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ORIGINAL ARTICLE

DETERMINANTS OF DYSMORPHIC BODY IMAGE IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS AND ITS INFLUENCE ON QUALITY OF LIFE

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ABSTRACT

Background and objectives SLE is a debilitating chronic disease that affects patient's quality of life in many aspects. Besides its tendency to affect female more than male, SLE has very annoying skin manifestations, also it affects patients' body weight and has psychiatric and emotional impacts. SLE has a very bad impact on BI by various ways; moreover its physical consequences, it causes emotional effects such as anxiety and depressive mood. So in our study, we aimed to evaluate SLE impacts on BI acceptance and on patient's quality of life.

Methods: our study conducted on 39 SLE patients and 39 apparently healthy individuals as a control group. Patients were assessed by clinical history, general examination, musculoskeletal and SLEDAI-2K score for disease activity. All participants evaluated by World Health Organization Quality of Life Scale and The Body Dysmorphic Disorder Examination (BDDE) which is a semi-structured clinical interview designed to diagnose body dysmorphic disorder and to measure symptoms of severely negative body image.

Results: A significant differences between cases and controls were evident in body image and physical domain of QOL at p value 0.00 and 0.002 respectively. Insignificant associations were detected between body image and disease related factors, p value > 0.05. A significant correlation between body image and psychological and environment domains of quality of life in cases group at p value 0.006 and 0.009 respectively.

Conclusion: SLE affects patients' body image acceptance and physical element of patient's quality of life with impact of body dysmorphic disorders on psychological and environment domains of quality of life.

Key words: Systemic lupus Erythematosus (SLE); body dysmorphic disorders (BDD); quality of life (QOL).

INTRODUCTION

Systemic lupus Erythematosus (SLE) is a chronic, multisystem autoimmune disease that has a widespread range of clinical manifestations which ranged from mild not interfering with patients daily activities, to severe ones that may threaten patient life [1].

SLE is similar to other debilitating chronic diseases; it affects patient's quality of life in many aspects. Besides its tendency to affect female more than male, SLE has very annoying skin

manifestations (malar rash, discoid lesion, hair falling), also it affects patients body weight and has psychiatric and emotional impacts [2].

SLE has significant neuropsychiatric manifestations with different and less obvious pathogenic mechanisms, with depression and anxiety are the most common ones, 4 times and twice more in SLE patients than controls respectively. These symptoms are related to recurrent painful attacks, impaired quality of life, low social support and disturbed social life [3].

Body Image (BI) is a sense of any person by his or her own body as regard shape, size, function and efficiency. Actually, BI is a reflection of all aspects of body health, so it is affected by any medical insults with recurrent and progressive course [2].

Body dysmorphic disorder (BDD) is characterized by a “preoccupation with one or more perceived defects or flaws in physical appearance that are not observable or appear slight to others,” and by “repetitive behaviors (e.g., mirror checking, excessive grooming, skin picking, reassurance seeking) or mental acts (e.g., comparing his or her appearance with that of others) in response to the appearance concerns.” Moreover, “clinically significant distress or impairment in important areas of functioning” are main characteristics. These “symptoms are not better explained by normal concerns with physical appearance or by concerns with body fat or weight”[4].

SLE has a very bad impact on BI by various ways; moreover its physical consequences, it causes emotional effects such as anxiety and depressive mood. Recurrent change in body mass index (BMI) either due to disease activity or medication side effects share strongly in patient defective BI [5]. So in our study, we aimed to evaluate SLE impacts on BI acceptance and on patient's quality of life.

SUBJECTS AND METHODS

The our study conducted on 39 SLE patients were classified according to Systemic Lupus International Collaborating Clinics (SLICC) classification criteria for SLE [6], carried out at Rheumatology and Rehabilitation department. Their age was ≥ 16 years, with one year or more disease duration, and they could understand and speak Arabic. 39 apparently healthy individuals with no clinical and laboratory evidence of SLE or other diseases, matched in age and sex with the patients served as control group.

