



Research Article

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Description and Evaluation of Emotional Aspects and Quality of Life in Patients with Hidradenitis Suppurativa

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Abstract

Objective: The objectives of this study were to identify the impact on quality of life, anxiety, and depression in a series of Spanish patients with different degrees of hidradenitis suppurativa, taking into account their sociodemographic and clinical profile.

Methodology: Retrospective observational and cross-sectional cohort study on a population of 103 adults patients surveyed during the period of time between March and May of 2021 and all of them were classified according to the 3-degree scale proposed by Hurley (clinical severity of the disease). These patients belonged to the Health Department of Manises, Valencia-Spain.

The main methodological instruments of the study were different data collection questionnaires:

- Anxiety and Depression Scale (HADS)
- European Quality of Life-5 Dimensions (EUROQOL-50 scale)
- Questionnaire about sociodemographic profile
- Questionnaire about psychopathological profile

Result: 68% of all patients saw their quality of life affected according to the EUROQOL-50 scale (>8 out of 10) for long periods of time (an average of one year in 80% of patients). On the other hand, there was a positive, direct, and strong correlation (normality test) between anxiety, depression (HADS) and Hurley grading levels statistically significant.

Conclusion: Hidradenitis suppurativa generates a great impact on the quality of life of patients, and like previous studies, this work showed that there is a correlation between the severity of hidradenitis (Hurley) and the impact on quality of life. In this way, it is essential to make aware both, population, and health authorities, about the impact that hidradenitis has on quality of life, anxiety, and depression in order to provide better global care for patients affected by this disease.

Keywords: Hidradenitis suppurativa; Quality of life; Anxiety; Depression; Professionals

Introduction

Hidradenitis suppurativa is a chronic inflammatory skin disease, which is also known as "Vertheuil's disease", apocrinitis or

acne inversa [1]. It is characterized by the appearance of nodules, fistulas, and abscesses in the intertriginous areas of the skin above

all (armpits, groin, perianal area, inframammary), but they can appear in any area provided with hair follicles [1].

In a 3:1 ratio, affects more women than men, and usually appears between the second and third decades of life [2]. As a common skin disease, its prevalence is estimated to be greater than 1% in the population; currently underdiagnosed, despite the fact that has a simple clinical diagnosis [3]. This last due to the lack of knowledge about its pathology, which means that professionals sometimes confuse it with other skin abnormalities [4,5].

Many patients have serious sequelae, both physical and psychological, which affect their own body image and self-concept [6]. In turn, they produce limitations when it comes to social and sexual relationships. Stigmatization, isolation, and work absenteeism are the results in this group of people [6].

Recent studies show that patients undergoing from hidradenitis suppurativa have a significant loss of quality of life, even comparing with patients suffering Chronic Obstructive Pulmonary Disease (COPD), diabetes and cardiovascular affections [7]. It is not strange that these patients have episodes of anxiety, depression, loneliness; hence in the process of its treatment should be imperative to take into account this kind of aspects.

Considering the symptoms, nodules are the lesions that are most frequently seen [8]. These nodules can form abscesses from which purulent material drains spontaneously [4,5]. In addition, the appearance of scars and comedowns is frequent [1]. Classically the scale which is used to stratify severity of hidradenitis is Hurley's gradation. It is the most common in the clinical practice, simple device and easy to handle, allowing a good communication between Primary and Specialized Health Care (Family Doctor, Dermatology, General Surgery and so on); however, it is not a right or accurate device to assess a good therapeutic answer [9]. In the Table 1 It is showed the Hurley's classification [10].

Clinical variability is very high and there is no single effective

treatment [11]. In the Table 2 is described the different therapeutic strategies according to Hurley's classification. On the other hand, hidradenitis suppurativa has an unknown etiopathogenesis, being the genetic factor one of the most relevant (50%) and its presence indicates worse long-term prognosis [12]. In recent years has got relevance a "unifying theory" in which autoimmune mechanisms, genetic alterations and environmental factors has been included [13] (Table 3). For all the factors described above: enteropathogenic, chronicity, clinical variability and different treatment criteria, hidradenitis suppurativa has a clear impact on the quality of life of patients who suffer from it. The Health World Organization (HWO) describes health as a complete state of well-being and not only like an absence of disease [14]. This concept is relatively new in its implementation, especially in the field of dermatology [15], and includes: - physical aspects (mobility, pain), - emotional state (anxiety, depression) and - social aspects (work, social isolation). In this way, instruments arise in Dermatology whose purpose is to measure the quality of life related to health, having as a format questionnaires or tests composed of associates questions; all of them capable of meeting criteria such as: - construction validity, - content, criterion, - reliability, - interpretability and - feasibility [16].

