

## The Influence of Clinical Manifestations and Treatment on Satisfaction with Life together with Positive and Negative Emotions in Systemic Lupus Erythematosus Patients

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**SUMMARY** The aim was to determine the satisfaction with life together with positive and negative emotions in systemic lupus erythematosus (SLE) patients, and correlate them with clinical manifestations of the disease and method of treatment. The study included 83 SLE patients. Satisfaction with life was measured using the Satisfaction with Life Scale. Positive and negative aspects were assessed using the Positive and Negative Affects Schedule. Other data were collected from patients at the time of measurement. Satisfaction with life as well as positive and negative emotions are connected with both the patient clinical condition and mode of therapy. There are correlations of these parameters with the number of medicines used and clinical manifestations of the disease. Systemic lupus erythematosus as a long-lasting and incurable disease has an impact not only on the patient quality of life but also on satisfaction with life and patient emotions. That is why it is very important to measure all these parameters to improve patient compliance.

**KEY WORDS:** quality of life, satisfaction with life, positive emotions, negative emotions, systemic lupus erythematosus, treatment, clinical manifestations

### INTRODUCTION

The term quality of life (QoL) was the point of interest for even ancient philosophers. Nevertheless, in the 1970s, it started to be considered in medical categories (1). Quality of life is strongly connected with satisfaction with life. However, there is still a lack of synonymous answer to the question whether these two terms mean the same or satisfaction is only part

of QoL. Very often, satisfaction is understood as happiness, pleasure. According to definition, it is a difference between own plans, assumptions and achieved goals (2). Satisfaction with life together with happiness, positive affects and lack of negative feelings is part of subjective well being (3). On the other hand, subjective well being is entered into the definition of

health established by the World Health Organization in 1947 (4). It seems that measurement of both satisfaction with life and affects allows for better recognition and understanding of the disease influence on the patient life. They can also contribute to decide on supplementing pharmacological therapy with psychological support in order to meet patient expectations. Sociological researches point out that a serious, chronic disease, loss of health and disability are the most frightening situations for the people of today.

Systemic lupus erythematosus (SLE) is an example of chronic, progressive disease. It is an autoimmune disease of connective tissues, which occurs mainly in young women. The course of SLE may frequently be characterized by exacerbations and remissions (5). The patients repeatedly require pharmacological therapy that has to be taken for life. The mode of treatment depends on clinical manifestations and dynamics of the disease. Nonsteroidal anti-inflammatory drugs (NSAIDs) and antimalarials are first line treatment for patients with mild or moderate SLE onset, whereas those with exacerbation have to use systemic glucocorticosteroids or immunosuppressants. It is also possible to combine therapy with drugs from different groups. Polytherapy allows for using lower drug doses, which is associated with a lower rate of side effects (6).

The main aim of this study was to assess the influence of clinical manifestations and therapy on satis-

faction with life together with positive and negative affects in SLE patients.

## MATERIAL AND METHODS

The study was performed in a group of 83 patients from Department of Dermatology and Venereology, Medical University of Lodz. All patients fulfilled at least 4 of 11 diagnostic criteria established by the American College of Rheumatology (ACR) (7). Clinical characteristics of study patients are presented in Table 1. Among clinical manifestations of SLE, arthralgia, photosensitivity and malar rash were most common. The patients were divided into 5 groups depending on the type of treatment (Table 1): without treatment; only antimalarials (A); only glucocorticosteroids (G); only immunosuppressants (I); combined therapy (PT, polytherapy): antimalarials and glucocorticosteroids (AG); antimalarials and immunosuppressants (AI); glucocorticosteroids and immunosuppressants (GI); and antimalarials, glucocorticosteroids, immunosuppressants (AGI)

Satisfaction with life was measured using the Satisfaction with Life Scale (SWLS) written by Deiner *et al.* (8) (Appendix 1). It allows for assessment of the level of satisfaction without somatic symptoms. The scale consists of 5 statements to which 1 to 7 points can be assigned, depending on how much the patient agrees