Ethical consideration

This study was approved by the Institutional Review Board at Zagazig University Hospitals (IRB No: ZU-IRB#9826-4-10-2022). Participation was voluntary. The anonymity of the participants was kept. Both cases and controls were informed with the purpose of the research and informed consent was taken from them.

Clinical Assessment:

Data were collected from clinical history, general examination, musculoskeletal and neurological examination included patients age, disease duration, pain by VAS (0-100), height, weight, body mass index (BMI). History of other

diseases, number and types of co-morbidities with their medications, previous plastic surgery.

Assessment of disease activity by Patients were assessed by SLEDAI-2K score, this index measures disease activity within the last 10 days. It is a global index including 24 weighted objective clinical and laboratory variables. Disease activity can range from 0 to 105 [7], with activity categories defined on the basis of SLEDAI scores [8] no activity (SLEDAI; 0), mild activity (SLEDAI; 1–5), moderate activity (SLEDAI; 6–10), high activity (SLEDAI; 11–19), very high activity (SLEDAI ≥ 20).

Laboratory Investigations included CBC, ESR, C-reactive protein, Creatinin clearance, Complete urine analysis and total protein in 24hrs urine collection, Kidney function tests, Liver function tests, ANA and Anti-dsDNA antibodies titre, Complement: C3, C4 assessment.

All participants (including both cases and control subjects) enrolled in the study were subjected to the following:

1- semi-structured interview: was employed to obtain socio-demographic data and clinical history.

2-World Health Organization Quality of Life Scale (WHOQOL-BREF): it has been used to provide a short form quality of life assessment of physicians, and **contains** a total of 26 questions based on a four domain structure, which are: Physical health, Psychological, Social relationships, Environment. There are also two separately scored items that assess Overall QOL and General Health Satisfaction. Items are answered on a 5-point scale in relation to a two week timeframe. The mean of items within each domain is multiplied by four to yield the domain score (range 4–20). Higher scores indicate higher QOL [9]. We used a cut-off < 60 for overall quality of life of **Silva et al** to divide the participants into poor and good quality [10]

3-The Body Dysmorphic Disorder Examination (BDDE) is a semi-structured clinical interview designed to diagnose body dysmorphic disorder and to measure symptoms of severely negative body image. It correlated with measures of body image, negative self-esteem, and psychological symptoms, and was sensitive to change following treatment of body dysmorphic disorder. It consists of 34 questions for measuring degree of satisfaction about individuals body and image with a higher numbers means good satisfaction and lower numbers means poor satisfaction [11].

Statistical analysis:

Data was analyzed using SPSS version 25. Date was presented in frequency tables as number and percentage. Pearson chi square was used to test the association between body Image and disease

related factors with significance level ≤ 0.05 . Pearson correlation was used to test the relationship between body image and other linear variables with significance level ≤ 0.05 . Matching between cases and controls was tested using Pearson chi square.

RESULTS

According to Table 1, the bulk of the cases under investigation (92.3%) were females between the ages of 19 and 65. Three age categories were identified: with mean age 32.9 years. Overweight was evident in 51.2% of the cases, the mean of BMI was 29.4 ± 3.5 . Most of patients (84.6%) had active disease. Patients' mean disease duration was 7.8 year. Patients were on a variety of medications to treat SLE as 35.9% were taking Cellcept, 48.7% of the cases were receiving Imuran and only 2.6% were receiving Neoral , 84.6% received corticosteroids in doses ≤ 20 mg. Participants of the cases group showed

complications in 84.6% with arthritis being the most common manifestations (61.5%). According to Body Image; 84.6% of cases had fair perception of BI with mean 74.8 ± 18.4 .

Table 2 shows matching between cases and controls regarding age and gender p value 1. However, the significant differences between them were evident in body image and physical domain of QOL at p value 0.00 and 0.002 respectively. Little variations between patients and controls were detected in the psychological, social, and environmental aspects of quality of life that were not statistically significant.

Table 3 shows insignificant associations between body image and disease related factors, p value > 0.05 .

Figures 1 and 2 show significant correlation between body image and psychological and environment domains of quality of life in cases group at p value 0.006 and 0.009 respectively.

