STRIA GRAVIDARUM;
EVALUATION OF QUALITY OF LIFE AMONG PREGNANT WOMEN WITH STRIA GRAVIDARUM- A CROSS SECTIONAL STUDY.

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ABSTRACT… Striae gravidarum (SG) is a physiological skin change that many pregnant women experience during pregnancy. Striae gravidarum seems to be undesirable to many pregnant women but its impact on women's life is unclear. It is a disfiguring change on the skin of pregnant women presenting atrophic linear scars. They may occur anywhere on the body, though the abdomen, breasts, hips and legs are common. This change has a deep impact on the psychology and quality of life (QoL) of women. The quality of life of pregnant women deteriorates with distressing body image, causing psychological problems. The aim of this study is to evaluate the impact of striae gravidarum on the dermatology-specific quality of life (QOL) of pregnant women. **Objectives:** To evaluate the impact of Stria gravidarum on the dermatology - specific qualoty of life (QOL) among pregnant women. **Method:** A multi-disciplinary cross-sectional study was conducted among the pregnant women attending the outpatient department at Dow university hospital for antenatal visits in third trimester. Striae gravidarum was assessed by using Dave's score. After taking informed consent, Skindex 16 dermatology specific QOL questionnaire was used to evaluate the QOL. Data was analyzed by using SPSS version -16. Using Mann Whitney level of significance <0.05. **Study Design:** A cross sectional study. **Duration of Study:** January 2016 till January 2017. **Place of Study:** Department of Dermatology and department of Gynecology, Dow University Hospital, Dow International Medical College (Ojha Campus), DUHS, Karachi. **Result:** Among 112 pregnant women striae gravidarum was present in 32(28.6%) in primigravida, and 80(71.4%) in multigravida. Severity of striae gravidarum was assessed by using Davey's score. Pregnant women with severe striae gravidarum showed significantly higher scores on emotion of Skindex-16 compared with those with absent or mild striae gravidarum. **Conclusion:** It is concluded that due to Striae gravidarum, pregnant females worry more with greater concern regarding their appearance. Their interaction with others was found to be highly affected due to this disfiguring physical change. The symptoms, emotional well-being and functionality differed significantly when the women with mild SG were compared with those with severe SG, though no difference was observed when primiparae subjects were compared with multipara subjects. The occurrence and severity of striae gravidarum influenced their dermatology-specific QOL and it is important to prevent or reduce the severity of striae gravidarum.

Key words: Stria Gravidarum, Pregnant Women, Quality of Life (QOL), Skindex, Davey's Score.

INTRODUCTION

Striae gravidarum (SG) is a physical modification observed in 50 to 90 percent of pregnant women presenting atrophic linear scars.[1] Since SG is not accepted as a cosmetic concern, the change severely burdens the quality of life of women, distressing them. They may occur anywhere on the body, though the abdomen, breasts, hips and legs are common. It has been suggested that estrogen, relaxin and adrenonocortical hormones due to their effect on collagenous tissues contribute greatly to the development of SG. A reduction in elastin and fibrillin in the dermis is also termed as a possible factor in the development of SG. Besides, maternal age, body weight, family history, skin structure, birth weight and race are also suggested to be correlated with development of SG.[2] There are lesser preventive

modalities for development of SG and reducing its gravity, making it difficult to cope up with the emotional and psychological burden it brings along.[3] It has been reported in a study that both genetic and physical factors are involved in the development of SG.[4]

Choi and colleagues have reported that 55.9% of the primiparous women showed signs of SG in the second trimester while 63.1% of the multiparous women developed SG in the third trimester, with significant difference in the time of SG appearance between the two groups.[5] Latha and Haritha have reported in 2017 that the occurrence of striae was widely observed in the multigravida (79%) as compared to the primigravida (65%).[6] It was observed by Katta and colleagues that striae occured in 99.1% of multipara women on abdomen where as they were observed in 89.2% of primies.[7] The primiparous females were seen to be psychologically distressed over the beauty concerns resulting from SG and their quality of life.[8]

