ASSOCIATION OF NUMBER OF FIBROMYALGIA TENDER POINTS WITH HEALTH STATUS IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) PATIENTS

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Summary

Fibromyalgia Tender Points (FMTPs) and functional health status measured by Health Assessment Questionnaire (HAQ) as well as health related quality of life by short form-36 (SF-36) in Systemic Lupus Erythematosus (SLE) patients have integrated adherent to each other. Comparison of fibromyalgia tender points and health status in many studies revealed remarkable correlation in both chronic rheumatologic diseases. We observed higher HAQ score and significant positive correlation between FMTP and HAQ score and we also found significant negative correlation in almost all domains of SF-36 with FMTP in SLE patients. Therefore, reduced functional status was found in SLE patients with higher FMTP count. To determine influence of the number of fibromyalgia tender points on functional health status as well as health related quality of life in SLE patients. The observational study carried out enrolling 67 female SLE patients and equal number of asymptomatic female subjects in Lupus Clinic of Rheumatology Wing, BSMMU, Dhaka from April 2005 to October 2006.After fulfilling the inclusion criteria with a detailed history and thorough physical examinations, obtained data were recorded in a pro-forma. 18 FMTP sites and 6 control sites were examined. Positive FMTP scores were recorded in a body chart. Culturally adopted and validated Bengali version of HAQ and SF-36 were filled-up to assess the self-reported health status. Both of the SLE patients and control subjects were classified into two subgroups. 0-10 FMTP' group and ≥ 11 FMTP group. The HAQ score (Mean + SD) of

SLE patients and of controls were 0.54 + 0.54 and 0.17 + 0.25 respectively. The difference was statistically significant (p <0.001). The score (Mean + SD) of all domains' of SF-36 in both the studied groups were also significantly different. In this SLE series significant correlation (R - + 0.390, p 0.001) was observed between HAQ score and FMTP. And significant correlation was also observed almost in all domains of SF-36 with FMTP. Health status in SLE patients was poor in those who have higher number of FMTP count. Health status was more reflective by SF-36 in comparison to HAQ.

Key words: Fibromyalgia tender points; Systemic lupus erythematosus; Short form-36.

Introduction

Fibromyalgia (FM) and other pain syndrome constitute a huge medical burden that is not addressed adequately by traditional medicine [1]. FM is a nonarticular rheumatologic condition with diverse set of signs and symptoms, including diffuse and chronic widespread musculoskeletal pain, multiple regional tender points (TP) on examination, poor and nonrestrictive sleep, stiffness, and fatigue [2,3]. The pathophysiology of FM is still not fully understood. However, only the following two hallmarks are necessary to make a diagnosis of FM using 1990 American College of Rheumatology (ACR) diagnostic criteria [2].

Chronic widespread musculoskeletal pain for 3 months or more involving three or more segments of the body.

Presence of 11 or more out of 18 specific tender point sites on digital palpation with an approximate force of 4 kg/cm^2 or pressure which whitens the nail bed of thumb [4,3].

Widespread pain was defined in five regions: the right side of body, the left side of body, the upper part above the waist, the lower part below the waist and the axial skeleton e.g, cervical spine, anterior chest, thoracic spine or low back [5,6].

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The prevalence of FM ranges between 0.75 and 3 percent in the general population [7]. In Bangladesh, the point prevalence of FM is about 4.3 percent according to a COPCORD study [8].

The prevalence of SLE varies from country to country. It is about 9 times as common in women as men, with peak age of onset between 20 and 40 years [9]. Extrapolation of prevalence rate of SLE in Bangladesh is 0.54 percent [8].

Secondary fibromyalgia has been reported in other disorders including osteoarthritis, Rheumatoid Arthritis (RA) SLE, hypothyroidism and HIV infection. However, the relationship between FM and these disorders has not been well defined [7].