Justification

The lack of an adequate care process and of awareness about hidradenitis suppurativa that affects both health and social levels has led to the implementation of multidisciplinary strategic initiatives where the role of nursing is basic, guaranteeing a standard of continuous and personalized care. Evaluating the quality of life in patients with this pathology can help and improve the assistive care received by these professionals [17]. In short, the measurement of health-related quality of life allows, today, not only the evaluation of the results in clinical trials and health research, but also the evaluation of the real needs of a population and, therefore, the planning of health interventions measures and distribution of resources [18] [Tables 1-3].

Table 1: Hurley's classification describing the clinical and radiological characteristics of each grade. Dermatol. Online J. 2020; 26(9): 13030/qt4rm-8w7kn [10].

Hurley Stadiums	
Hurley I	Abscess formation (single or multiple) without fistulization or scarring/eschar
Hurley II	Recurrent abscesses with fistulas, eschars and/or multiple lesions
Hurley III	Multiple abscesses, diffuse involvement, multiple interconnected tracts, fistulizations, abscesses throughout the area

Table 2: Different strategies depending on Hurley's degree. IL-6: interleukin 6; Complement factor 5a anaphylatoxin. Drugs 2021; 81(12): 1397-141011.

Therapeutic Strategies	
Hurley I	Topical (clindamycin) or systemic (rifampicin) antibiotic therapy
Hurley II	Immunosuppressive therapy (adalimumab), biological molecules such as: IL-6, C5a, Janus Kinase Family and/or surgery
Hurley III	Surgery method of choice with or without ultrasound support

Table 3: Major factors contributing to the pathogenesis of hidradenitis suppurativa. Unifying theory. IL: interleukin, TNF: Tumor Necrosis Factor. *Front. Immunol.* 2019; 10: 892.

Etiopathogenesis	
Predisposing Factors	Triggering Factors
Genetics	Tabacco
Immunological/Inflammatory (IL-12, IL-23,	Obesity
Microbiome/Biofilm	Hormonal factors
	Tight clothing
	Deodorants and hair removal
	Drugs (lithium and contraceptives)

Objectives

Main Goal

Assess the quality of life in patients diagnoses with hidradenitis suppurativa.

Specific Objectives

- Report the sociodemographic and clinical profile of the patients who present hidradenitis suppurativa during the last year.
- Assess anxiety levels in patients diagnosed with hidradenitis suppurativa.
- Define levels of depression in patients diagnosed with hidradenitis suppurativa.
- Evaluate whether there is a relationship between the severity of the disease and the quality of life, anxiety and depression of patients diagnosed with hidradenitis suppurativa.
- Define if there is a relationship between anxiety, depression values and quality of life.
- Assess whether there are differences in the study characteristics in terms of sex.

Methodology

Type of study

This is an observational, descriptive, and retrospective study.

Study sample

Patients diagnosed of hidradenitis suppurativa from Dermatology Department of the Manises Hospital, Valencia-Spain;

Information or data collection instrument

Table 4: Specific scale to determine levels of anxiety and depression. *Eur.J. Dermatol.* 2019; 29(3): 294-30119.

Anxiety and Depression Scale (HADS)	
Items	Score
I feel tens, nervous	3. most of the day, 2. at least most of the day, 1. from time to time, 0. never
I still enjoy things as always	0. as before, 1. not as much as before, 2. Just a little, 3. never
I feel a kind of fear as if something bad is going to happen	3. yes, very intense; 2. yes, not very intense; 1. I don't care; 0. no
I am able to laugh and see the funny degree of things	0. as always, 1. currently somewhat less, 2. currently much less, 3. currently not at all

sample, n: 187 calculated by sample data (proportions/means, qualitative/quantitative analyzes respectively). Starting from a target population, in this case n: 500 (number of patients registered with hidradenitis suppurativa by the Dermatology Service of Manises Hospital), 10 years; most significant reference. It was applied:

- Confidence level or security of 95%
- 3% accuracy
- Approximate value of the most important parameter who wants to be measured ($p=0.5$, 50%) $n= 170$; when applying the forecast of subject loss during the study (it is advisable to estimate at least 10%), the final n was 187.

