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ORIGINAL ARTICLE

Investigation of the relationship between spiritual well-being and quality of life in breast cancer patients

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Abstract

Aim This study aimed to investigate the relationship between spiritual well-being and quality of life, for breast cancer patients.

Subject and methods This cross-sectional study was conducted with 91 breast cancer patients treated at Fırat University Hospital, Elazığ/Turkey in 2021. A personal information form was used in the first part of the questionnaire. In the second part, the European Cancer Treatment and Organizing Committee Quality of Life Scale (EORTC QLQ-C30) was used to measure the quality of life (QoL) and the Spiritual Well-Being Scale (FACIT-Sp12) was used to measure the spiritual well-being of the breast cancer patients.

Results The mean age of patients was 54.38 ±11.68. The results showed that the participants had an overall global QoL score of 44.76 (SD = 18.96). Role function had the highest score (60.32 (SD = 8.87)) in functional sub-dimension. The highest score in symptoms sub-dimension belonged to pain (58.51±23.01) and financial impact (71.54±23.65). FACIT-Sp12 score of 24.79 (SD = 4.80). There is a positive relationship between each domain of FACIT-Sp12 and the QLQ-C30 ($p < 0.005$) except symptom sub-dimension. The correlation coefficient showed a negative correlation between symptom sub-dimension and each of the sub-dimensions of FACIT-Sp12 and the QLQ-C30 ($p < 0.001$).

Conclusion The results of our study showed that the level of quality of life and spiritual well-being of breast cancer patients were found to be poor. Considering the relationship between spirituality and quality of life, it is necessary to meet the needs of breast cancer with more psycho-spiritual interventions.

Keywords Breast Cancer · Quality of life · Spiritual well-being · Patient

Introduction

Breast cancer is the second most frequent type of cancer in the world after lung cancer and it is mostly seen in women. Breast cancer increases with advanced age and 70% of women diagnosed are aged 50 and over. As a result of the statistical evaluation made on cancer in 2020, GLOBOCAN announced that breast cancer is the most commonly diagnosed cancer type worldwide at 11.7%. In terms of mortality level, breast cancer ranks fifth at 6.9% (Globocan 2020; American Cancer Society 2020). Breast cancer is also the most frequently occurring cancer among women in Turkey. According to Turkey Cancer Statistics in 2017, breast cancer ranks first with 47.7% in the graph of age-standardized rates of the ten most common cancers in women (Turkey Cancer Statistics 2017).

Breast cancer patients experience physical, psychological, social and spiritual changes after being diagnosed with the disease. Anxiety, despair, mental confusion, and even suicide attempts were all linked to these alterations. It was reported that spirituality is a vital force and resource for cancer patients to adjust to their condition (Cheng et al. 2019). Spiritual well-being (SpWB) is critical in instilling meaning and purpose, improving physical and mental health outcomes, and maintaining social roles and relationships during the breast cancer experience; thus, increasing the patient's QoL (Fitri et al. 2022).

Quality of life (QoL) is the perception of health as being physically, socially, and spiritually well. According to the World Health Organization (WHO n.d.), quality of life is 'the individual's determination of his/her lifestyle and perception with his/her culture and values' (WHO). QoL is a multifaceted concept with cognitive, social, emotional,

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physical and spiritual domains. It also reflects the extent to which an individual's well-being in these domains is affected by the disease or related treatment (Aaronson et al. 1991; Verdugo and Schalock 2009; Spiegel et al. 1989).

Among the various components of quality of life, spirituality has received more attention in recent years (Thomas-MacLean 2004). Spirituality is the peace of the individual and the purpose of the individual's life, and it includes beliefs about life's meaning (Kissane et al. 2003; Zebrack 2000). Specific characteristics of a strong spiritual belief include hope, optimism, absence of regret and satisfaction with life. Accordingly, it is stated that adherence to cancer treatment increases as well as quality of life (Zebrack 2000; Stefanek et al. 2005; Purnell and Andersen 2009; McCoubrie and Davies 2006; Tarakeshwar et al. 2006). The objective of our study was to examine the relationship between quality of life and spiritual well-being in breast cancer patients. The second objective was to determine the level of quality of life and spiritual well-being of breast cancer patients, and also analyse the interaction of some socio-demographic factors.

