

Correlation Between Quality of Life and Depression Among Persons Suffering from Psoriasis

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ABSTRACT

Introduction: Chronic dermatitis is a major sociomedical issue still being marginalized due to generally accepted view that skin diseases are less of a health problem than is the case with diseases of other organs and organ systems for they are not life-threatening. Measurement of quality of life of persons suffering from psoriasis could become an important factor in assessing the success of treatment and modern aspect of integration of the diseased into the planning of therapeutic procedures, monitoring of their outcomes and improving the quality of treatment. **Aim:** To determine the quality of life and the degree of depression of persons with psoriasis, as well as to make a correlation between the two. **Patients and methods:** A descriptive and analytical study of cross-sectional character has been performed. The sample consisted of N = 56 respondents with medically verified diagnosis of psoriasis that was treated at the Clinic for Skin and Venereal Diseases of the Clinical Centre of the University of Sarajevo. Criteria for involvement of participants: respondents are to be over 18 years of age with verified medical diagnosis of psoriasis, and to voluntarily consent for inclusion in the research. The research instruments consisted of standardized questionnaires: the WHO-BREF Quality Questionnaire and the Beck Depression Inventory. **Results:** Median value of scores relating to quality of life of persons with psoriasis from our sample was highest in the domain of social interaction and amounted to 72 (51.50-81.00); the domain of physical health was 63 (39.50-75.00); the psychological condition was 63 (44.00-75.00); and the environmental domain was 63 (44.00-73.50). Depression of persons with psoriasis showed correlation with domains of quality of life. The depression proved correlated with the respondents': physical health ($\rho = -0.793$ $p = 0.0001$); psychological health ($\rho = -0.842$ $p = 0.0001$); social interactions ($\rho = -0.598$ $p = 0.0001$); as well as with attitude towards the environment ($\rho = -0.709$ $p = 0.0001$). Gender, age, education, marital or employment status did not prove statistically significant for influencing occurrence of the depression. **Conclusion:** Given that median scores of all four domains of the quality of life of persons suffering from psoriasis were in the higher half of classification scale, the quality of their life can be considered as satisfactory. The degree of depression and the domain of quality of life are in negative correlation with psoriasis.

Keywords: quality of life, psoriasis, depression.

1. INTRODUCTION

Psoriasis as a chronic, inflammatory skin disease manifested by multiple erythemosquamous plaques, most commonly evidenced on extensor surfaces of the extremities, elbows and knees, as well as on the scalp (1), thus largely affecting the quality of life associated with health. Psoriasis affects 1-3% of the world's population, it being over 125 million people around the world. In the United States, the prevalence of psoriasis is 0.91%, while in Norway it amounts to 8.5% (2). Aetiology of psoriasis is still insufficiently clarified though it can be said to equally occur with both genders (3). Epidemiological and immunogenic studies

suggest that the predisposition to the psoriasis is inherited (4). Smoking, alcohol consumption, obesity, lack of activity and social isolation are more common among psoriasis sufferers than it is the case with general population (5). Psoriasis sufferers have higher psychiatric morbidity – depression, anxiety, fatigue, sleep disorder and sexual dysfunction – than the patients having other dermatological disorders (6, 7). Visibility of skin changes and negative attitude of environment often create a vicious circle that further deteriorates his/her psychical state, and has consequences of aggravated skin condition (8).

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Chronic dermatitis is a major sociomedical issue still being marginalized due to generally accepted view that skin diseases are less of a health problem than is the case with diseases of other organs and organ systems for they are not life-threatening. Such opinion results from long-lasting focus on the importance of physical consequences of illness, and provision of minimum attention to social, psychological and psychological aspects (8).

The statistical data on the number of persons with psoriasis in Bosnia and Herzegovina still do not exist. Researches on the quality of life of persons suffering from psoriasis in our country are very rare.

2. AIM

Aim of the research was to analyse the quality of life of persons with psoriasis and degree of their depression, as well as to correlate these two with each other.