Inclusion/Exclusion criteria

Inclusion:

- Patients over 18 years of age.
- Residents in Manises Health Department, Valencia-Spain.
- Diagnosis of hidradenitis suppurativa confirmed by dermatologists.
- Basic criteria of hidradenitis suppurativa: lesions and location typical and tendency to recur.

Exclusion:

- Patients presenting with any disease not related to hidradenitis suppurativa that, according to clinical criteria, could have a significant impact on patients (such as Parkinson's disease, dementia, or Alzheimer, among others).
- Patients who could not read or write.

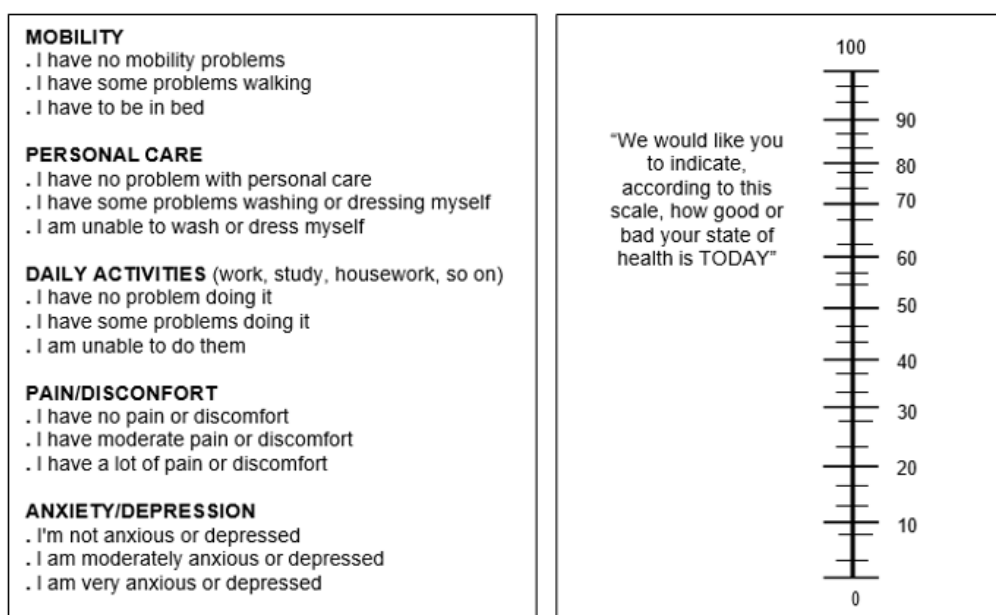
I have a head full of worries	3. most of the day, 2. at least most of the day, 1. from time to time, 0. never
I feel happy	3. never, 2. very rarely, 1. sometimes, 0. most of the day
I am able to remain seated, calm and relaxed	0. always, 1. often, 2. rarely, 3. never
I feel slow and clumsy	3. much of the day, 2. often, 1. sometimes, 0. never
I experience an unpleasant feeling of "nerves and tingling" in my stomach	0. never, 1. only sometimes, 2. often, 3. very often
I have lost interest in my personal Appearance	3. completely, 2. I don't take care of myself I should, 1. I may not take care of myself like I should, 0. I take care of myself I always has
I feel restless, like I can't stop moving	3. really a lot, 2. quite a lot, 1. not a lot, 0. Never
I look forward to things	0. as always, 1. somewhat less than before, 2. much less than before, 3. Not at all
Suddenly experience feelings of great distress or fear	3. very often, 2. quite often, 1. rarely, 0. Never
I am capable of enjoying a good book or a good radio/television program	0. often, 1. sometimes, 2. rarely, 3. Never

Anxiety and Depression Scale (HADS) [19] is an instrument designed to assess anxiety and depression. It is one of the most widely used instruments to quantify anxiety and depression in the general population; with this scale, the most extensive anxiety and depression responses have been recorded in the adolescent, adult, and elderly population. It is divided into two subscales, anxiety and depression, highly reliable and valid instrument. Each scale is divided into seven items. The score can vary between 0 and 21. Each item has four response options, from absence/minimum presence to maximum. The higher the score, the higher the levels of anxiety and/or depression (Table 4).