RESULTS

Table 1: General and clinical characteristics of patients

	No.(%)	Mean \pm SD
Gender		-
• Male	3 (7.7)	
• Female	36 (92.3)	
Age		32.9 \pm 8.9
• 20-29	15 (38.5)	
• 30-39	15 (38.5)	
• ≥ 40	9 (23)	
BMI		29.4 \pm 3.5
• Normal	4 (10.3)	
• Overweight	20 (51.2)	
• Obese	15 (38.5)	
Disease activity		6.5 \pm 4.9
• No activity	6 (15.4)	
• Active	33 (84.6)	
Disease duration		7.8 \pm 5.9
• 1-5 years	18 (46.2)	
• 6-10 years	8 (20.5)	
• >10 years	13 (33.3)	
Drugs		-
• Cellcept	14 (35.9)	
• Endoxan	2 (5.1)	
• Imuran	19 (48.7)	
• Methotrexat	3 (7.7)	
• Neoral	1 (2.6)	
CCs Dose		-
• ≤ 20 mg	33 (84.6)	
• >20 mg	6 (15.4)	
Complications		-
• No	6 (15.4)	
• Yes	33 (84.6)	
Body image		74.8 \pm 18.4
• Poor	0 (0)	
• Fair	33 (84.6)	
• Good	6 (15.4)	
Total	39 (100)	-
Disease manifestations		-
• Nephritis	23 (59)	
• Arthritis	24 (61.5)	

	No.(%)	Mean ±SD
• CNS	5 (12.8)	
• Skin	6 (15.4)	

Table 2: Comparison between cases and controls

	Cases		Control		P value
	No.	%	No.	%	
Gender					
• Male	3	7.7	2	5.1	1
• Female	36	92.3	37	49.9	
Age					
• 20-29	15	38.5	15	38.5	1
• 30-39	15	38.5	15	38.5	
• ≥40	9	23	9	23	
Body image					
• Fair	33	84.6	9	23.1	0.000*
• Good	6	15.4	30	76.9	
Physical domain of QOL					
• Poor	26	66.7	12	30.8	0.002*
• Good	13	33.3	27	69.2	
Psychological domain of QOL					
• Poor	19	48.7	15	38.5	0.36
• Good	20	51.3	24	61.5	
Social domain of QOL					
• Poor	18	46.2	13	33.3	0.24
• Good	21	53.8	26	66.7	
Environment					
• Poor	25	64.1	18	46.2	0.11
• Good	14	35.9	21	53.8	
Total	39	100	39	100	

*Statistically significant

Table 3: Association between Body Image and Disease related factors

	Fair		Good		P value
	No.	%	No.	%	
Disease activity					
• Not active	5	15	1	16.7	0.9
• Active	28	85	5	83.3	
Disease duration					
• 1-5 years	14	42.4	4	66.7	0.5
• 6-10 years	7	21.2	1	16.7	
• >10 years	12	36.4	1	16.7	
CCs Dose					
• ≤20 mg	29	87.9	4	66.7	0.2
• >20 mg	4	12.1	2	33.3	

	Fair		Good		P value
	No.	%	No.	%	
Complications					
• No	6	18.2	0	0	0.6
• Yes	27	81.8	6	100	
Disease manifestations					
Nephritis					
• Yes	19	57.6	4	66.7	0.7
• No	14	42.4	2	33.3	
Arthritis					
• Yes	20	60.6	4	66.7	0.8
• No	13	39.4	2	33.3	
CNS					
• Yes	4	12.1	1	16.7	0.8
• No	29	87.9	5	83.3	
Skin					
• Yes	9	27.3	0	0	0.1
• No	24	72.7	6	100	