Evaluation of health status as a disease outcome has become an important component of routine clinical care, and health status questionnaires have become a tool to measure and understand the versatile aspect of a patient's health status and outcome [3]. The Health Assessment Questionnaire (HAQ) is simple, widely used and validated in patients with SLE and assesses the physical health status over the preceding week [3]. Currently, the Medical Outcome Study (MOS) short form- 36 (SF-36) is used in clinical practice and health survey. It assesses the health related quality of life which incorporates mental, social, physical health status over the preceding month. The SF-36 has been validated by Stoll and colleagues [15].

The presence of FM however, causing impairment of health related quality of life among SLE patients [3]. It was found that FM, as assessed by the tender point count, correlated with all domains of the SF-36. In clinical practice and in trials, the presence of FM may mask the effect of treatment out come and change in quality of life [16].

Our objective is to ascertain correlation between number of Fibromyalgia Tender Points (FMTP) and functional health status measured by health assessment questionnaire (HAQ) as well as health related quality of life by short form-36 (SF-36) in SLE patients. Hence, to determine influence of the number of fibromyalgia tender points on functional health status as well as health related quality of life in SLE patients.

Materials and methods
Type of study : Case control observational study.
Study period : April 2005 to October 2006.
Place of study : Lupus Clinic of Rheumatology Wing, Department of Medicine, Bangabandhu Sheikh Mujib Medical University (BSMMU) Dhaka.

Sample Size
Total 67 female SLE patients and equal number of age and sex-matched asymptomatic female subjects were studied as control on the basis of a set of inclusion and exclusion criteria. The samples were taken by recruiting SLE patients attending the SLE Clinic, Rheumatology wing, BSMMU. All the SLE patients and the control subjects were requested to give informed consent to participate and they did the same accordingly. After fulfilling the inclusion criteria, a detailed history was taken and thorough physical examinations were performed to record the obtained data in a pro-forma, and different structured questionnaires. The questionnaires were designed to get socio-demographic variables like age, occupation, and household income, level of education, disease duration and clinical information, such as clinical features of SLE in terms ACR criteria to diagnose SLE, number of FMTPs. The health status measuring tools HAQ and SF-36 questionnaires are also filled up in the respective sheets.

Inclusion Criteria
Case
Confirmed SLE patients of any duration who met the 4 or more 1997 ACR criteria and who attended scheduled visits to Lupus Clinic at BSMMU.
Female sex
Age 16 years and above.
Control
Patients having no rheumatological disease and asymptomatic.
Female sex
Age 16 and above.

Exclusion Criteria
Case
Overlap cases of SLE with other rheumatological disease, such as SLE/rheumatoid arthritis, SLE/polymyositis, SLE/dermatomyositis, SLE/ spondyloarthopathy.

SLE paitents with other major comoribd conditions like diabetes mellitus, ischaemic heart disease, cerebrovascular disease, chronic renal failure, chronic obstructive pulmonary disease and pregnancy.

Control
Patients with any rheumatological disease, including SLE.
Patients with diabetes mellitus, ischemic heart disease, cardiovascular disease, chronic renal failure, chronic obstructive pulmonary disease and pregnancy.

Fibromyalgia tender point survey and determination
All study subjects and controls were further requested to identify the presence or experience of persistent pain area at any body part. The subjects were subsequently examined to determine the number of fibromyalgia tender points by digital palpation with the thumb-pad of dominant hand i.e. the force was so in such strength that just whitened the nail bed to the site examined. Eighteen active sites (9 pairs) were examined: at sub occipital muscle insertion, anterior aspects of intertransverse spaces at C5-C7, midpoint of the upper border of trapezius, supraspinatus at origin above the scapular spine, second rib at the second costochondral junction, at lateral epicondyle 2 cm distally, upper and outer quadrant of buttock, greater trochantzer just posterior to the trochanteric prominence and knee at the medial pad of fat proximal to the joint line. Six control sites (3 pairs) were examined. Forearm: at distal third of the forearm, thumbnail and Midfoot: at the midfoot of the dorsal third metatarsal[12]. A point was considered tender if there was a spontaneous verbal affirmation of pain from the subject in response to firm pressure. In this way of standardized manual tender point survey system, 18 FMTP sites and 6 control sites were examined and positive FMTP scores were remarked in a body chart for each case and control subject.