Methods

Study design and participants

This research is a descriptive analysis and cross-sectional study. Participants included women who were > 18 years with newly diagnosed breast cancer and receiving chemotherapy in Fırat University Hospital Oncology Department and Out-patient Chemotherapy Unit, from October to December 2021.

The sample size was calculated as 87 individuals with the expectation of a 6-unit difference between the mean score of the Quality-of-Life scale in breast cancer patients and our study, with 0.05 (1-α), 95% test power (1-β) (Jafari et al. 2013).

The inclusion criteria for the study were volunteering to participate in the research, not having a diagnosed psychiatric illness, and being a female breast cancer patient. Exclusion criteria for the study were having a communication barrier and patients who were under 18 years old.

Data collection tool

Data were collected through the administration of questionnaires. The researchers created a questionnaire from a pre-existing one for this investigation. The questionnaire is divided into two sections. The first section provides demographic data, such as age, education level, current marital status, employment status, family, location of residence and income level, and disease-related data, for example, cancer diagnosis and cancer knowledge.

The second section focuses on spiritual qualities and quality of life. The European Organization for Research and Treatment of Cancer Quality of Life (EORTC QLQ-C30) (version 3) questionnaire was used to measure the quality of life (QoL), while Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp-12), a 12-item questionnaire, was used to measure the spiritual well-being of the breast cancer patients.

Instruments

The EORTC QLQ-C30; developed by Aaronson et al. (1993), consists of 30 questions (Aaronson et al. 1993). It consists of three subscales: Functional, General Health Status and Symptom Scale. Functional sub-dimensions; physical (questions 1–5), role (questions 6 and 7), cognitive (questions 20 and 25), emotional (questions 21–24) and social (questions 26 and 27). Symptoms sub-dimensions; fatigue (questions 10, 12 and 18), pain (questions 9 and 19), nausea and vomiting (questions 14 and 15), shortness of breath (question 8), sleep disturbance (question 11), anorexia (question 13), constipation (question 16), diarrhea (question 17) and financial impact (question 28). General Health sub-dimensions consist of questions 29 and 30.

The scores of this scale range from 0 to 100 with a higher score representing a higher ('better') level of functioning in the first section and a higher ('worse') level of symptoms for the second section. High score from functional scales; it means that healthy functional level. High score from the general health status scale; it means high quality of life. High score on the symptom scale; it shows that the symptoms are experienced intensely and the problem level is high. The researcher used translated and validated Turkish version questionnaire (Guzelant et al. 2004).

To assess the spirituality of the participants, we used the FACIT-Sp12 questionnaire that consists of 12 items and 3 three subdomains; peace (1, 4, 6, 7th item), meaning (2, 3, 5, 8th items) and faith (9, 10, 11, 12th items). Answers are scored on a 5-point Likert scale from 0 to 4 (0–Not at all, 1–Very little, 2–A little, 3–Quite a lot, 4–Very much). Each subscale is evaluated in the range of 0–16 points. The scale ranges from 0–48, with higher scores representing greater spiritual well-being. Cronbach's Alpha total score was 0.87; Cronbach's Alpha varies between 0.78–0.93 for the sub-dimensions of meaning, peace and faith. The instrument is reliable and was validated in the Turkish language, to give a comprehensive assessment of spirituality in this research and clinical practice in general (Aktürk et al. 2017).

Data analysis

Data were analysed using the SPSS 21 (Statistical Package for Social Sciences) statistical package program. The conformity of the continuous variables to the normal distribution was checked using the Kolmogorov Smirnov test. Spearman correlation analysis was used for the relationship between spiritual well-being and quality of life, independent T-test or Mann–Whitney U test was used for comparison of independent groups. When the scale score averages comply with the normal distribution, it was given as mean and standard deviation and those that did not were given as median and min–max. Analyses were evaluated at a significance level of $p < 0.05$.

Ethical consideration

This study was approved by the ethics committee for non-interventional studies of Fırat University (2021/09-43). Written consents were also obtained from all the participants and their identities were kept confidential.

Results

The demographic data of the participants are shown in Table 1. The mean age of patients was 54.38 ±11.68; 25.3% (n = 23) of the participants were age 20–45 years and 74.7% (n = 68) were 46–85 years. Most of the participants were married 82.4 % (n = 74); 41.8% (n = 38) of the population were primary schoolers; 29.7% (n = 27) did not attend school and 28.6% (n = 26) went to high school/university, most of the participants, 91.2% (n = 83), were not working.