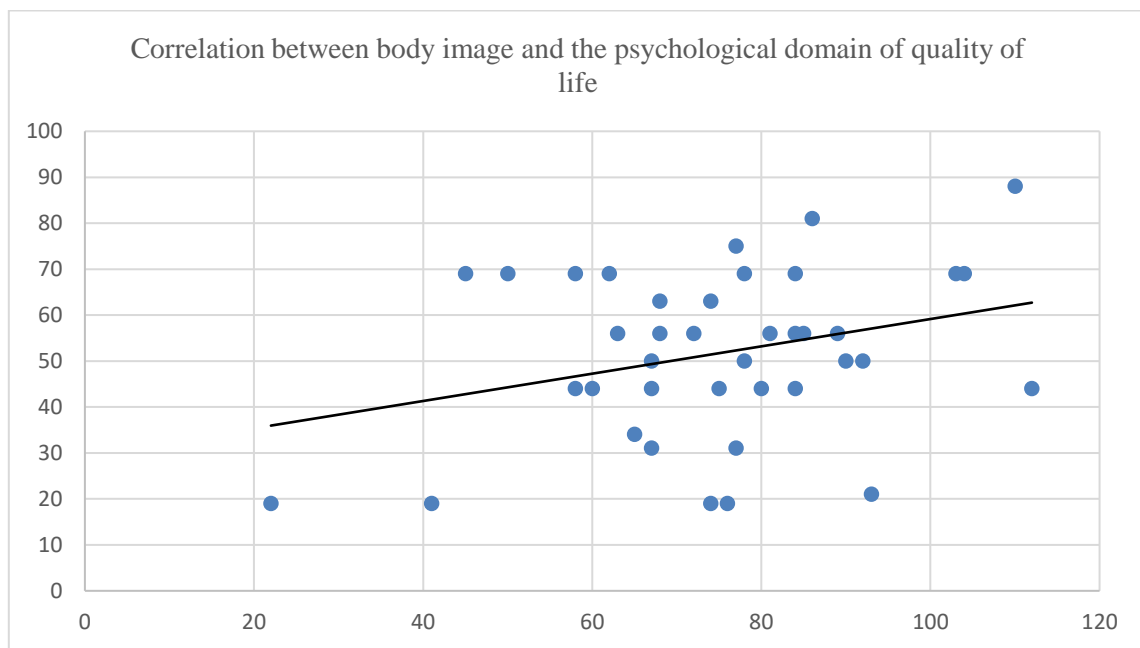


Figure 1: shows significant positive moderate correlation between body image and the psychological domain of quality of life at p value 0.006.

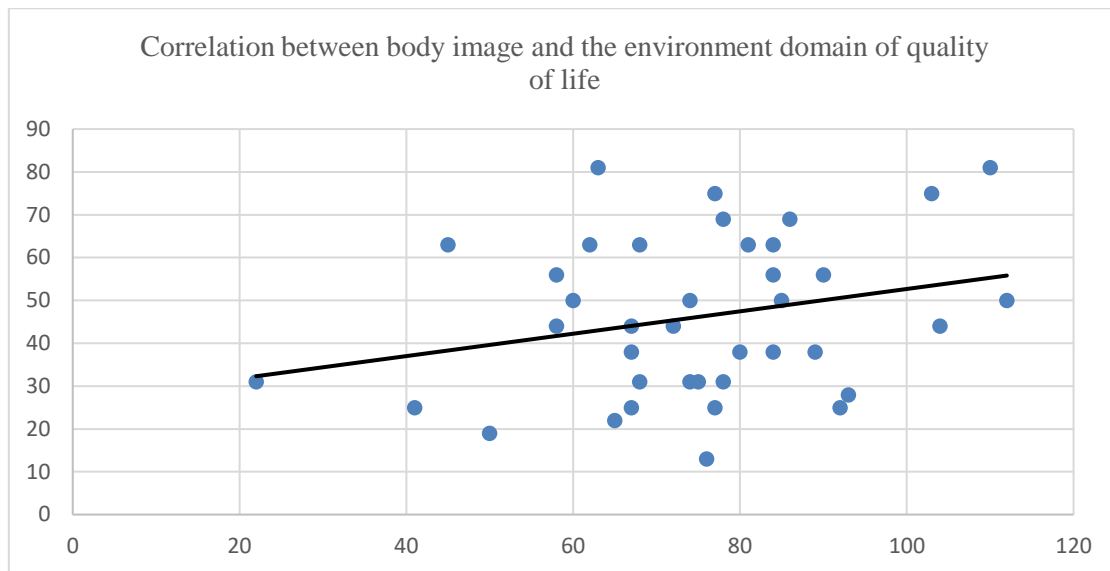


Figure 2: shows significant positive moderate correlation between body image and the environment domain of quality of life at p value 0.009.