European Quality of Life-5 Dimensions (EUROQOL-50) [20], generic, and elaborated instrument to assess the quality of life related to health. This is a generic questionnaire, since does not refer to any specific disease. The individual himself assess his state of health, first in levels of severity by dimensions (mobility, personal

care, daily activities, pain, discomfort and anxiety/depression) and second, on a visual analogue scale based on a thermometer, where 0 would be the worst state health imaginable and 100 the best for the patient. In the Scheme 1 outlines the analog scale EQ-50.

Questionnaires about sociodemographic and hidradenitis suppurativa evolution (own elaboration by the authors of this work) -age (quantitative and continuous variable) -sex (qualitative, nominal and dichotomous variable) -marital status (qualitative variable, polychotomous) -family position (polychotomous qualitative variable) -Hurley stage (ordinal qualitative variable) -course of de disease (qualitative, polychotomous, dichotomous and open questions) -anxiety/depression (would be an independent variable, predictor) -quality of life (measured with the thermometer offered by the EUROQOL tool; It could be a continuous quantitative dependent variable) (Table 4) (Scheme 1).



Scheme 1: EUROQOL thermometer for self-assessment of health status. 100 is the best and 0 is the worst. Acta Derm.Venereol.2016; 96(2): 222-6.

Statistic analysis

In the statistic analysis, univariate and bivariate descriptive statistics were used to determine the characteristics of the sample

1. Descriptive of qualitative and quantitative variables, both independent and dependent. Frequency table and corresponding graph.
2. Inference between variables sex and age with other dependent variables of interest.
3. Correlations between quantitative variables.

The results produced in the questionnaires were evaluated by comparing them with each other. A descriptive analysis of the variables was carried out: - in the case of quantitative variables through measures of central tendency and - in the case of qualitative or categorical variables through frequency distribution. For the contrast of hypothesis, the corresponding non-parametric tests were used. Spearman was used for correlations after checking the non-normality of variables with the Kolgomorov-Smirov test [21].

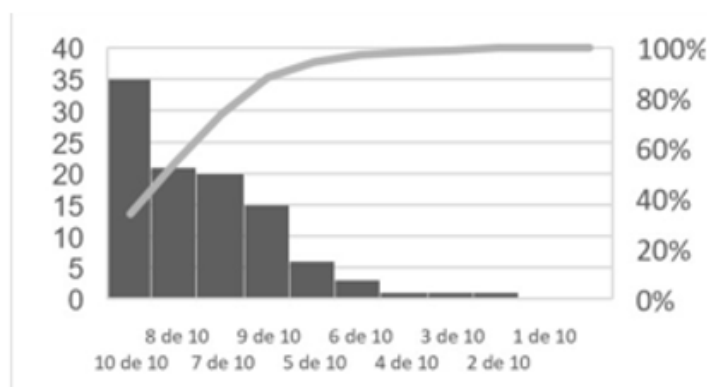
Date was analyzed using the Statistical Package for the Social Science (SPSS) software, which was also used in conjunction with Microsoft Office Excel (graphical representations).

Result

Descriptive analysis

Of the 187 patients in the sample, 103 finally participated, 85 were women and 18 men. The average age of participants was 39.76 years; this is due to the number of the sample that makes mean, median and mode are close to each other. Only 24,27% had family aggregation (familiar history of hidradenitis suppurativa). Regarding the Hurley stages, stage I and II were the most abundant compared to stage III, which was around 20% of the sample (Table 5). The marital status of the participants was mostly single, followed by married and 72,8% lived with their family; of these latter, 70,66% of them were financially responsible for their relatives; 80,5% felt well understood by their families. The vast majority presented a time elapsed from the first symptoms to the present greater than one year.

Within the questionnaire of clinical variables, a questionnaire was made according to the affection of the quality of life: 10 being the greatest affection and 0, no affection. As seen in the Graph 1, the majority of patients reported a great impact on their quality of life (Table 5) (Graph 1).



Graph 1: Affection of the quality of life. Patients surveyed in this work according to Euroqol scale.

Table 5: Percentage patients affected in this study according to Hurley degree.

