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ORIGINAL ARTICLE

Medicine Science International Medical Journal

Medicine Science 2023;12(1):100-7

# The relationship between mental well-being and healthy lifestyle behaviors of seasonal agricultural worker women

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Received 14 September 2022; Accepted 01 December 2022
Available online 25.01.2023 with doi: 10.5455/medscience.2022.09.206



**Abstract**

The study was conducted to examine the relationship between the mental well-being of Seasonal Agricultural Worker (SAW) women and their Healthy Lifestyle Behaviors (HLBs). The study utilizes the descriptive research design. The study was conducted between November 2020 and December 2020 in Turkey, in a Family Health Center-supervised region, where SAW women were concentrated. The sample includes 355 women. The Personal Information Form, Warwick–Edinburgh Mental Well-Being Scale (WEMWBS), and Healthy Lifestyle Behaviors Scale II (HLBS II) were used to collect data. Descriptive statistics (number, percentage, mean), independent samples t-test, Mann Whitney U test, one-way analysis of variance, Kruskal Wallis analysis, Pearson Correlation Test, and Simple Linear Regression Analysis were also used in the analyses of the data. There was a positive, strong, and significant correlation between mental well-being and HLBs of SAW women. There was a significant difference between the WEMWBS total mean scores of SAW women according to their economic status and family type. There was a significant difference between the total mean score of the HLBS II according to income level and family type of SAW women ($p<0.05$). As a result, it has been determined that there is a relationship between the HLBs of SAW women and their mental well-being. It may be recommended to organize training programs and provide mobile health services to enhance HLBs and increase the mental well-being levels of SAW women.

**Keywords:** Seasonal agricultural worker women, mental well-being, healthy lifestyle behaviors

## Introduction

Seasonal agricultural workers (SAWs), an integral part of agricultural production, constitute 450 million of the 1.1 billion agricultural workforces worldwide [1]. Nevertheless, SAWs cannot take advantage of various opportunities, including housing, health, and education available throughout the world [2]. They experience setbacks in accessing healthcare services due to the challenges posed by the working conditions. Therefore, their mental well-being and healthy lifestyle behaviors (HLBs) can be adversely affected.

According to the World Health Organization (2004), mental health is "a state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can make a contribution to his or her community" [3]. In the literature, it has been reported that individuals with high levels of mental well-being have better

**CITATION**
Ersin F, Kartal M, Kaya R. The relationship between mental well-being and healthy lifestyle behaviors of seasonal agricultural worker women. Med Science. 2023;12(1):100-7

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DOI: 10.5455/medscience2022.09.206

psychological and physical health and higher quality of life [4, 5]. It has also been suggested that such individuals are more creative, have better relationships, is more productive in their working environment, and live longer [6]. Therefore, mental well-being is an important factor at the individual, environmental, and social levels [7,8]. Furthermore, SAW, defined as the heart of sustainable agricultural production, is an important target group concerned with acquiring HLBs [9]. SAW women not only work in the agricultural fields but also fulfill their responsibilities as mothers and wives. They may experience problems in adopting HLBs due to the burden of their responsibilities. In addition, the psychological and physical health of SAW women is adversely affected by the current COVID-19 pandemic combined with their difficult working conditions and responsibilities.

Xu et al. presented a significant relationship between mental well-being with psychological symptoms and depression [10]. However, the authors could not find relevant studies investigating the relationship between mental well-being and HLBs of SAW women. Therefore, in the present study, we aimed to investigate the relationship between the mental well-being and HLBs of SAW women.

## Materials and Methods

Permissions required for conducting the study were obtained from the Clinical Research Ethics Committee of Harran University (dated 27.01.2020, session numbered 02, and decision numbered 02,27), the relevant institution, and the individuals who participated in the study.

### Procedure

The study utilizes the descriptive research design. It was conducted between November 2020 and December 2020 in Turkey, in a Family Health Center-supervised region, where SAW women were concentrated. The study population included 4.623 women over the age of 18 years, living in a Family Health Center supervised region in Turkey. The convenience sampling method was used to collect data from the determined population. The sample included 355 women. SAW women were visited in their houses. Data from the study was collected by the researchers through face-to-face interviews under necessary precautions regarding the pandemic (mask, distance, and hygiene).