The Davey's scoring tool was used in a Japanese study to assess the gravity of SG and the Skindex 29 tool was used to assess the Dermatology specific Quality of Life (QoL). It was found that SG was 37.8% prevalent out of which 91.6 % primiparae and 61.6 % multiparae made attempts to prevent SG. The pregnant females with SG showed a lower QoL for emotion when compared to those without SG. With or without SG, women who took preventive measures against SG showed similar QoL scores for emotion.[9]

In light of the findings of previous studies it is of significance that such an investigation be conducted to correlate the emotional well being of women and their quality of life with SG, a psychologically disturbing change on the skin of pregnant women. This could direct attention of maternity caregivers to proper management of SG to improve the quality of life of pregnant women.

MATERIAL AND METHOD
This cross-sectional study was conducted among the pregnant women attending the outpatient department of dermatology and Gynaecology at Dow University Hospital OJha campus from January 2016 till January 2017 for a period of one year. A total 112 pregnant women were interviewed came for antenatal visit in third trimester having Stria gravidarum. Pregnant women with no stria gravidarum were excluded. After taking an informed consent, their demographic characteristics including Age, parity, residence, occupation, education and ethnicity were recorded. Pregnant women were examined for abdominal stria gravidarum and scored using Davey's[10] scoring method of severity. Abdomen was divided in four quadrants each was examined for stria. If no striae score:0, if few striae score :1 and if many striae score :2. Then all of four quadrant scores will be summed up. Finally the Score 1-2 marked as mild and scores 3-8 as severe. Skindex 16 dermatology specific QOL (Quality of life) questionnaire was used by researcher to evaluate the QOL among pregnant women after getting official permission to use QOL Questionnaire by Mapi Research [11] Trust France. To determine skin quality of life Skindex -16 was used having 16 questions/items. Each item was marked with 7 - point likert-type scale with scores range from 0(no effect) to 100(effect experienced all the time). These items are divided in to three domains… Emotions (item 5-11), Symptoms (item 1-4), Functioning (item 12-16). Higher the score= higher impact of skin disease.

Data was analyzed by using SPSS version -16. Using Mann Whitney level of significance <0.05.

RESULTS
The baseline characteristics of the 112 pregnant participants, consisting of 80 as multiparous women and 32 presented as primiparous were analyzed, as summarized in Table-I. Subject's mean age was 27.94 ± 5.14, body mass index (BMI) was 26.59 ± 4.09, and mean gestational age (in weeks) 32.87 ± 6.07.

The mean and standard deviation of quality of life regarding skin condition of striae gravidum were determined through use of questionnaire Skindex-16, consisting of 16 items, which

evaluated three domains including symptoms, emotions, and functioning. The possible mean scores of each subscale in each of the three domains in Skindex-16 ranged from 0 (no effect) to 100 (effect experienced all the time). Under the domain of symptoms, itching received highest mean score of 41.20 ± 24.50. Under the subscale of emotions of Skindex-16, appearance and worry had mean score and standard deviation of 54.24 ± 29.22 and 53.68 ± 28.57, respectively (Table-II). Under the domain of functioning, subscale evaluating affect of interactions with others had mean of 35.12 ± 27.35.

All participants in this study presented with either mild or severely classified form of striae gravidarum. The severity of striae gravidarum was divided into three categories, 0 (absent), 1 to 2 (mild), and 3 to 8 (severe), as assessed through Davey's score. Mann-Whitney test showed there was a significant difference between Davey's score of mild and severe striae gravidarum and domains of Skindex-16 ($p<0.001$) (Table-III). Also, Mann-Whitney test showed no significant difference between the Skindex-16 domains with primiparae and multiparae women ($p>0.5$) (Table-IV). There was a significant difference among primiparae and multiparae women and Davey's scoring for striae gravidarum ($p<0.05$) (Table-V).