Hurley' degree	n ^o patients	%
Hurley I	40	38,83%
Hurley II	42	40,77%
Hurley III	21	20,38%

90 patients (87,37%) reported that the most annoying thing for them was pain followed by a bad smell, 48 (46,60%) and 39 (37,86%) exudations.

Most relevant qualitative results

Table 6 describes the most frequent responses to the

questionnaires designed, being directly related to the quality of life of these patients (Table 6).

The overall results of the Euroqol-50 and HADS scales according to the answer obtained, were flashy; Euroqol scale thermometer did not reach score 50 (maximum 100) and HADS was 14,23 with a maximum score of 21 (Table 7).

Table 6: Most common expressions used in the responses to the questionnaires posed in this paper (in relation with the hidradenitis suppurativa skin affection).

Situations that most frequently affect functional activity
"At work, in my relationship, in my self-esteem"
"Hormonally, I have not been able to get pregnant"
"In the way of dressing"
"It affects a lot in daily life, when you have it in an area like the thighs, the pain doesn't even let you walk, it's very painful"
"At rest time, anxiety, pain, bad smell sometimes"
"When the outbreaks are there, it affects every state of mind and physique, at work, with my partner when having relationships"
"With my friends when I cancel plans due to this kind affection"
"Scars on the breast, groin folds, armpits are very frustrating, my love life is very chaos"
"Dances, physical activity, stained clothes"
"Zero sexual life since the age of 35"
"It limits my mobility because of pain"
"Carrying a colostomy forever"
"Not being able to hold my son in my arms"
"Exercising less I have gained kilos"
"In almost all facets of my life it is affecting me"
"In socializing with people"
"Sexual relationship with the partner"
"I can't use hormonal contraceptive methods"
"During pregnancy the affection increase"
"Loss of strength in the arms"
"I have left the gym"
"I am aware of my grains 'smell all day"

Table 7: Euroqol-50 which evaluates the quality of life and HADS, instrument designed to assess anxiety and depression (results obtained from this study).

Descriptive	Euroqol-50	HADS
Mean	41,50	14,23
Standard deviation	32,890	4,657
Maximum	95	21
Minimum	0	4

Statistic analysis with non-parametric test

According to the results obtained in Kolmogorow-Smirnov and Shapiro-Wilk, age follows a normal distribution (significance 0,200

greater than 0,05) and the rest of variables are not normal finding significant differences between the level of Hurley affectation and the Hads scale (the greater affectation, the greater score in anxiety and depression) (Table 8) [22].

Table 8: * not statistically significant; ** statistically significant. Jama 2020; 323(20): 2080-2081. jama 2020.587421; Anesth Analg. 2017; 125(4): 1375-1380. Hurley: classification of hidradenitis suppurativa and Hads (anxiety and depression).

Variables	Kolmogorov-Smirnov21			Shapiro-Wilk22		
	Statistical	Sample	Significance	Statistical	Sample	Significance
Age	,047	103	,200*	,987	103	,449
Hurley	,250	103	,000**	,795	103	,000**
Hads	,111	103	,003**	,944	103	,000**

Another non-parametric statistical test used was the Rho Spearman test, correlating the level of Hurley affectation, anxiety/depression, and quality of life. As can be seen in Table 9, the correlation among Hurley, anxiety/depression, and quality of life was direct, positive, and strong, especially regarding the quality of life variable, seeing how the relationship is inverse (-significance,

sig: higher hurley degree, greater anxiety/depression and above all lower quality of life). However, regarding anxiety and depression, according to the results obtained, these are more moderate, although they indicate a direct relationship between the variables (+ significance) (Table 9).

Table 9: Application of the correlation test (bivariate analysis measuring the strength of association between them, especially between: Hurley/thermometer and Hads/thermometer (Euroqol-50). ** statistically significative. Indian J. Dermatol. 2016; 61(6): 593-601.

Correlations Rho of Spearman [22]				
		Hurley	Hads	Thermometer
Hurley	Correlation	1,000	,645	-,676**
	Coefficient			
	Sig. bilateral	.	,000	,000
	Sample, n	103	103	103
Hads	Correlation	,645**	1,000	-,852**
	Coefficient			
	Sig. bilateral	,000	.	,000
	Sample, n	103	103	103
Thermometer	Correlation	-,676**	-,852**	1,000
	Coefficient			
	Sig. bilateral	,000	,000	.
	Sample, n	103	103	103

Discussion

The impact on the quality of life of patients with hidradenitis suppurativa has been little studied so far. If we consider the scarcity of studies on the subject in general and especially in the Spanish population, this work has as main objective, to assess the quality of life in 103 patients with this pathology, through demographic questionnaires (HADS and EUROQOL-50).