**Table 1.** Clinical characteristics of systemic lupus erythematosus patients

Clinical manifestation	Number of patients (%)
Malar rash	43 (52%)
Discoid rash	6 (7%)
Photosensitivity	64 (77%)
Oral ulcers	6 (7%)
Arthralgia	73 (88%)
Serositis	5 (6%)
Renal disorder	18 (22%)
Neurological disorder	10 (12%)
Hematological abnormalities	55 (66%)
Immunological abnormalities (anti dsDNA, anti Sm)	13 (16%)
Type of treatment	Number of patients (%)
Without treatment	5 (6%)
Only antimalarials (A)	14 (17%)
Only glucocorticosteroids (G)	16 (19%)
Only immunosuppressants (I)	10 (12%)
Polytherapy (PT)	
- antimalarials + glucocorticosteroids (AG)	38 (46%)
- antimalarials + immunosuppressants (AI)	13 (16%)
- glucocorticosteroids + immunosuppressants (GI)	11 (13%)
- antimalarials + glucocorticosteroids + immunosuppressants (AGI)	10 (12%)
	4 (5%)

with the statement. It is possible to achieve 5 to 35 points. Points are transformed into stens from 1 to 10. Sten is a unit of a psychometric test unit, normalized so that median in a population is 5.5 and standard deviation is 2. According to Polish standards, 1 to 4 stens mean low, 5 and 6 stens medium, and 7 to 10 stens high satisfaction with life (9).

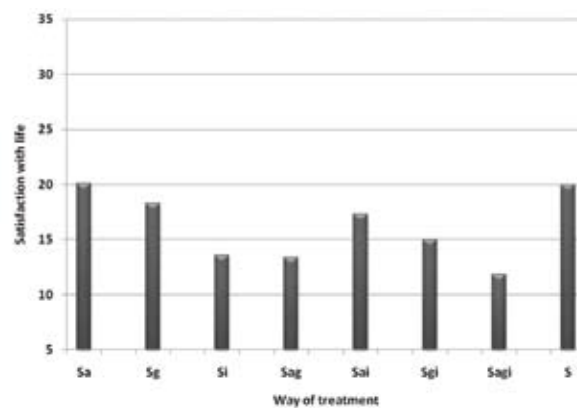
The Positive and Negative Affects Schedule (PANAS) was used to characterize patient emotions (10) (Appendix 2). It contains 20 statements describing 10 positive and 10 negative emotions. Responders can assign 1 to 5 points to each, depending on their feelings. It is possible to get 10 (the lowest positive or negative affect) to 50 (the highest positive or negative affect) points in both fields.

The study was approved by the Bioethics Committee of the Medical University of Lodz, Poland (No. RNN/124/06/KE). The patients were informed about the aim of the study and they all gave an informed consent for participation.

The results obtained were statistically analyzed using: Mann-Whitney and Kruskal-Wallis tests. Differences at  $p < 0.05$  were considered statistically significant.

## RESULTS

In the study group, the patients with neurological symptoms assessed their satisfaction with life higher



**Figure 1.** Values of satisfaction with life according to type of treatment in systemic lupus erythematosus patients.

### Legend

- Sa - satisfaction with life in patients using antimalarials
- Sg - satisfaction with life in patients using glucocorticosteroids
- Si - satisfaction with life in patients using immunosuppressants
- Sag - satisfaction with life in patients using antimalarials and glucocorticosteroids
- Sai - satisfaction with life in patients using antimalarials and immunosuppressants
- Sagi - satisfaction with life in patients using antimalarials, glucocorticosteroids and immunosuppressants
- S - satisfaction with life in patients without treatment

than those without them, yielding a statistically significant negative correlation ( $p = 0.04$ ). Concerning other manifestations of SLE, there were no statistically significant correlations ( $p > 0.05$ ).

Comparison of the presence of SLE symptoms and patient emotions showed a positive, statistically significant correlation between negative emotions and renal manifestations ( $p = 0.02$ ). Concerning other manifestations of SLE, there were no statistically significant correlations ( $p > 0.05$ ).

Patient satisfaction with life depended on the mode of therapy (Fig. 1). The highest life satisfaction presented patients using only antimalarials. It was comparable to the satisfaction of patients with clinical remission without treatment. In turn, the lowest satisfaction with life showed patients using polytherapy. Quite comparable results were obtained in patients using only glucocorticosteroids or antimalarials with immunosuppressants (Fig. 2).

Comparison of satisfaction with life between patients using treatment and those without therapy yielded a statistically significant positive correlation ( $p = 0.05$ ). The patients using only antimalarials presented higher satisfaction with life than those using only immunosuppressants ( $p = 0.01$ ) (Table 2, Fig. 1).

### Appendix 1. Satisfaction with life scale

#### Satisfaction With Life Scale

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows:

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neither agree nor disagree

5 = slightly agree

6 = agree

7 = strongly agree

\_\_\_ 1. In most ways my life is close to my ideal.

\_\_\_ 2. The conditions of my life are excellent.

\_\_\_ 3. I am satisfied with my life.

\_\_\_ 4. So far I have gotten the important things I want in life.