The scale of QoL-C30 and FACIT-Sp 12 mean scores of the participants are shown in Table 2. The result shows that the participants had a global QoL score of 44.76 (SD = 18.96). In the functional domain, role functioning has the highest score with a mean of 60.32 (SD = 18.87) compared to the other domains, and emotional functioning had the lowest score with a mean of 25.73 (SD = 23.46), while in symptoms, financial impact with a highest mean score of 71.54 (SD = 23.65) and diarrhoea with a lowest mean score of 21.61 (SD = 34.60). The FACIT-Sp12 total score was 24.79 (SD = 4.80). Peace had the highest mean score of 8.62 (SD = 1.63), followed by faith having 8.20 (SD = 1.98) then the lowest score of 8.06 (SD = 2.10) was meaning among FACIT-Sp12 sub-domains.

Comparison of total and subscale scores on the QoL-C30 scales according to patient characteristics is shown in Table 3. It was found that the age of participants affected their quality of life, functional and symptoms level ($p < 0.05$). It was determined that the quality of life of young patients (20–45 years) was better than that of elderly patients (46–82 years), ($p = 0.006$). Similarly, the functional levels of young patients (20–45 years) were found to be better than the elderly patients (46–82 years), ($p = 0.008$). It was determined that the symptom intensity level of elderly patients (46–82 years) was higher than the younger patients (20–45 years), ($p = 0.023$). Although the quality of life of married patients was higher (46.21±18.23) than single patients (38.00±21.41) there was not significant difference between them ($p = 0.116$). There was a significant difference between married patients and functional level ($p = 0.014$); married patients had a higher (49.33±10.12) functional level than others (42.62±7.19). It was found that the symptoms seen in single patients were more common than in married patients ($p = 0.033$).

It was observed that the quality of life increased as the education level increased ($p = 0.021$). However, it was found that the functional and symptom level were not affected by the educational level of patients ($p = 0.482$ and $p = 0.078$, respectively). There were no significant differences between quality of life, functional and symptoms level of patients and working status and income level, social insurance (p

Table 1 Characteristics of participants

Variables	n	%
Mean age 54.38±11.68 (min 32–max 82)		
Age groups		
20–45 years	23	25.3
46–82 years	68	74.7
Marital status		
Married	75	82.4
Single/divorced/separated	16	17.6
Educational level		
Illiterate	27	29.7
Primary school	38	41.8
High School/University	26	28.6
Working status		
Not working	83	91.2
Working	8	8.8
Income level		
Income less than expense	51	56.0
Income equals expense	35	38.5
Income more than expense	5	5.5
Family cancer history (n = 81)		
Yes	21	60
No	23.1	65.9
Family breast cancer history (n = 91)		
Yes	23	25.3
No	68	74.7

Table 2 Total and subdomain scores of the QoL-C30 and FACIT-Sp-12

Scales	Mean (SD)
QoL-C30	
Global QoL/General health status	44.76±18.96
Functional	
Physical functioning	56.30± 9.29
Role functioning	60.32±18.87
Emotional functioning	25.73±23.46
Cognitive functioning	53.10±28.05
Social functioning	40.18±18.62
Symptoms	
Nausea-vomiting	51.07±28.88
Pain	58.51±23.01
Dyspnea	56.04±25.94
Sleep disturbance	54.24±24.35
Appetite loss	55.35±28.34
Constipation	22.36±33.78
Diarrhea	21.61±34.60
Financial impact	71.54±23.65
FACIT-Sp12 scales	
Peace	8.62±1.63
Meaning	8.06±2.10
Faith	8.20±1.98
Total	24.79±4.80

> 0.05). Similarly, there were no significant differences between quality of life, functional and symptoms level of patients and family cancer history and family breast cancer history ($p > 0.05$).