3. PATIENTS AND METHODS

The study is a descriptive, analytical, cross-sectional study conducted from April to May 2017 at the Clinic for Skin and Vascular Diseases of the Clinical Centre of the University of Sarajevo. The sample consists of N = 56 respondents with medically verified diagnosis of psoriasis, who either perform regular check-ups at the Clinic or are currently hospitalized at the Clinic. Criteria for selection of respondents: persons are to be over 18 years of age with verified medical diagnosis of psoriasis, and to voluntary consent for inclusion into the research. The study was approved by the Ethics Committee of the University Clinical Centre of Sarajevo.

The following instruments were used for the research: Questionnaire on the socio-demographic characteristics of the respondents, World Health Organisation Quality of Life Brief Version Questionnaire (WHOQOL-BREF), and standardized Beck Depression Inventory (BDI). The questionnaire on socio-demographic characteristics tackled the matters of age, gender, marital status, employment status and economic status, vocational qualifications, family history as well as habits of smoking and consumption of alcohol. Psychometric studies have shown that WHOQOL-BREF is a reliable and valid instrument that highly correlates with WHOQOL-100, approximately by 0.89. As it contains lesser number of questions and provides for quicker resolution, it is prioritized over WHOQOL-100. The scoring aspect concerned the perception of quality of life in each of the four domains of the questionnaire (physical health, psychological state, social interaction and environment), where the scale was positively directed, which means that higher score represented a higher quality of life. The ques-

tionnaire consisted of 26 questions, each being evaluated by the Likert scale varying from one (as the worst) to five (the best). After the two-step transformation of the scores was complete, the points found on the scale ranged from 0 to 100 (9).

The Beck Depression Inventory – Second Edition (BDI-II) is a four-stage scale used for self-assessment of depression severity that includes the symptoms within the last two weeks. The claims are marked and vary from 0 to 3. The BDI-II consists of 21 item, each containing 4 statements that describe the degree of depression. The maximum score is 63, where higher values indicate higher intensity of symptoms and more severe depression. The sum of scores ranging from 0 to 13 represents minimal depression, from 14 to 19–mild depression, 20 to 29–moderate depression, and 30+ indicates severe depression (10).

4. RESULTS

The research involved N = 56 respondents, N = 27 (48.21%) were women and slightly more were men N = 29 (51.78%). The average age of the respondents was 50.8 ± 16.1. Majority of respondents suffering from psoriasis have completed secondary education 71.43% (N = 40), 14.29% (N = 8) of them completed elementary school, while 14.29% (N = 8) possess colleague or higher education. Nearly two-thirds of respondents with psoriasis N = 39 (69.64%) were married. Of the total number of persons with psoriasis, majority was retired N = 22 (39.29%), N = 19 (33.93%) were employed, while N = 15 (26.79%) were unemployed.

Self-assessment of own economic situation undertaken by the group of persons with psoriasis showed that 41,07% (N = 23) of respondents considered to have a satisfactory economic situation, 37,5% (N = 21) stated to live in good economic conditions, while 21,43% (N = 12) of respondents evaluated their economic situation as poor.

A positive family history was reported by 25% (N = 14) of respondents.

When considering the smoking habits, slightly over ½ of respondents declared to be smokers, 51.79% (N = 29), while positive reply to consumption of alcoholic beverages was provided by 26.79% (N = 15) of respondents.

Table 1 demonstrates both average values and ranking of quality of life per individual domains of respondents' health (coefficient of coherence and number of questions in the domains), where the score of 100 points represents a full and unhindered functionality and 0 points represent total dysfunctionality.

		N	Mean	SD	Min.	Max.	25 th	Median	75 th	Cronbach's Alpha	N of Items
Respondents with psoriasis	Physical Health	56	58.16	23.4	6	100	39.50	63.00	75.00	0.874	7
	Mental Health	56	59.29	22.4	6	100	44.00	63.00	75.00	0.856	6
	Social Interactions	56	67.63	20.2	19	100	51.50	72.00	81.00	0.623	3
	Environment	56	58.18	20.2	13	100	44.00	63.00	73.50	0.819	8

Table 1. Average means and scores per individual domains of health of respondents with psoriasis

Certain domains of the WHO BREF questionnaire were subjected to a reliability test of internal consistency, and are shown by the Cronbach's Alpha coefficient. The Cronbach's Alpha coefficient values show that the questions are meaningful in all four domains, and that the respondents' answers are related.