Functional health status assessment
Health status comprises of physical health status and mental health status. The Health Assessment Questionnaire (HAQ) measures only physical component, whereas the Medical Outcome Survey Short Form 36 (MOSSF-36) measures both physical and mental components of health status (i.e. Health related quality of life). HAQ and SF-36 are found in different language version in different countries for better understanding the questionnaire by the regional population.

To measure health status in SLE patients and in control subjects, all were requested to complete the culturally adopted and validated Bengali version of the Health Assessment Questionnaire (HAQ). The HAQ assessed eight functional components of measuring the ability to perform daily living activities over a period of week, such as dressing, grooming, arising eating walking hygiene reaching, gripping and general activities (e.g. Running errands, getting in and out of cars, auto rickshaw, and cycle-rickshaw). The use of device, equipment and assistance were also included and difficulties in performing activities graded on a four-level ordinal scale. The scoring was done on the following scale: a) Without difficulty = 0 b) With difficulty = 1 c) With some help from another person or with a device = 2 and d) unable to do = 3. The individual scores of eight components were summed and divided by 8 to get an average score which was the ultimate HAQ disability index or HAQ score (Range 0-3).

Assessment of health-related quality of life
The Health Related Quality of Life (HRQoL) incorporates mental, social and physical health assessed by questionnaire and currently measured by short from 36 (SF-36) which has been developed by Ware and Sherbourne (1992) and validated by Stoll and colleagues (1997) [16,15]. However, the SF-36 was developed not only for use in lupus patients, but also for other diseases which were internationally validated. Moreover, it covers a wider range of items and has been translated into many different countries in different languages. The SF-36 assesses health status over the previous month in the following 8 sub classes: 1) Physical functioning 2) Role-physical 3) bodily pain 4) General health perceptions 5) Vitality 6) Social function 7) Role emotional and 8) Mental health.

The scoring of each subclass of SF-36 was made by using Likert scoring method [17]. In this system, scoring was done by simple algebraic summation of response rating scale. Before that some components of some subscales i.e. vitality and few mental components of mental health subscale where lower numeric response value (Raw score) indicates the poorer of better health status, i.e. lower or higher scores of vice versa were recorded. Poorer or better was standardized by recoding the initial response value to achieve the actual grading of raw response value in order to get the total algebraic sum of response value. Thereafter, the lower value and the highest value represented 0 and 100 score, respectively, and the values in-between lowest and highest values were also corresponded to the scores lying in-between 0 and 100 scale with an equal interval and also denoted the percentage of total possible score achieved. A highest score or 100 indicated better health status, whereas a lower or 0 score reflected least favorable level of health status in an individual subclass of SF-36.

All cases and control subjects were requested to fill-up culturally adopted and validated Bengali version of SF-36 to assess this self-reported health status. The SF-36 assessed eight domains of health and wellbeing, including vitality, role limitation due to emotional problem and mental health.

The subject group classification
SLE patients (Cases) were classified for analysis into two subgroups, those who noted to have 10 or less FMTP were regarded as '0-10 FMTP' group and the rest who noted 11 or more FMTP were also considered as ≥11 FMTP group The control subjects were also classified into two subgroups in the same way.

All these activities have been done on the same day of scheduled visit to lupus clinic.

Data analysis
The hundred percent cross-checks were done after editing, which gave a good quality of data. p value 0.05 with 95% confidence interval was considered as the level of statistical significance. After editing, the coded data were directly entered into the computer by using Statistical Package for Social Science (SPSS) 10.0 Windows Version for statistical analysis. This included descriptive statistics (Mean, SD, Range, Percentage), Correlation-coefficient, Student's 't' test, chi-square test.

Results

A total 67 consecutive female Systemic Lupus Erythematosus (SLE) patients and equal number of female healthy controls were enrolled in this observational study. Their sociodemographic characteristics, Health Assessment Questionnaire (HAQ) scores, short form-36 (SF-36) scores, number of Fibromyalgia Tender Points (FMTP) were studied in both groups.