The Personal Information Form, Warwick–Edinburgh mental well-being scale (WEMWBS), and Healthy Lifestyle Behaviors Scale II (HLBS II) were used to collect data.

Personal Information Form: The form consists of 14 questions on sociodemographic characteristics and seasonal agricultural work [9,10].

Warwick–Edinburgh Mental Well-Being Scale (WEMWBS): The scale was developed by Tennant et al., to measure the mental well-being of individuals living in the United Kingdom [7]. The validity and reliability study of WEMWBS in Turkey was performed by Keldal [8]. The WEMWBS includes 14 items and addresses individuals' positive mental health, including psychological and subjective well-being. The scale is in the form of a 5-point Likert-type. A minimum of 14 and a maximum of 70 points can be taken from the scale. The scores associated with available responses are as follows: 1 =strongly disagree, 2= disagree, 3 =somewhat agree, 4 =agree, and 5 =completely agree. All the items included in the scale were positive. Reliability studies of the scale were performed with individuals aged 16 or more years. Accordingly, Cronbach's Alpha coefficient of the scale was 0.89. The test-retest reliability of the scale was performed on 124 individuals. The correlation coefficient was 0.83 as the tests were applied at a one-week time interval [8]. In the present study, Cronbach's alpha coefficient of the scale was 0.88.

Healthy Lifestyle Behaviors Scale II (HLBS II): The scale was developed by Walker et al. in 1987 and amended in 1996 [11]. Turkish validity and reliability study was conducted by Bahar et al. [12]. The scale, which is comprised of a total of 52 items and 6 subscales, investigates the HLBs of individuals. The subscales can be listed as nutrition (6 items), health responsibility (10 items), physical activity (5 items), interpersonal relationships (7 items), spiritual development (13 items), and stress management (7 items). All the items included in the scale are positive. The total score from the scale was referred to as the HLBs score. The available responses and associated points in the 4-point Likert-type scale are as follows: 1 =never, 2= sometimes, 3 =often, and 4 = regularly. The minimum and maximum scores are 52 and 208, respectively. Cronbach's alpha value was calculated as 0.94 [12]. In the present study, Cronbach's alpha coefficient of the scale was 0.91.

The Statistical Package for the Social Sciences software was used in the analysis of the data. Descriptive statistics (number, percentage, mean), independent samples t-test, Mann Whitney U test, one-way analysis of variance, Kruskal Wallis Analysis, Pearson Correlation test and Simple Linear Regression Analysis were also used in the analyses of the data. The Normality hypothesis was analyzed by the Kolmogorov–Smirnov test. The p-value of $<0.05$ was considered significant for the analyses.

## Results

Among SAW women participating in the present study, 27.9% of them were illiterate, 72.9% of them were married, 58.4% of them had moderate economic levels, 56.3% of them had nuclear families, 69.7% of them had children, 64.9% of them worked as SAWs for ≥6 years, and the mean age was 33.13±11.95. 89% of women did not engage in regular exercises, 24.7% of them smoked, 61.4% of them had moderate perceptions towards their health, 56.8% of them reported that they could access health services during work, and 45.3% of them did not have any health insurance (Table 1). There was a positive, strong, and significant correlation between mental well-being and HLBs of SAW women (Table 2). There was a significant difference between the WEMWBS total mean score of SAW women according to their

DOI: 10.5455/medscience2022.09.206

economic levels and family types ($p<0.05$) (Table 3). There was a significant difference between the mean scores of the HLBS II according to income levels and family types of SAW women ($p<0.05$) (Table 4). According to the results of the posthoc Tukey test, the presence of low-income levels and nuclear families accounted for the significant differences among SAW women. To identify the effects of the mental well-being of the participants on their HLBs, a simple linear regression analysis was conducted, and it was found that the regression model was statistically significant (F: 368.752, p: 0.000). The $R^2$ value representing the proportion of the variance for the predicted variable explained by the predictor variable in the regression model was calculated as 0.498. In this regard, mental well-being explained 49% of the total variance in the HLBs (R2: 0.498) (Table 5).