The median score having the interquartile range from 25 to 75 with accompanying percentiles in the domain of physical health, on a scale of 0-100, amounted to 63 points (39.5-75); in the domain of mental health - 63 (44-75) points; in the domain of social interaction - 72 points (51-81); and in the domain of the environment - 63 points (44-73.50).

The WHO BREF questionnaire provides for the possibility to subjectively evaluate the quality of life with grades ranging from one to five.

As many as 50% of respondents (N = 28) evaluated quality of their lives as "very good" or "fairly good".

For assessment of the degree of depression was used the Beck Depression Inventory. The average depression rate was 13 and ranged from 5 to 24.

Graph 1 depicts on the BDI scale the correlation between depression and physical health of respondents with psoriasis. The depression proved to be in correlation ($\rho = -0.793$ $p = 0.0001$) with the physical health of the respondents. The correlation is very strong and negative, where the respondents with high values of physical health on a scale from 0 to 100 proved to be less depressed.

Graph 2 depicts on the BDI scale the correlation between depression and psychological health of the respondents with psoriasis. The depression proved to be correlated ($\rho = -0.842$ $p = 0.0001$) with the psychological state of the respondents. The correlation is very strong and negative, where the respondents with high

Subjective evaluation of quality of life	N	Very bad	Fairly bad	Neither good or bad	Fairly good	Very good	Total
		2	7	19	22	6	
Number/percentage		3.6%	12.5%	33.9%	39.3%	10.7%	100.0%

Table 2. Subjective evaluation of the respondent's quality of life

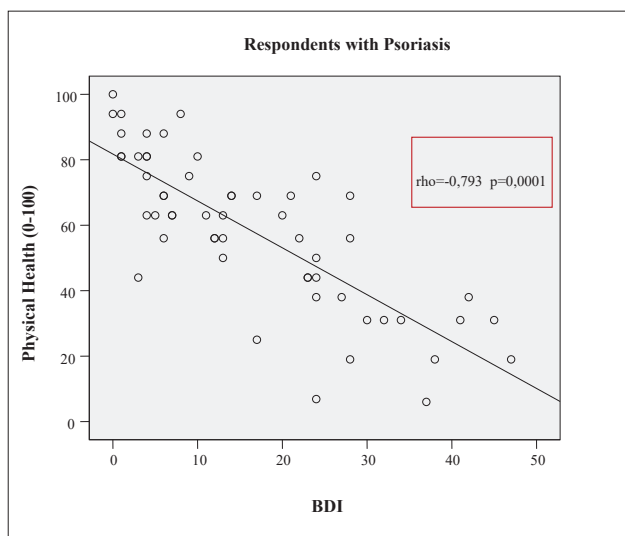
Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	t	Beta	p
(Constant)	.782	5.506		.142	.887
Gender (M/F)	.763	1.981	.034	.385	.701
Age (years)	.112	.082	.143	1.374	.172
Education (primary, secondary, colleague, university)	-.849	.996	-.083	-.853	.396
Marital Status (widow(er), divorcee, single, married)	.384	1.023	.033	.375	.708
Employment status (retired, unemployed, employed)	1.187	1.642	.086	.723	.471

Table 3. Impact of independent predictors on the presence of depression of respondents measured with assistance of the BDI scale