Sociodemographic characteristics: Sociodemographic characteristics of SLE patients and control subjects are shown in Table I.

Five years interval was taken for age grouping in both groups. The age range was 16 to 55 years. The age (Mean ± SD) of the SLE patients and controls were 26.82 ± 8.02 and 29.67 ± 10.80 years respectively. No significant difference (p = 0.091) in age was observed in this study population. In this series, among the occupation 63% was house-maker in SLE group. On the other hand student and service holder were 42% and 24% respectively in control group. The difference was statistically significant (p = 0.004). 69% of control subjects were in >X years educational level.48% subjects in SLE group were in VI-X years educational level. Family income classes were nearly similar in both groups.

Baseline characteristics: In this series, the common clinical features were arthritis, oral ulcer, malar rash, photosensitivity and serositis; 86.6%, 82.1%, 67.2%, and 10.4% respectively (Table II).

The laboratory features of these patients were anti-nuclear antibody (ANA) Immunological disorder, renal disorder, neurological disorder and hematological disorders, 91%, 88.1%, 34.3 %, 32.8% and 20.9% respectively.

At enrollment FMTPs HAQ score, SF-36 domains' score of both SLE and controls and group were shown. The number of FMTP (Mean+ SD) of both the study groups was 8.80 + 6.40 (SLE) and 3.63 + 4.90 (Controls) respectively. The difference was statistically significant (p<0.001) as shown in Table III.

The HAQ score (Mean + SD) of SLE patients and controls were 0.54 + 0.54 and 0.17 + 0.25 respectively. The difference was also statistically significant (p <0.001). The score (Mean + SD) of all domains' of SF-36 in both the studied groups were also significantly different.

Comparison of fibromyalgia tender points and health status: The SLE patients were sub grouped according to FMTP count into 0-10 and ≥11 FMTP groups. In Table IV. the HAQ score (Mean + SD) of 0-10 and ≥11 FMTP group were 0.44 + 0.21 and 0.77 + 0.52 respectively. The difference was statistically significant (p < 0.018). Significant in SFGH, SFBP and SFVT sub domains of SF-36 was also observed.

Correlates of health status and FMTP: In this SLE series significant positive correlation (R + 0.390, p 0.001) was observed between FMTP and HAQ score (Table V). Significant negative correlation was observed in all domains of SF-36 with FMTP except SFSF. Though remarkable significant correlation was observed in SFGH, SFRP, SFRE, SFBP and SFVT sub domains of SF-36 with FMTP.

Table I : Sociodemographic characteristics of systemic lupus erythematosus and control groups

| Parameter | SLE (n =67) | | Control (n=67) | | P |
	No.	(%)	No.	(%)	
Age (years)					
16-20	19	(28.4)	22	(32.8)	0.091 (χ^2)
21-25	15	(22.4)	8	(11.9)	
26-30	16	(23.9)	7	(10.4)	
31-35	9	(13.4)	13	(19.4)	
36-40	5	(7.5)	5	(7.5)	
41-45	1	(1.5)	6	(9.0)	
46-50	1	(1.5)	4	(6.0)	
> 50	1	(1.5)	2	(3.0)	
Mean±SD	26.82 ± 8.02		29.67 ± 10.80		0.085
Occupation					0.004 (χ^2)
House-maker	42	(62.7)	23	(34.3)	
Service	7	(10.4)	16	(23.9)	
Student	18	(26.9)	28	(41.8)	
Level of education					
Cannot read/write	0		5	(7.5)	
Can read and sign	0		2	(3.0)	
I-V years	10	(14.9)	4	(6.0)	
VI-X years	32	(47.8)	10	(14.9)	
> X years	25	(37.3)	46	(68.7)	
Family income (Taka/month)					
2,000-5,000	22	(32.8)	21	(31.3)	
> 5,000-10,000	31	(46.3)	20	(29.9)	
> 10,000-20,000	12	(17.9)	18	(26.9)	
> 20,000	2	(3.0)	8	(11.9)	