**Table 1.** The distribution of descriptive characteristics of seasonal agricultural worker (SAW) women

| Characteristics | | n | % |
|---|---|---|---|
| **Education Status** | Illiterate | 104 | 27.9 |
| | literate | 85 | 22.8 |
| | Primary School | 59 | 15.8 |
| | Middle School | 56 | 15.0 |
| | High School and Above | 69 | 18.5 |
| **Marital Status** | Married | 272 | 72.9 |
| | Single | 101 | 27.1 |
| | Good | 30 | 8.0 |
| **Economic Status** | Middle | 218 | 58.4 |
| | Bad | 125 | 33.5 |
| **Health Insurance** | Yes | 204 | 54.7 |
| | No | 169 | 45.3 |
| **Family Type** | Nuclear family | 210 | 56.3 |
| | Extended family | 150 | 40.2 |
| | Broken family | 13 | 3.5 |
| **Having a Child** | Yes | 260 | 69.7 |
| | No | 113 | 30.3 |
| **Worked as a Seasonal Agricultural Worker** | 1-3 year | 59 | 15.8 |
| | 4-6 year | 72 | 19.3 |
| | 6 years and older | 242 | 64.9 |
| **Exercising Regularly** | Yes | 41 | 11.0 |
| | No | 332 | 89.0 |
| **Smoking** | Yes | 92 | 24.7 |
| | No | 281 | 75.3 |
| **Perception of Health** | Good | 100 | 26.8 |
| | Middle | 229 | 61.4 |
| | Bad | 44 | 11.8 |
| **Access to Health Care** | Yes | 212 | 56.8 |
| | No | 161 | 43.2 |
| **Age** | Min-Max | Mean | SD |
| | 11-69 | 33.13 | 11.95 |

DOI: 10.5455/medscience2022.09.206

**Table 2.** The correlation between the seasonal agricultural worker (SAW) women's healthy lifestyle behaviors and the mean scores from the mental well-being scale

| | Healthy Lifestyle Behaviors Scale | Mental Well-Being Scale |
|---|---|---|
| **Min-Max** | 70.00-164.00 | 22.00-70.00 |
| **Mean-SD** | 117.87 ± 18.06 | 49.52 ± 9.67 |
| **r** | 0.706 | |
| **P** | 0.000 | |

**Table 3.** The comparison of mental well-being status of seasonal agricultural worker (SAW) women by socio-demographical characteristics

| Socio-Demographical Characteristics | | Mental Well-Being Scale | | | | |
|---|---|---|---|---|---|---|
| | | n | Mean | SD | Test | p |
| **Education Status** | Illiterate | 104 | 48.68 | 9.96 | F=0.397 | 0.811 |
| | literate | 85 | 50.40 | 8.12 | | |
| | Primary School | 59 | 49.30 | 9.30 | | |
| | Middle School | 56 | 49.87 | 11.21 | | |
| | High School and Above | 69 | 49.63 | 10.10 | | |
| **Marital Status** | Married | 272 | 50.09 | 9.22 | t=1.866 | 0.063 |
| | Single | 101 | 48.00 | 10.68 | | |
| **Economic Status** | Good | 30 | 54.03 | 7.28 | F=21.722 | 0.001 |
| | Middle | 218 | 51.37 | 9.00 | | |
| | Bad | 125 | 45.23 | 9.83 | | |
| **Family Type** | Nuclear family | 210 | 50.82 | 9.24 | F=4.935 | 0.008 |
| | Extended family | 150 | 48.07 | 9.89 | | |
| | Broken family | 13 | 45.30 | 11.01 | | |
| **Having a Child** | Yes | 260 | 50.00 | 9.43 | t=1.455 | 0.147 |
| | No | 113 | 48.42 | 10.16 | | |
| **Worked as a Seasonal Agricultural Worker** | 1-3 year | 59 | 50.47 | 9.85 | F=1.500 | 0.224 |
| | 4-6 year | 72 | 50.87 | 9.63 | | |