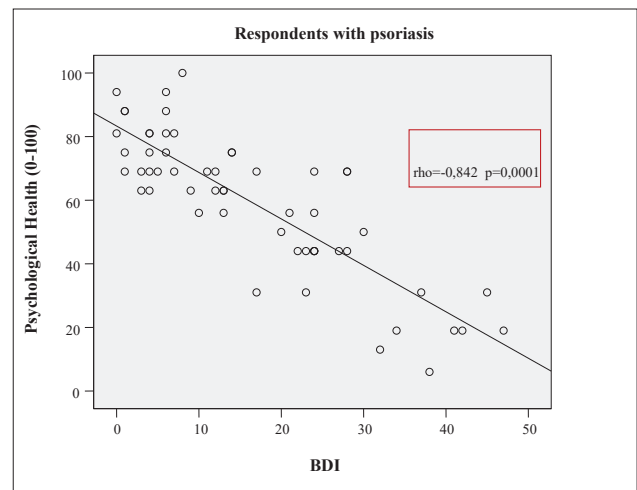
values of psychological health on a scale from 0 to 100 proved to be less depressed.

The analysis also concerned the correlation of depression and social interaction of the respondents that is presented on the BDI scale. The respondents' depression proved to be correlated ($\rho = -0.598$ $p = 0.0001$) with their social interaction. The correlation is of medium strength and negative, where the respondents with high and medium strong social connections on a scale from 0 to 100 proved to be less depressed.

The analysis also involved the correlation of depression and the environment of the respondents that is presented on the BDI scale. The depression of respondents with psoriasis proved to be correlated ($\rho = -0.709$ $p = 0.0001$) with the domain of life. This correlation is strong



Graph 1. Diagram of dispersion of interdependence of depression and physical health of respondents with psoriasis



Graph 2. Diagnosis of dispersion of interdependence of depression and psychological health of respondents with psoriasis

and negative, where the respondents with high and middle values in domain of environment depicted on a scale from 0 to 100 proved to be less depressed.

Table 3 presents the influence of independent predictors on the presence of depression among respondents measured with the BDI scale.

Regression analysis investigated the influence of independent predictors on occurrence of depression among respondents that is presented on the BDI scale. It has shown that predictors of: gender, age, education, marital status, and employment status are not statistically significant for occurrence of depression among the psoriasis sufferers.

5. DISCUSSION

Our research was conducted at the Clinic for Skin and Vascular Diseases of the Clinical Centre of the University in Sarajevo, and included 56 patients suffering from psoriasis that were treated either as outpatients or as persons hospitalized at the Clinic for Skin and Vascular Diseases at the Clinical Centre of the University in Sarajevo. Gender proportion of the respondents was approximately equal - 48.21% of female and 51.78% of male respondents, so our sample supports the idea that psoriasis is equally represented in both genders.

Average age of the respondents with psoriasis was 50.8 ± 16.1 years, which is consistent with the results of another study conducted at the Clinical Centre of University in Sarajevo in the period from December 2013 to May 2015 where the average age of the respondents was 52.20 ± 18.84 years (11).

Analysis of education degree of our respondents revealed that the largest share of respondents (71.43%) in our sample concerned the persons having secondary education, which is in line with the research conducted in Serbia, Stojković (2015) (8) and Milčić (2016) (12), whereas a research conducted in Poland (2012) lists the highest number of respondents with higher education (44.1%) (13).

When observing the marital status of our respondents, more than two-thirds of the respondents are married, which is in line with a research conducted in Belgrade in 2016 (12), as well as the one conducted by Young Wook Lee and Associates (2010) (14).

When considering the respondents' employment status, majority concerns the retired persons, which is consistent with the results from Belgrade (12), though differs from Stojković's results (8).

The prevalence of smoking among persons suffering from psoriasis ranges from 13%-45%. The results are influenced by geographic, ethnic, socioeconomic and cultural factors (15-17).

Armstrong and Associates (2013) conducted one huge meta-analysis and established a strong correlation between smoking and psoriasis by stating that smoking is an independent risk factor for developing the psoriasis (18).

In our study, 51.79% of respondents stated to be active smokers, which is higher in comparison with results of other authors (19, 12).

In our study, 26.79% of respondents with psoriasis stated to consume alcohol, while Milčić (2016) reported in his study that 48.8% of his respondents consume alcoholic beverages (12).

Gerdes and Associates (2010) state in their study that out of the total number of persons with psoriasis, 14.9% declared to consume alcohol, which is considerable lesser than revealed in our results (19).