Test: Chi-square test/unpaired Student's `t' test
SLE : Systemic Lupus Erythematosus   SD : Standard Deviation

Table II : Baseline characteristics of SLE patients at enrollment (n=67)

Character	No.	(%)
Arthritis	58	(86.6)
Oral/nasopharyngeal ulceration	55	(82.1)
Malar rash	45	(67.2)
Photosensitivity	45	(67.2)
Discoid rash	36	(53.7)
Serositis	7	(10.4)
Pleuritic pain/pleural rub/		
Pleural effusion/pericarditis		
Antinuclear antibody	61	(91.0)
Immunologic disorder	59	(88.1)
Anti-ds deoxyribo nucleic acid/		
Anti-Smith antibody/		
Anti-phospholipid antibody/		
Renal disorder	23	(34.3)
Proteinuria > 0.05 gram/day		
Cellular casts (RBC/WBC/tubular cell)		
Neurologic disorder	22	(32.8)
Psychosis/seizures		
Haemolytic disorder	14	(20.9)
Haematologic anaemia/leucopenia		
Lymphopenia/thrombocytopenia		

SLE : Systemic Lupus Erythematosus

Table III : At enrollment FMTP, HAQ score SF-36 domains' scores in both control and SLE group

Parameter	SLE (n=67) (Mean+ SD	Control (n=67) (Mean+ SD)	p
FMTP	8.80+6.40	3.63+4.90	<0.001
HAQ score	0.56+0.54 0.	0.17+0.25	<0.001
SF-36 score			
SFGH	38.66+25.97	61.25+22.98	<0.001
SFPF	55.82+23.85	73.70+15.49	<0.001
SFRP	50.75+44.59	81.72+28.39	<0.001
SFRE	58.21+46.91	77.61+39.52	0.011
SFSF	72.46+27.06	89.25+15.92	<0.001
SFBP	64.34+28.98	85.07+21.93	<0.001
SFVT	57.61+20.55	70.45+17.64	<0.001
SFMH	68.42+20.22	77.61+17.45	0.006

Test: Unpaired Student's 't' test

SD	:	Standard Deviation	SFRE	:	Short From Role Emotional
SLE	:	Systemic lupus Erythematosus	SFSF	:	Short Form Social Function
FMTP	:	Fibromyalgia Tender Point	SFBP	:	Short From Bodily Pain
HAQ	:	Health Asscssment Questionnaire	SFVT	:	Short From Vitality
SF-36	:	Short Form-36	SFMH	:	Short Form Mental Health
SFGH	:	Short Form General Health			
SFRP	:	Short Form Role Physical			

Table IV : Association between FMTP and HAQ score. SF-36 domains score in SLE patients (n=67)

Parameter	SLE (n=67)		p
	FMTP 0-10 (n=43) (Mean+SD)	FMTP>11 (n=24) (Mean + SD	
HAQ score	0.44+0.21	0.77+0.52	0.018
SF-36 score			
SFGH	47.83+26.51	24.17+17.61	<0.001
SFPE	61.41+23.75	48.01+23.08	0.045
SFRP	63.59+44.00	29.17+35.10	0.002
SFRE	72.46+40.55	34.71+47.36	0.002
SFSF	77.55+26.10	66.25+27.87	0.162
SFBP	73.18+28.17	49.07+24.72	<0.001
SFVT	64.67+18.39	46.46+21.03	<0.001
SFMH	74.37+19.06	59.67+19.56	0.007

Test : Unpaired Student's 't' test

SD	: Standard Deviation	SFRE	: Short From Role Emotional
SLE	: Systemic lupus Erythematosus	SFSF	: Short Form Social Function
FMTP	: Fibromyalgia Tender Point	SFBP	: Short From Bodily Pain
HAQ	: Health Assessment Questionnaire	SFVT	: Short From Vitality
SF-36	: Short Form-36	SFMH	: Short From Mental Health
SFGH	: Short Form General Health		
FRP	: Short Form Role Physical		