\_\_\_ 5. If I could live my life over, I would change almost nothing.

**Appendix 2. The positive and negative affect schedule.**

**PANAS**

This scale consists of number of words that describe the different feelings and emotions. Read each item, decide how do you feel during last week and then mark in the space next to that word. Use the following scale to record your answer.

1	2	3	4	5
very slightly/ not at all	a little	moderately	quite a bit	extremely

.....	<b>interested</b>
.....	distressed
.....	<b>excited</b>
.....	upset
.....	<b>strong</b>
.....	guilty
.....	scared
.....	hostile
.....	<b>enthusiastic</b>
.....	<b>proud</b>
.....	irritable
.....	<b>alert</b>
.....	ashamed
.....	<b>inspired</b>
.....	nervous
.....	<b>determinate</b>
.....	<b>attentive</b>
.....	jittery
.....	<b>active</b>
.....	afraid

A similar relation was observed between patients using only antimalarials and those using both antimalarials and immunosuppressants ( $p=0.02$ ) (Table 2, Fig. 1).

Moreover, there was a statistically significant positive correlation between satisfaction with life of patients using only glucocorticosteroids and those using only immunosuppressants ( $p=0.03$ ) (Table 2, Fig. 1). In addition, correlation between the results of patients taking only glucocorticosteroids and those using both antimalarials and glucocorticosteroids was also statistically significant and positive ( $p=0.01$ ) (Table 2, Fig. 1). The results obtained in other groups of patients were not statistically significant ( $p \geq 0.05$ ).

In contrast to the results connected with satisfaction, there were no statistically significant correlations of positive and negative emotions of patients with type of therapy ( $p \geq 0.05$ ).

**DISCUSSION**

Study results revealed the patients receiving some kind of treatment to present a higher level of satisfaction with life than those without medicamentous therapy. Moreover, no such observation was made for either type of emotions, positive or negative. In the study group of patients, there was no correlation between emotions and medicaments used. It could be explained by the fact that satisfaction is understood as a long-lasting notion, whereas emotions refer to specific, chosen situations. Treatment may cause burdensome side effects, which on the one hand influence daily activities, both occupational and social. On the other hand, effective treatment leads to achieving a higher satisfaction with life without influencing emotions. Patients with chronic and incurable disease accept the fact that medicaments are necessary. That is why therapy can be the way to achieve the aim, i.e. removing clinical symptoms of the disease. However, the fact of using medicaments need not be connected with emotions, it is just part of daily activity. Considering the number of medicaments used, the patients taking only one drug presented a higher satisfaction with life. It is probably connected with the patient clinical condition. Exacerbation of the disease requires the use of stronger, more aggressive therapeutic solutions. In addition, it sometimes prevents work and reduces social activity. These are reasons for significantly poorer satisfaction with life. Another important problem are clinical manifestations and localization of the disease. In the study of group of patients, we confirmed only the impact of neurologic manifestations on their satisfaction with life. It could be related to patient selection. Our patients presented rather mild and moderate course of SLE, without serious damage to vital organs. Thus, neurologic symptoms, even if mild, could be the most important problem for patients, influencing their satisfaction with life. On the other hand, using a lot of medicaments is connected with potential side effects such as gastrointestinal problems, higher risk of various infections, hematologic abnormalities, or even

**Table 2.** Correlations between type of treatment and satisfaction with life in SLE patients

Type of treatment	Satisfaction With Life Scale value	p
A - I	20.14-13.60	0.01
A - AI	20.14-17.27	0.02
G - I	18.31-13.60	0.03
G - AI	18.31-17.27	0.01

Legend

A - only antimalarials; I - only immunosuppressants; AI - antimalarials and immunosuppressants; G - only glucocorticosteroids

psychiatric disturbances. In our patients, satisfaction with life depended on the type of treatment, which was connected with their clinical condition. It was particularly noted in case of glucocorticosteroid therapy. The patients using only this kind of treatment had higher satisfaction with life than those using both antimalarials and glucocorticosteroids or only cytotoxic drugs. It could be ascribed to the fact that polytherapy is used in more severe cases, with multiple clinical manifestations. In this situation, monotherapy with glucocorticosteroids is not enough and the expected results cannot be obtained. It is worth to note that glucocorticosteroid therapy is connected with many side effects. Nevertheless, satisfaction with life of these patients was higher. We propose two explanations for this finding. On the one hand, in case of polytherapy the fact of using more drugs can play an important role for the patient. Even taking into account the so-called sparing effect, the fact of using more tablets is very important to patients. On the other hand, polytherapy is used when patients need more radical treatment because of their clinical condition, or the type of treatment used proved ineffective and failed to result in improvement.

