		t=1.758 p=0.080		t=1.056 p=0.292	
Mental Health Perception Status	Good	113	0.83	0.45	22.07	9.39	1.96	0.53
	Moderate	59	0.96	0.48	25.38	9.73	1.96	0.41
	Poor	128	1.41	0.59	33.13	10.40	2.23	0.55
	F, p		F=39.999 p=0.001*		F=39.012 p=0.001*		F=9.970 p=0.001*	
			Median	Percentiles 25th 75th	Median	Percentiles 25th 75th	Median	Percentiles 25th 75th
Income Status	Good	11	0.92		29.00		2.06	
	Moderate	155	0.98	0.66 1.52	26.00	19.00 36.00	2.02	1.71 2.41
	Poor	134	1.03		27.00		2.04	
	X^{2KW}, p		X^{2KW}=0.940 p=0.625		X^{2KW}=0.458 p=0.795		X^{2KW}=0.300 p=0.861	
Stay in the Field	Tent	272	147.69	0.66 1.52	146.53	19.00 36.00	150.14	1.71 2.41
	Housing	28	177.84		189.07		153.98	
	Z, p		Z=-1.752 p=0.080		Z=-2.472 p=0.013		Z=-0.223 p=0.823	

GSI: Global Severity Index, PST: Positive Symptom Total, PSDI: Positive Symptom Distress Index
*Post hoc (LSD) test applied.

toms may severely harm individuals' self-esteem and cause hostile attitudes such as anger and aggressiveness [27,28].

Intense and long working hours are among the most important reasons of why being a seasonal agricultural worker is really difficult. Having a tough job naturally reduces the job satisfaction [29]. The findings obtained in this study showed that approximately 72% of the SAW were not happy with their job. This dissatisfaction may affect individuals in many aspects. This study also found that the the number of SAW who were not happy with their job had significantly higher scores on the depression and hostility subscales. Challenges related to their working

conditions and their job by nature may cause individuals to feel depressive. In addition, negative attitudes of employers may lead to hostility among these individuals.

Conclusion

It can be concluded that the SAW had psychopathological tendencies. Therefore, it is critical to develop a mobile health care service system to assess the mental health status of the SAW in their working environment and implement training programs towards coping strategies regarding the problems that the SAW experience.

This study found that the anxiety and depression subscales were affected by gender; the hostility subscale was affected by marital status and education level; and the negative self-concept, somatization, and hostility subscales were affected by the presence of chronic diseases. In addition, the anxiety, depression, negative self-concept, somatization, and hostility subscales were affected by the perception of mental health of the SAW.

Given that the mental health of the SAW was affected by many factors, it can be recommended that mental health services for the SAW should be integrated into the general health services provided in rural and urban areas. Given these factors, health care services for the SAW in their working environment, and mobile health care services provided by health care professionals should ensure the continuity.

Limitations

The results of the study cannot be generalized to all seasonal agricultural workers in Şanlıurfa. The results of the study are limited to the MTIs in the specified family health center region.

Ethical approval

Ethical approval for this study was obtained from the Harran University Clinical Research Ethics Committee (26.04.2021-09/26).

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