A comparison of total and subscale scores on the FACIT-Sp12 according to patient characteristics is shown in Table 4. A significant difference was found between the sub-dimensions and total scores FACIT-Sp12 and age groups ($p < 0.05$). The spiritual well-being of elderly patients (46–82 years) was better than that of the young patients (20–45 years). There were no statistical differences between the marital status of patients and sub-dimensions and total scores of FACIT-Sp12 except for the 'Peace' sub-dimension ($p = 0.049$). Married patients had a higher 'Peace' score (8.77±1.56) than single/divorced/separated patients (7.81±1.68). While there was a significant difference between the total score of FACIT-Sp12 and the education level ($p = 0.007$), the increase in education level made a difference only in the 'Peace' sub-dimension ($p < 0.001$). The working status of the patients caused significant differences in 'Peace', 'Faith' and total score of FACIT-Sp12 ($p = 0.039$, $p = 0.004$ and $p = 0.026$, respectively). Patients with a high-income level had a higher score in the 'Faith' sub-dimension and total score of FACIT-Sp12 compared to other income levels ($p = 0.001$ and $p = 0.021$, respectively). The existence of social insurance made a difference only in the 'Peace' sub-dimension of FACIT-Sp12 ($p = 0.020$). It was observed that whether there was a family cancer history or family breast cancer history did not affect the spiritual well-being of the patients ($p > 0.05$).

The correlations between the patient's QoL-C30 and FACIT-Sp12 scale scores were analysed by Spearman correlation analysis (Table 5). There was a positive relationship between the sub-dimensions of FACIT-Sp12 ($p < 0.01$; $r = 0.639$, $r = 0.448$, $r = 0.656$, respectively). It was found that while the patients' functional scores increased, their scores on the FACIT-Sp12 scale (peace, meaning and faith) increased ($r = 0.276$, $r = 0.539$, $r = 0.497$, respectively). There were associations between the global QoL/general health status of patients and the FACIT-Sp12 scale (peace, meaning and faith), ($p < 0.01$; $r = 0.410$, $r = 0.530$, $r = 0.528$, respectively). The correlation coefficient indicates a positive relationship between the sub-dimension of two scales except in symptoms. While the symptoms score of the patients decreases, their scores on both scales (QoL-C30 and FACIT-Sp12) increase ($p < 0.01$).

Discussion

The present study analysed spiritual well-being and its relationship with quality of life in a sample of breast cancer patients in Turkey. To the best our knowledge, this study is the first study to investigate the association between spiritual well-being and quality of life in Turkish breast cancer patients.

The mean score of global QoL/general health status was 44.76±18.96 which showed that the breast cancer patients have poor quality of life in comparison to those of other studies conducted in Italy (63.89±21.30), Taiwan (74.47±14.96) and China (53.8±14.7) (Montagnese et al. 2021; Hou et al. 2020; Chen et al. 2018). The results obtained in breast cancer patients undergoing chemotherapy in India (45.94±12.90) was similar to our study (Kshirsagar and Wani 2021). The fact that the patients were under an active treatment process may be a reason for their poor quality of life. Functional status includes individuals' self-care, performance in daily activities, family and work related responsibilities and social roles. Inadequate functional status of women with breast cancer during the treatment process negatively affects their quality of life (Novakov 2021). Emotional functioning of the patients was poor in the present study. Other studies have shown a high proportion of patients with emotional disorders following cancer diagnosis (Cardoso et al. 2015; Cosci et al. 2015). As observed in other studies, the most common symptoms were financial impact, pain, dyspnea, appetite loss and sleep disturbance (Kristensen et al. 2017; Nishiura et al. 2015; Fernández-Rodríguez et al. 2019).

Table 3 Comparison of total and subscale scores on the QoL-C30 scales according to patient characteristics

Characteristics	QoL-C30		
	Global QoL/General health status Mean (SD)	Functional Mean (SD)	Symptoms Mean (SD)
Age groups*			
20–45 years	54.00±18.72	52.86±10.97	65.50±18.70
46–82 years	41.64±18.13	46.55± 9.15	55.21±17.78
p	0.006	0.008	0.023
Marital status*			
Married	46.21±18.23	49.33±10.12	60.96±19.22
Single/divorced/separated	38.00±21.41	42.62± 7.19	72.00±14.76
p	0.116	0.014	0.033
Educational level°			
Illiterate	37.00±19.22	46.22± 7.48	68.55±18.28[a]
Primary school	46.47±16.71	48.76±10.70	63.02±18.78
High School	50.34±19.87[a]	49.26±11.14[a]	56.84±18.60
p	0.021	0.482	0.078
Working status*			
Not working	43.66±18.80	47.78± 9.34	64.02±18.17
Working	56.25±17.81	52.00±15.39	51.25±23.71
p	0.073	0.256	0.068
Income level°			
Income less than expense	42.78±16.87	47.17± 9.25	64.76±16.47[a]
Income equals expense	46.45±21.78	48.65± 9.38	60.97±20.10
Income more than expense	53.20±18.21[a]	54.60±18.74[a]	57.40±33.39
p	0.406	0.266	0.532
Family cancer history*			
Yes	41.61±17.47	46.00±9.39	64.19±17.51
No	45.00±19.94	48.41±9.94	62.88±19.35
p	0.493	0.334	0.786
Family breast cancer history*			
Yes	47.39±16.76	48.78±10.19	60.69±21.73
No	43.88±19.68	47.94± 9.96	63.64±17.98
p	0.446	0.729	0.521