The results of the study conducted in Bangladesh (2012) also indicate a slightly lower percentage of alcohol-consuming respondents with psoriasis (18%) (20).

Smoking and alcohol can be the trigger factors for worsening of psoriasis and are important for the outcome of treatment for patients with this chronic disease (8).

In our study, 41.07% of persons suffering from psoriasis rated their economic status as good, 37.5% as satisfactory, and 21.43% as poor. Ayala and Associates (2014) found a strong influence of psoriasis on the working ability and economic conditions of the diseased (21).

This was also confirmed by Mansouri and Associates (2015) in their research conducted in Iran (22).

An analysis of the quality of life of respondents with psoriasis in our sample through the WHO BREF questionnaire revealed that the median value for quality of life of the psoriasis sufferers is highest in the domain of social interaction - 72 (51.50-81.00), while the domain of physical health is 63 (39.50-75.00); psychological condition - 63 (44.00-75.00); and environment - 63 (44.00-73.50).

Owczarek and Jaworski (2016) found that psoriasis occurring with either gender had the greatest influence on the domain of physical and mental health, to be followed by social interactions and the environment (23).

Our study on persons suffering from psoriasis has shown that the lowest median values concerned the domain of physical health (58.16 ± 23.4), thus being consistent with the results of Tang and Associates (2013) from Kuala Lumpur where the lowest median values for physical health were 42.25 ± 10.27 (24).

In the research of Stojković (2015), it was stressed that most of their respondents with psoriasis (40.2%) had shown that psoriasis has a moderate impact on the quality of their life. The lowest median values were achieved in the domain of physical health and in conducting their everyday tasks, while the highest concerned the social environment or the use of health care (8). The results of this research are consistent with ours. Anđelinović (2016) states that persons suffering from psoriasis in Croatia declare significantly lesser satisfaction with life and health (25).

Apart from affecting the quality of life, this chronic dermatosis leads to feelings of helplessness, shame, frustration or anger, which in time progresses to serious emotional and subsequently to mental problems (26).

The assessment of the depression rate among respondents in our sample measured by the Beck Depression Instruments gave us an average depression rate of 13, which ranged between 5 and 24.

Our findings agree with Hayes and Koo's (2010) research results (27). The same data on the degree of depression on the BDI scale were obtained by Turkish researchers, who reported average depression of 13.58 ± 6.11 (28).

The connection between psoriasis and depression was confirmed by Lakuta and Associates (2017) on a sample of 193 adult respondents with psoriasis (29). The same authors conducted another study in the same year among the psoriasis patients ($N = 147$) in urban areas of Poland to reveal that 13% of the diseased suffer from moderate degree of depression (30).

The results of our research have shown that depression is correlated with all four domains of quality of life. Our results are correlated with the data found in the literature (8, 30).

Serious psychological consequences may stem from mere diagnostication of psoriasis, as shown in Frieda and Associates' research (1995) indicating that almost half of their respondents are depressed or anxious only for the being aware of having psoriasis (31).

The quality of life of persons with psoriasis in our country is still insufficient or barely ever researched. The above-stated facts make the assessment of the quality of life of the psoriasis sufferers an important factor in evaluating the success of the treatment and current aspect of integration of the patients into the planning of therapeutic procedures, monitoring of their outcomes, and improving the quality of the treatment.

6. CONCLUSION

Due to the fact that median values of all four domains of quality of life (72, 63, 63, 63) of persons suffering from psoriasis are above half the value of the scales, the quality of life can be considered as satisfactory. The degree of depression and the domain of quality of life of persons with psoriasis are negatively correlated. As the values of measurement of the domains of quality of life getting poorer, the respondents' degree of depression grows.

- **Conflict of interest:** none declared.
- **Authors contribution:** J.M., A.P., M.Z. and S.B. made substantial contribution to conception and design (acquisition of data, analysis and interpretation of data). J.M., A.P., M.Z., A.J. and B.K. revised it critically and gave final approval of the version to be submitted.

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