DISCUSSION

Body dysmorphic disorder (BDD) is characterized by an obsession with a perceived or insignificant flaw in one's appearance [12]. On the other hand, systemic lupus erythematosus (SLE) is a chronic autoimmune condition that mostly impacts the kidneys, skin, joints, and other organs. A patient's psychosocial functioning and QOL may be impacted by SLE or its treatment, which may have an impact on long-term health behaviors and subsequent health outcomes. Accepting the illness or the necessity for continued medical care, as well as taking medications with undesirable side effects, have an impact on one's personal development, professional prospects, body image, and self-esteem. [13,14].

The primary objective of this study was to assess the value of Body Image Disturbances among systemic lupus erythematosus patients. Also we correlate between these disturbances and disease activity parameters and quality of life of SLE patients.

The current study's findings that 84.6% of the SLE patients under investigation have disorders of body image along with their prevalence of overweight (51.2%) and obesity (38.5%) were in agreement with those of **Stacy L. Weinberg et al.**, who found that more than 80% of SLE patients noticed changes in appearance not only from the disease but also as a side effect of medications [2]. **Moses N et al.** suggested that significant disfigurement and functional impairment could result from SLE [15].

However 23.1% of the control revealed fair BI that was concurrent with studies on BDD in different populations that found a prevalence rate

in normal control groups, these individuals may appear attractive to others, but their perception of themselves is distorted and characterized by obsessive self-criticism [16].

The fair body image was more significant in our SLE patients compared with the control group; p value 0.000, also Physical domain OQL showed statistically significant difference than control group p value 0.002. That was matched to two separate studies by **Chen et al** [17] [18] and two other studies by **Gholizadeh et al** [19] and **Zhao et al** who proved that 18.3% SLE patients had BID, which were significantly higher than the control group (8%) [20] Many researches proved that SLE patients' poor quality of life and disease activity have a strong relationship to poor life styles [21,22].

Insignificant associations were founded between BI and four items related to SLE (CCs dose, Disease duration , SLEDAI and disease manifestations) $p > 0.05$ that was parallel to **Cornwell and Schmitt** who found that Perceived health status was not related to body image. Also age and disease duration were weakly positively related to perceived health status. These were attributed to lack of variability and small sample size in our study and **Cornwell** study as well [23]. However, body image is influenced by a variety of circumstances. Because different countries and areas have varied aesthetic standards and aesthetic cultures, their BIDQ scores will also vary [18]. As almost all our patients from rural areas rather than civilized regions beside their religious thoughts of satisfaction and acceptance that affect the relation between BID and disease activity features. On the other hand, our results were not matched with

Fitzcarrald et al., who demonstrated that fatigue and decreased energy level were associated with body image concerns in SLE patients [24]

Our data demonstrated significant correlations between BI and psychological and environmental domains of the quality of life p value 0,006 and 0.009 respectively. These results are in agreement with **Zhao et al** whose results established significant correlations among personal health insurance, complication of diabetes, appearance of new rash, depression, anxiety, self-esteem and BID in patients with SLE [20], as the emotional and psychological burden of living with a chronic illness may exacerbate body image concerns and contribute to the development of BDD symptoms [13].

Conclusions:

SLE affects patients' body image acceptance and physical element of patient's quality of life with impact of body dysmorphic disorders on psychological and environment domains of quality of life. It is crucial for people with SLE who struggle with body image issues or display indications of BDD to get expert assistance from mental health professionals skilled in handling BDD or similar diseases to addresses both underlying SLE and the psychological elements of BDD, treatment options include cognitive-behavioral therapy (CBT), medication, or a combination of methods.

Recommendations:

The drawback is that our study is cross sectional study, as all body image questions are subjective so it is preferable to reassess patients after a period of time under varied conditions (eg. Inactive) and compare BI that will be more useful. Researches on highly variable samples are also necessary.

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