Table V : Correlation between FMTP and HAQ + score, and SF-36 domains' scores in SLE patients (n=67)

Parameter	r	p
FMTP count vs HOQ score	=0.390	< 0.001
FMTP count vs SF-36 domains		
FMTP count vs SFGH	-0.483	< 0.001
FMTP count vs SFPF	-0.334	< 0.006
FMTP count vs SFRP	-0.416	< 0.001
FMTP count vs SFRE	-0.427	< 0.001
FMTP count vs SFSF	-0.212	0.084
FMTP count vs SFBP	-0.390	< 0.001
FMTP count vs SFVT	-0. 415	< 0.001
FMTP count vs SFMH	-0.326	0.007

Test: Person correlation
FM tender point used as a continuous variable

SLE	: Systemic Lupus Erythematisus	SFRP	: Short From Role Physical (50.75±44.59)
FMTP	: Fibromyalgia Tender point (8.80 ±6.41)	SFRE	: Short From Role Emotional (58.21±46.91)
HAQ	: Health assessment Questionnaire (0.56±0.54)	SFSF	: Short From Role Function (72.46±27.06)
SF-36	: Short From -36	SFBP	: Short From Bodily Pain (64.34±28.98)
SFGH	: Short From General Health (38.66±25.97)	SFVT	: Short From Vitality (57.61±20.55)
SFPF	: Short From Physical Function (55.82±23.85)	SFMH	: Short From Mental Health (68.42±20.22)

Discussion

The prevalence of Fibromyalgia (FM) in general population is between 0.75% and 3% [7]. In Bangladesh its' prevalence is 4.4% and 3.3% among rural and urban population respectively [8]. Wide range of prevalence (22–44%) of fibromyalgia has been reported by Handa et al [6]. Coexistence of FM and SLE was reported in 22% and 25% in the studies from North America and Australia. However, a lower percentage was reported from India 8.2% and Spain 10% [13,11]. Some studies were scared in taking healthy control, such as Middleton et al in their study, they examined 24 healthy control subjects to validate measurement of tender points and pain threshold [7]. Da Costa et al Valencia- Flores et al and Akkashipa et al in their separate studies, did not use healthy control subjects rather SLE patents were subgroup into no TP, No Pain (NP) 0-10 TP or regional pain (RP) ≥ 11 TP, FM or FM like, Fibromyalgia Syndrome (FS) or non-FS group, etc [3,11,12,14]. However, in this series, we enrolled healthy control subjects. Further subgroups were made into 0-10 TP and ≥ 11 FMTP for both SLE patients and control subjects.

Among 173 SLE patients Akkashipa et al observed the mean age was of 40.8±12.9 years in their series [3]. One hundred nineteen male and female SLE patients were evaluated by Gladman et al [18]. They sub grouped the study population into FM and without FM and observed mean ages 35.25 vs 29.5 years respectively. Morand et al studied 87 male and female SLE patients and observed mean age of 47.2±13.9 years (FS) and 41.7±15.3 years (Non-FS) respectively [13].

In our series, age and sex matched control were enrolled. The age range was 16-55 years. The mean age was 26.82 ± 8.02 and 29.6710.86 years respectively of SLE and control population. Moreover, the mean ages of both patients and control subjects were observed lower in comparison to the others. This observation could be due to lesser number of aged patients attended in the SLE clinic. As prevalence study of rheumatologic diseases in Bangladesh observed the mean age 32.815.6, 30.712.4 and 32.3 14.6 years in rural, urban and urban affluent respectuvely [8]. It could also be the reflection of both the SLE disease and fibromyalgia that might occur in early part of life.

Education levels were described differently in different studies. Akkashipa et al in their series, leveled education as college or high school, less then high school [3]. In these subgroups, college or higher, high school, less than high school were 55.5%, 33.5% and 11% respectively. In our SLE series, we leveled education as class I-V (15%) VI-X (48%) and > class X (37%).

Household income was significantly higher for FM group compared to SLE group observed in the study of Da Costa et al [14]. In this study family income classes were observed similar in both SLE and control groups.