DOI: 10.5455/medscience2022.09.206

**Table 4.** The comparison of healthy lifestyle behaviors by socio-demographical features of seasonal agricultural worker women

| Socio-Demographical Characteristics | | Healthy Lifestyle Behaviors Scale II | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Health Responsibility | | Nutrition | | Spiritual Development | | Interpersonal relationships | | Stress Management | | Physical Activity | | Total Point | |
| | | n | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Education Status | Illiterate | 104 | 18.91 | 4.51 | 22.27 | 4.39 | 23.54 | 5.19 | 25.47 | 5.16 | 16.47 | 3.51 | 9.74 | 2.44 | 116.42 | 18.06 |
| | literate | 85 | 19.88 | 4.51 | 22.14 | 3.39 | 23.77 | 4.45 | 26.10 | 4.32 | 16.71 | 3.61 | 9.67 | 2.48 | 118.29 | 15.43 |
| | Primary School | 59 | 19.33 | 4.52 | 21.22 | 4.67 | 23.10 | 5.27 | 24.27 | 5.28 | 16.03 | 3.42 | 11.45 | 4.24 | 116.37 | 18.20 |
| | Middle School | 56 | 19.62 | 4.94 | 20.82 | 4.76 | 24.69 | 5.95 | 25.73 | 4.92 | 17.01 | 3.35 | 11.33 | 3.79 | 118.23 | 18.27 |
| | High School and Above | 69 | 20.13 | 4.73 | 19.88 | 4.72 | 24.21 | 5.71 | 24.84 | 5.84 | 17.53 | 3.74 | 13.21 | 4.10 | 120.56 | 20.74 |
| Statistical Variable | | | p=0.460 F=0.907 | | p=0.003 F=4.032 | | p=0.507 F=0.829 | | p=0.237 F=1.388 | | p=0.151 F=1.692 | | p=0.001 KW=48.870 | | p=0.615 F=0.667 | |
| Marital Status | Married | 272 | 19.84 | 4.70 | 22.11 | 4.22 | 23.92 | 5.05 | 25.76 | 4.99 | 16.69 | 3.51 | 10.50 | 3.35 | 118.63 | 17.83 |
| | Single | 101 | 18.70 | 4.29 | 19.53 | 4.43 | 23.56 | 5.81 | 24.23 | 5.29 | 16.84 | 3.69 | 11.89 | 3.99 | 115.83 | 18.59 |
| Statistical Value | | | p=0.034 t=2.125 | | p=0.001 t=5.178 | | p=0.560 t=0.584 | | p=0.010 t=2.574 | | p=0.731 t=0.345 | | p=0.001 Z=-3.553 | | p=0.182 t=1.336 | |
| Economic Status | Good | 30 | 20.43 | 4.57 | 23.06 | 3.83 | 25.30 | 4.06 | 27.00 | 4.04 | 16.90 | 3.55 | 11.56 | 4.46 | 124.26 | 17.22 |
| | Middle | 218 | 20.23 | 4.72 | 21.79 | 4.48 | 24.33 | 5.31 | 25.94 | 5.30 | 17.17 | 3.42 | 11.00 | 3.63 | 120.49 | 18.35 |
| | Bad | 125 | 18.08 | 4.10 | 20.36 | 4.24 | 22.57 | 5.23 | 23.92 | 4.70 | 15.93 | 3.68 | 10.50 | 3.25 | 111.79 | 16.14 |
| Statistical Value | | | p=0.001 F=9.646 | | p=0.001 F=6.650 | | p=0.003 F=5.883 | | p=0.001 F=8.195 | | p=0.008 F=4.948 | | p=0.308 KW=2.355 | | p=0.001 F=11.914 | |
| Family Type | Nuclear family | 210 | 20.15 | 4.79 | 21.97 | 4.24 | 24.68 | 5.20 | 26.29 | 5.14 | 17.30 | 3.66 | 10.89 | 3.79 | 121.04 | 18.52 |
| | Extended family | 150 | 19.10 | 4.07 | 20.91 | 4.50 | 22.88 | 4.97 | 24.34 | 4.72 | 16.12 | 3.29 | 10.98 | 3.37 | 114.36 | 16.80 |
| | Broken family | 13 | 14.38 | 4.11 | 18.23 | 4.67 | 20.76 | 6.80 | 21.61 | 5.59 | 14.69 | 3.01 | 9.38 | 1.66 | 107.30 | 13.28 |
| Statistical Value | | | p=0.001 F=11.200 | | p=0.002 F=6.180 | | p=0.001 F=7.637 | | p=0.001 F=10.430 | | p=0.001 F=7.314 | | p=0.264 KW=2.665 | | p=0.001 F=8.647 | |
| Having a Child | Yes | 260 | 19.70 | 4.67 | 22.16 | 4.26 | 23.92 | 5.08 | 25.71 | 4.89 | 16.65 | 3.50 | 10.43 | 3.27 | 118.37 | 18.01 |
| | No | 113 | 19.15 | 4.49 | 19.70 | 4.32 | 23.59 | 5.67 | 24.50 | 5.52 | 16.92 | 3.68 | 11.91 | 4.04 | 116.73 | 18.18 |
| Statistical Value | | | p=0.292 t=1.055 | | p=0.001 t=5.080 | | p=0.574 t=0.562 | | p=0.036 t=2.110 | | p=0.513 t=0.655 | | p=0.001 Z=-3.709 | | p=0.420 t=0.807 | |
| Worked as a Seasonal Agricultural Worker | 1-3 Year | 59 | 20.93 | 6.03 | 21.22 | 4.83 | 24.69 | 5.26 | 25.28 | 5.83 | 16.86 | 3.46 | 12.18 | 4.24 | 121.18 | 23.29 |
| | 4-6 year | 72 | 20.38 | 4.29 | 21.01 | 4.29 | 24.37 | 5.22 | 26.73 | 5.38 | 17.13 | 3.61 | 11.19 | 3.93 | 120.77 | 16.51 |
| | 6 years and Above | 242 | 18.93 | 4.20 | 21.58 | 4.37 | 23.45 | 5.26 | 24.95 | 4.78 | 16.58 | 3.56 | 10.46 | 3.21 | 116.21 | 16.87 |
| Statistical Value | | | p=0.002 F=6.106 | | p=0.587 F=0.533 | | p=0.164 F=1.818 | | p=0.034 F=3.427 | | p=0.492 F=0.712 | | p=0.006 KW=10.369 | | p=0.052 F=2.980 | |