* Mann–Whitney U test, ° Kruskal–Wallis test, [a] Making the difference within the group, $p < 0.05$

The results revealed that the mean score of overall FACIT-Sp12 (24.79±4.80) and sub-dimension (peace 8.62±1.63; meaning 8.06±2.10; faith 8.20±1.98) was low. In a study conducted in the USA among cancer survivors, overall FACIT-Sp12 was found 37.35 ± 8.65 and peace 11.99 ± 3.42, meaning 13.67 ± 2.82, faith 11.70 ± 4.35 (Munoz et al. 2015). Our findings were lower than other studies including newly diagnosed with advanced cancer patients (FACIT-Sp12 was found 36.37 ± 8.21 and peace 11.92 ± 3.11, meaning 17.25 ± 3.21, faith 7.19 ± 4.28) (Bai et al. 2015). A study conducted with Italian advanced cancer patients had similar results (Martoni et al. 2017). While it was expected that the participants' Islamic beliefs would contribute to their level of spiritual well-being in a Muslim country like Turkey, the results were surprising. Maybe people involved in our research who experienced a lot of physical pain and discomfort tried to find the solution in something other than spirituality to cope with their stress. When we consider the contribution of the sub-dimensions of meaning, peace and faith to FACIT-Sp12, it was stated in a study that faith had no effect while meaning and peace contributed the most (Kamijo and Miyamura 2020). Another study indicated that Faith was a component of FACIT-Sp12 relatively independent of the degree of the patient's clinical conditions. Therefore, it can be assumed that the religious dimension of spirituality explained by faith is a more decided feature. However, meaning and peace reflect their relationship with others can be assumed to be negatively affected by the stage of disease and clinical worsening (Martoni et al. 2017).

Table 4 Comparison of total and subscale scores on the FACIT-Sp12 according to patient characteristics

Characteristics	FACIT-Sp12			
	Meaning Mean (SD)	Peace Mean (SD)	Faith Mean (SD)	Total Mean (SD)
Age groups*				
20–45 years	7.51±1.83	8.23±1.55	7.88±1.93	23. 6 ±4.66
46–82 years	9.69±2.03	9.72±1.27	9.18±1.84	28.57±3.02
p	<0.001	<0.001	0.007	<0.001
Marital status*				
Married	8.21±2.17	8.77±1.56	8.31±1.95	25.21±4.83
Single/divorced/separated	7.37±1.58	7.81±1.68	7.68±2.08	22.87±4.33
p	0.085	0.049	0.286	0.067
Educational level°				
Illiterate	7.48±1.96	7.88±1.64	7.66±2.01	23.03±4.80
Primary school	8.02±2.29	8.34±1.40	8.35±1.91	24.51±4.52
High School	8.73±1.80[a]	9.76±1.30[a]	8.53±2.00[a]	27.12±4.44[a]
p	0.094	<0.001	0.234	0.007
Working status*				
Not working	7.98±2.12	8.48±1.60	8.04±1.98	24.44±4.76
Working	8.87±1.80	9.75±1.38	9.75±1.16	28.37±3.92
p	0.225	0.039	0.004	0.026
Income level°				
Income less than expense	7.94±2.18	8.50±1.54	7.90±1.76	24.20±4.48
Income equals expense	8.05±1.99	8.55±1.72	8.20±2.08	24.85±5.04
Income more than expense	9.40±1.81[a]	9.80±1.48[a]	11.20±0.44[a]	30.40±2.96[a]
p	0.338	0.234	0.001	0.021
Social insurance*				
Yes	8.11±1.86	8.74±1.52	8.27±1.96	25.15±4.56
No	7.72±3.46	7.54±1.96	7.60±2.17	22.00±5.96
p	0.572	0.020	0.313	0.050
Family cancer history*				
Yes	7.66±2.19	8.42±1.69	8.52±1.83	24.61±5.20
No	8.05±1.79	8.59±1.58	8.08±2.05	24.72±4.55
p	0.430	0.689	0.388	0.916
Family breast cancer history*				
Yes	8.56±2.19	9.08±1.34	8.78±1.90	26.43±5.03
No	7.89±2.05	8.43±1.68	8.00±1.98	24.22±4.63
p	0.189	0.095	0.103	0.057