Occupation distributions in our series were house-maker, service and student with frequency of 63, 10 and 27% in SLE patients. In control, these occupations were 34, 24 and 42% respectively.

Frequency of musculoskeletal and mucocutaneous features were observed more than 92% (n=148 SLE) by Handa et al in their series [6]. Arthritis was > 70 % (Mean 85%) and higher percentage of antinuclear antibody (98% and 96%) reported by Kumar in their northern and southern Indian study population respectively [10]. Morand et al in their series observed higher frequency in arthralgia / arthritis (71%) [13]. In our series arthritis and antinuclear antibody were observed 86.6% and 91% respectively. Along with this other significant laboratory features namely Immunological disorder, renal disorder, neurological disorder and hematological disorders were 88.1%, 34.3 %, 32.8% and 20.9% respectively.

Valencia- Flores et al used HAQ for the assessment of physical component of health status [11]. Gladman et al and Friedman et al used SF-36 for the measurement of health related quality of life [18,19]. In our study we have used both HAQ and SF-36 as mental state assessment remains incomplete only by using of HAQ. Higher HAQ score (0.7+0.6) was observed by Valencia- Flores et al in their SLE patients with FM group in comparison to SLE with NP group (0.1+0.3) and SLE with RP group (0.4+0.5) [11].

Akkashilpa et al in their series found significant association between HAQ score and number of tender points in SLE subjects [3]. In our study, we observed higher HAQ score (0.56 + 0.54) in SLE group irrespective of FMTP in comparison to

control group. Handa et al reported that lupus patient with FM had higher number of tender points (14.23 ± 1.13) compared to non FM patients (1.56 ± 1.77) [6]. None of the control subjects exhibited any tender points. Their study results were also partially consistent with the result of this study, where SLE group showed tender points (8.80 ± 6.4) and control subjects (3.63 ± 4.9).

Poorer self - reported physical functions as measured by Physical Component Summery (PCS) of the SF- 36, were found to be associated with FM group and FM -like group in the study of Friedman et al [19]. Gladman et al in their series showed reduced functional status and reduced sense of wellbeing in SLE patients with FM compared to patients without FM [18]. Moreover, they found that fibromyalgia, as assed by the tender point count, correlated with all domains of SF -36.

In our series we found correlation of all domains of SF -36 except SFRE in SLE patients irrespective of FMTP. Further, except SFSF reduced functional status and sense of wellbeing were found in SLE patients with FMTP 11 or more. These observations were consistent with other studies.

In this study the sample size was small and dolorimeter was not used. Another important limitation of this study was absence of norm based data to standardize SF-36 score to construct two summary scales named Physical Component Summery (PCS) and Mental Component Summary (MCS) Such data is present in the United State for its general population. If PCS and MCS were scored, the statistical analysis would have been more concise and understandable.

Enrolling healthy control showed better realization of association of FMTPs with health status. Age matching of the study subjects made the data uniform. Sub grouping of SLE patients clearly expressed the association of FMTPs with health status. Use of both the health assessment instruments revealed better reflection of health status including mental health components. Further, utility of SF-36 was become evident.

It may be stated that FMTP were found more in number in those who had poor health status. SLE patients with ≥ 11 FMTP count are likely to have an important negative impact on health status. FMTP count may be empirically helpful in the evaluation of health status. Such information could have important implications for the interpretation of patients symptoms and in the treatment plan in the setting of SLE.

Conclusions and Recommendations

Fibromyalgia tender points are more in number in SLE patients. Health status in SLE patients was poor in those who have higher number of FMTP. This study found significant association of number of FMTP with health status measured by HAQ and SF-36. Health status of SLE patients was more reflective by SF-36 in comparison to HAQ. Disease duration does not have influence on tender points, health status. As FM has worsening impact on health status and it also has masking effect on the treatment outcome of SLE. So during management individualization of patients is recommended. Their FM as well as health status should be addressed separately when needed.

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Disclosure

All the authors declared no competing interest.

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