DOI: 10.5455/medscience2022.09.206

**Table 4.** The results of the regression analysis conducted to find out the effect of seasonal agricultural worker women's Mental Well-Being on their Healthy Lifestyle Behaviors perceptions.

| Predictor variable | | B | Std. Dev. | ß | t | p | R | $R^2$ | F | Model p |
|---|---|---|---|---|---|---|---|---|---|---|
| **Healthy Lifestyle Behaviors** | Constant | 52.580 | 3.465 | | 15.176 | 0.000 | 0.706 | 0.498 | 368.752 | 0.000 |
| | Mental Well-Being | 1.313 | 0.069 | 0.706 | 19.203 | 0.000 | | | | |

## Discussion

The present study aims to investigate the relationship between mental well-being and HLBs of SAW women in a province located in southeastern Turkey. To the best of our knowledge, this is the first study to investigate the relationship between mental well-being and HLBs of SAW women. Therefore, the results of the study are discussed considering previous studies with different samples.

In the present study, a positive correlation is determined between HLBs and the mental well-being of SAW women. Mental well-being explains 49% of the total variance in HLBs, and it provides benefits to both physical [13] and mental health [14, 15]. Furthermore, other studies in the literature have suggested that individuals are required to maintain HLBs, and HLBs preserve and improve the well-being of individuals [16,17]. Similarly, other studies have reported that healthy lifestyle interventions positively influence mental well-being [18,19]. A study on adolescents has suggested that HLBs are associated with improved mental health outcomes [20]. Studies on individuals with heart failure and coronary artery disease have found that there is a relationship between feelings of hopelessness [21] and unhappiness [22] and HLBs. A study on university employees has presented that individuals with an active lifestyle sustain higher levels of mental well-being [23]. Another study on university employees has found that physical activity is associated with mental well-being [24]. Therefore, the results of the present study are consistent with the literature.

The current study has demonstrated that the WEMWBS total mean score of SAW women with good income levels is higher than those with moderate or low levels of income. In addition, there is a statistically significant difference between the WEMWBS total mean scores of SAW women according to their levels of income. Similar to the results of this study, a study conducted with nurses has found that the WEMWBS total mean scores of the nurses with good income levels are higher than those with moderate or low levels of income [25]. Similarly, in a study conducted in the United Kingdom, it has been found that there is a statistically significant difference between the income levels of the general population and the total mean scores from the WEMWBS [26]. In a study conducted with caregivers, it has been presented that the mental well-being of individuals who stated that their income levels are moderate, unlike this study, is better [27]. SAW women work both in the agricultural field and at home/tent. However, they are not paid for their labor; rather, they are merely considered a labor force. There is no gain in economic terms; therefore, the health status of those women can be negatively affected. Hence, the results have shown that the WEMWBS total mean score of SAW women with better economic levels is higher than that of women with moderate or low economic status.