Very often, it is hard to separate the effect of therapy from the impact of clinical manifestations of the disease on the satisfaction with life. That is why further researches are necessary.

In the study group of patients, renal manifestations of SLE were found to be connected with negative emotions. The reason for this observation could be the fact that this is the worst localization of the disease, which brings a rather poor prognosis and patients are aware of it.

In the literature, according to our knowledge, there is a lack of publications dealing with the problem of satisfaction with life in SLE patients. This kind of literature also seems to be lacking for other autoimmune diseases. Satisfaction with life is not only connected with the patient clinical condition, but also with the medicaments used, i.e. with medical aspect in general. Yet, it is also strongly influenced by self acceptance and relationships with other people, family or partner. Cultural and economic aspects such as job and outcomes also play a very important role (11). Campbell (12) demonstrated self complacency and self acceptance to be the most important factors on creating satisfaction with life in an average American respondent in the 1980s, followed by conditions of life, family relations and satisfaction with job. Interestingly, wellbeing and social relations were not as important as expected. These observations are inconsistent with our results. Differences may be caused by

disparities in study groups, especially in the field of health (no chronic, incurable disease in the American group). Moreover, it can be also caused by cultural, social and socioeconomic factors, which differ between the Polish and American populations. Zautra *et al.* (13) confirmed that the most important factors are not objective symptoms of the disease but subjective feelings of the patients.

Comparing the results (satisfaction with life vs. therapy) with the findings connected with QoL and treatment (reported elsewhere), we showed that the number of medicaments used was more important for creating QoL than satisfaction with life. Moreover, there was also correlation between therapy and psychological aspect of QoL (mental health, emotional role from SF-36). Janse *et al.* (14) and Slevin *et al.* (15) showed that there were important differences between the QoL measurement made by doctors and patients. Aggravation of clinical symptoms need not always influence subjective emotions of patient. The more so, what bothers the doctor need not to be a problem for the patient. Most studies dealing with medical, sociological and psychological problems emphasized the importance of result subjectivity. Satisfaction is created by many factors such as individual attitude towards problems, own plans, expectations, abilities to accomplish arrangements, as well as ability to deal with adversities and stress, and finally capacity to accept collapses.

Defining happiness as a state of mind allows for its measurement using questionnaires (16). Thus, it is possible to apply instruments such as SWLS or PANAS. Also, health can be measured in both objective (laboratory tests, medical imaging) and subjective (information obtained from the patient) ways.

Although it is well known that psychological factors may influence physical functioning, and mental wellbeing creates physical activity (4,16), literature data reveal that the feeling of happiness does not prolong survival in severely ill patients, but prolongs it in healthy population (16). In the literature, there are discrepancies considering the influence of positive emotions on the patient clinical condition. On the one hand, results presented by Veenhoven (16) and Zautra (16), as well as our own observations reveal that psychological stress causes exacerbation of the disease clinical manifestations, while a higher presence of positive emotions may lead to remission. On the other hand, studies showed that so-called "positive way of thinking" is not connected in any way with the patient clinical condition (17,19).

Literature data on the influence of happiness level and length of life in ill people are also ambiguous (18-

20). Using SWLS questionnaire, O'Connor and Valleder (21) did not confirm correlation between the level of happiness and survival time among people living in old age home. Maier and Smith (22) report on different results, confirming a positive correlation between the level of happiness measured by PANAS and length of life amongst people older than 70.

The literature data available (23) show that positive mental state is a way of defense against disease, e.g., immune reactions are better. Furthermore, observations made by different authors point out that people who are happy present higher activity that promotes health (16) and take bad news in a better way (24). According to own observations and literature data, Veenhoven (16) reports that those who are happy live longer because happiness protects mental health.

It seems that psyche plays an important role in creating wellbeing in both healthy and ill people. In addition, compliance is better when the patient presents positive attitude towards therapy and strategies of treatment proposed. These patients tolerate therapy related discomforts in a better way and react faster to the first symptoms of exacerbation. They become a real partner and cooperate with their doctor. Nowadays, when we resign from paternalistic medicine, it is very important.

Systemic lupus erythematosus as a chronic and incurable disease makes the patients affected to create an attitude towards life and is one of the elements that determine their satisfaction with life. Compliance, which is not a sole factor forming satisfaction, is very important and greatly depends on the patient-doctor relationship, not only about clinical condition. That is why it seems that measurement of both satisfaction and QoL may improve therapeutic strategies. So, besides clinical improvement, a higher level of self-assessment and wellbeing will be achieved.

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