* Mann–Whitney U Test, ° Kruskal–Wallis Test, [a] Making the difference within the group, $p < 0.05$

In the present study, elderly patients (46–82 years old) showed higher scores of total FACIT-Sp12 and the subscales of meaning/peace and faith; patients with a high level of education, high income level and having social insurance scored higher on spirituality. These findings were generally consistent with those stated by Munoz et al. and Kamijo et al. with younger cancer patients reporting a lower score (Munoz et al. 2015; Kamijo and Miyamura 2020). A previous study reported similar results showing that the spiritual well-being of patients who were married and had higher education level were better (Martoni et al. 2017).

The primary purpose of our study was to examine the association between FACIT-Sp12 and QoL-C30. A relationship between FACIT-Sp12 and QoL-C30 among breast cancer patients was identified in our study. This result was in line with US, Iranian and Japan studies (Bai et al. 2015; Kamijo and Miyamura 2020; Jafari et al. 2013). There was also a significant relationship between the sub-dimensions of FACIT-Sp12 and QoL-C30 in the present study. A study conducted in Muslim inhabitants reported a relationship between spiritual well-being and quality of life (Lazenby et al. 2013).

Table 5 Correlation among QoL-C30 and FACIT-Sp12 scores of patients

	Peace	Meaning	Faith	Functional	Global QoL	Symptoms
Peace	–	–	–	–		–
Meaning	0.639**	–	–	–		–
Faith	0.448**	0.656**	–	–		–
Functional	0.276*	0.539**	0.497**	–		–
Global QOL/General Health Status	0.410**	0.530**	0.528**	0.397**		–
Symptoms	–0.469**	–0.499**	–0.464**	–0.673**		–0.508**

Spearman correlation values are correlation coefficient (r) and the negative values indicate an inverse correlation

**$p < 0.01$, *$p < 0.05$

Conclusion

The results of the present study revealed that breast cancer patients in Turkey experience poor quality of life and spirituality well-being. The spirituality level of patients was associated with their quality of life. The variable affecting quality of life score was older age in all sub-dimensions. Also, among the variables that affect total spiritual well-being score were older age, higher education level, employment, higher income level and having social insurance. Understanding variables associated with spiritual well-being and quality of life is crucial in terms of meeting their needs and developing interventions to promote their well-being. However, it has been observed that the relationship between quality of life and spirituality well-being in women with breast cancer has not been examined. Accordingly, this study addressed this gap by identifying the association between quality of life and spirituality well-being in a Muslim country such as Turkey. The strength of our study was that the spirituality well-being and quality of life of patients were investigated for the first time. Future studies that follow a large sample of patients over a longer period of time are needed to see the relationship between quality of life and spirituality well-being and variation in this population.

Our study had several limitations. Firstly, the present study results cannot be generalized to women with breast cancer in our city and also Turkey. Secondly, our sample size is small, which reduces the power of statistical analysis. Another limitation was the inability to reach cancer stages, which is a variable that affects both the spirituality well-being and quality of life of the patients.

Authors' contributions M.A.T.: acquisition of data, drafting the article and final approval of the version to be published.

P.S.: design, analysis, interpretation of data, revising manuscript and final approval of the version to be published.

Data availability The corresponding author is responsible for data. Access to all relevant raw data will be free to any scientist upon request.

Code availability Not applicable

Declarations

Ethical statement This study was approved by the ethics committee for non-interventional studies of Fırat University (2021/09-43). Written consents were also obtained from all the participants and their identities were kept confidential.

Informed consent Participation in the study was voluntary and we have obtained informed consent from all participants. Participants' information is considered confidential and is not published individually.

Consent for publication Not applicable.

Conflict of interest The authors declare that they have no conflict of interest.

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