Additionally, the WEMWBS total mean score of SAW women with nuclear families is higher compared to women with extended families because the likelihood of support for each member of the family also increases in nuclear families. In the literature, it has been reported that adequate social support is associated with the mental health of individuals [28, 29]. The fact that family members interact with each other during their spare time may account for the higher WEMWBS total mean score of SAW women with nuclear families. Furthermore, the fact that living in a tent in an agricultural field setting is more difficult for larger families could be associated with better mental well-being experienced in a nuclear family.

Moreover, the WEMWBS total mean score of SAW women who have worked as SAWs for ≥6 years is lower than those who have worked for <6 years. Individuals might have a perception of the burden regarding the responsibilities of working as SAWs. This might also have affected the mental well-being of SAW women.

In the present study, it has been found that the HLBS II total means a score of SAW women with high school or higher is greater. Nevertheless, there is no statistically significant difference between the HLBS II total mean scores according to educational levels. A study on migrant women has demonstrated that women with undergraduate degrees have a higher HLBS II total mean score (30). A similar study has found no statistically significant difference between the HLBS II total mean scores according to the participants' educational levels [30]. Unlike the results of this study, in a study on young SAWs, the HLBS II total mean scores of participants who graduated from primary school are higher [9]. Education, as one of the most essential requirements of modern society, is a prerequisite for a productive and better life. Therefore, the higher HLBS II total mean score of SAW women with an educational level of high school or higher is essential for the indicated level of awareness regarding the HLBs.

The present study has found that The HLBS II total means score significantly increases with higher income levels. Demir and Arıöz have presented similar results in their study (30). In another study on women, those with very good and good income levels have higher HLBS II total mean scores compared to other

DOI: 10.5455/medscience2022.09.206

income groups [31]. A higher income may facilitate access to health-promoting behaviors. Therefore, it is an expected result that the HLBS II total mean score increases as the income levels of SAW women increases.

Furthermore, the present study has shown that the HLBS II total means a score of SAW women with nuclear families is higher than women with extended and broken families. In another study, it has been presented that the HLBS II total means the score of women with nuclear families is higher compared to that of women with extended families [30]. SAW women assume fewer responsibilities in nuclear families than in extended families. Therefore, the likelihood of demonstrating HLBs would increase because such women would have more time to spare for themselves.

The current study has revealed that the higher number of working years of SAW women is associated with lower total mean scores in the HLBS II's subscales of health responsibility, interpersonal relationships, and physical activity. This can be explained by the fact that SAW women assume further responsibilities as their working years increase; therefore, they could not spare adequate time for interpersonal relationships and physical activities. In addition, the pandemic might also have contributed to the decrease in interpersonal relations.

## Conclusion

There was a positive, high-level, and significant correlation between the mental well-being and HLBs of SAW women.

Therefore, some recommendations can be made considering the results of the present study:

- It would be beneficial to organize training programs to improve the HLBs of SAW women and increase their mental well-being levels and provide mobile healthcare services that would allow the implementation of the aforementioned programs in the working environments.
- It would be useful to develop mobile applications to facilitate access to the aforementioned educational content or programs.
- It would be advantageous to conduct studies involving larger samples of health behaviors and factors affecting the health behaviors of SAW women.
- It would be useful to perform qualitative studies to investigate the factors that prevent the achievement of HLBs and negatively affect the mental well-being of SAW women.

**Conflict of interests**
*The authors declare that there is no conflict of interest in the study.*

**Financial Disclosure**
*The authors declare that they have received no financial support for the study.*

**Ethical approval**
*Permissions required for conducting the study were obtained from the Clinical Research Ethics Committee of Harran University (dated 27.01.2020, session numbered 02, and decision numbered 02, 27), the relevant institution, and the individuals participating in the study.*

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