Taking into account the epidemiological data obtained, as is the case with most publications [1], It is striking that there is a predominance of the female sex (83% women versus 17% men); perhaps due to the greater willingness of women to participate in this type of questionnaires (more time, more frequent visits to the health center, being more active, better availability to participate). This could be a limitation in the objective analysis of the results (some bias).

Regarding the age factor, like the reviewed works [2,4,5] the results are coincident, meaning that it is a most patients grouped into Hurley II followed by Hurley I and III pathology that affects the stages of greatest activity of people. An average of between 7 to 10 years is estimated from the onset of symptoms until a correct diagnosis is made [3]. In this review practically all the participants reported a time greater than one year, from the onset of symptoms up to the present, thus coinciding with the data consulted. On the other hand, no family aggregation was found (76% of the patients had no family history) against what say other studies (up to 40% have) [13]; perhaps the questionnaire models used did not delve into this aspect.

Most patients were grouped into Hurley II (40,77%) followed by Hurley I (38,83%) and III (20,38%), coinciding with the results obtained by other authors such as Martorell A et al 2016 [23], one of the most representative groups in this area of dermatology at a European context.

With respect to the aspects that focus the objectives of this work: quality of life and anxiety/depression, these surveys indicated an important repercussion on the quality of life and not so much on changes in psychological behavior; likely this could be a contradiction, although it is justified because they are not specific surveys in psychology or psychiatry. JM. von der Werth and GB Jemec 2001 [24] demonstrated that the intensity of the disease was correlated with worse scores in terms of quality of life. In his discovery, he highlights a negative relationship between the age at the onset of the disease and the scores on the tests performed. Also, Matusiak L et al 2012 [25] indicates a large effect in the same terms, even higher than in the works cited. Curiously factors such as sex, place of residence, level of education, employment status, age of onset and duration of the affection did not reveal significant relationships. In this present study this has been seen.

According to a study carried out by Vazquez BG et al 2013 [26], 43% of their patients were diagnosed of hidradenitis suppurativa as a consequence of a depression, and it was closely related with the clinical stage of this dermal pathology (above all when the problem was found in areas such as anogenital location or the age of onset was late).

The comparison of the scores obtained in other studies

illustrate that hidradenitis suppurativa has greater deterioration in the quality of life than those found in other skin disease (psoriasis, atopic dermatitis, alopecia, among others), all of which are considered causative of significant disability. Should be noted that, although hidradenitis suppurativa is not an imminently serious disease, its effects on quality of life, society and health system are comparable to conditions such as hypertension or diabetes.

Work limitations

Our dates cannot be extrapolated to the general population because the patients in this series correspond to the hospital setting, which means that patients with greater clinical involvement could have been selected. Its internal validity may have been affected by a selection bias. The sample is not randomized or systematic (they are patients with a specific dermatological disease and subject to inclusion/exclusion criteria)

It should be noted that the main limitation of the analysis lies in the number of participants, which means that the results obtained cannot be generalized. On the other hand, most of the patients were women, so in future studies the performance of a more equitable study should be considered, although the normal distribution by sex of hidradenitis suppurativa is 3:1.

Regarding futures lines of research, could be highlighted conducting qualitative studies that allow characterizing the beliefs and experiences of patients affected, carrying out studies on the perspective of professionals on the management, as well as conducting studies population with a large sample, in order to generalize the results.

Conclusion

1. Hidradenitis suppurativa has a significant impact on the quality of life of patients.
2. The sociodemographic profile is situated at a mean of 39,76 years, where the majority of the participants are women (82,52%), whose marital status is single, with no family history.
3. The impact generated in terms of depression is moderate.
4. There is a relationship between the severity of the disease (Hurley stage) and the quality of life, anxiety, and depression.
5. There is a significant relationship in terms of anxiety/depression values and quality of life.
6. There are differences in terms of sex. Women are more affected.

Acknowledgment

None.

Conflict of Interest

No conflict of interest.

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