Variables		N (%)	Mean $\pm$ SD
Age(years)			27.94 ± 5.14
	18-23	19 (17.0)	
	24-29	53 (47.3)	
	30-35	32 (28.6)	
	36-42	8 (7.1)	
Residence			
	Urban	89 (79.5)	
	Rural	23 (20.5)	
Education			
	Uneducated	15 (13.4)	
	Matriculation	28 (25.0)	
	Intermediate	17 (15.2)	
	Graduate	43 (38.4)	
	Post graduate	9 (8.0)	
Ethnicity			
	Urdu	44 (39.3)	
	Sindhi	21 (18.8)	
	Punjabi	15 (13.4)	
	Pathan	13 (11.6)	
	Balochi	12 (10.7)	
	Others*	7 (6.3)	
Occupation			
	Working	34 (30.4)	
	House wife	78 (69.6)	
BMI			26.59 ± 4.09
	Normal	39 (34.8)	
	Overweight	49 (43.8)	
	Obese	24 (21.4)	
Parity			2.19 ± 1.26
	Primiparae	32 (28.6)	
	Multiparae	80 (71.4)	
Gestational age (weeks)			32.87 ± 6.07
	<37 weeks- Preterm	98 (87.5)	
	37-38 - Early term	8 (7.1)	
	>39 weeks - Full term	6 (5.4)	
Table-I. Baseline characteristics of enrolled patients (n=112)			

Skindex-16 Domain*	Mean Score
	Mean ± SD
Symptoms	
Itching	41.20 ± 24.50
Burning or Stinging	22.67 ± 22.72
Hurting	21.19 ± 22.30
Being irritated	36.46 ± 26.81
Emotions	
Persistence	44.02 ± 28.68
Worry	53.68 ± 28.57
Appearance	54.24 ± 29.22
Frustration	37.05 ± 29.05
Embarrassment	36.16 ± 31.77
Being annoyed	36.31 ± 28.40
Feeling depressed	30.38 ± 27.37
Functioning	
Affecting interactions with others	35.12 ± 27.35
Desire to be with people	33.05 ± 27.42
Show Affection	31.50 ± 28.09
Daily activities	31.71 ± 26.03
Work or do what you enjoy	33.49 ± 25.79

Table-II. Skindex-16 domain analysis
*Subscales are domains within the Skindex-16 relating to skin condition; each numbered item queries the effect of skin condition on specified term, and possible mean scores range from 0 to 100.

Skindex-16	Davey's Score*			
	Total	Mild	Severe	
	Mean± SD	Mean± SD	Mean± SD	p-value**
Emotion	41.66± 23.04	32.59 ± 20.33	48.46 ± 22.75	<0.001
Symptoms	30.38± 19.62	22.82 ± 12.92	36.05 ± 21.85	<0.001
Functioning	32.99± 23.82	23.10 ± 19.17	40.41 ± 24.39	<0.001

Table-III. Skindex-16 scores of pregnant women with striae gravidum by Davey's scoring
* Mild: 1-2; Severe: 3-8   ** Mann-Whitney.: level of significance <0.05

Skindex-16	Parity*			p-value**
	Total	Primiparae	Multiparae	
	Mean± SD	Mean± SD	Mean± SD	
Emotion	41.66± 23.04	41.64 ± 23.07	41.67 ± 23.18	0.996
Symptoms	30.38± 19.62	29.82 ± 17.94	30.60 ± 17.94	0.851
Functioning	32.99± 23.82	35.49 ± 25.87	32.00 ± 23.05	0.487

Table-IV. Skindex-16 Scores in women with primiparae and multiparae striae gravidarum
*Primiparae: 1 child; Multiparae: birth of more than 1 child   **Mann-Whitney.: level of significance <0.05

Parity		Davey's Score		
		Mild (1-2)	Severe (3-8)	
	N	N (%)	N (%)	p-value*
Primiparae	32	15 (46.9)	17 (53.1)	0.036
Multiparae	80	33 (41.2)	47 (58.8)	

Table-V. Primiparae and multiparae relationship with striae gravidarum using Davey's score
*Mann-Whitney.: level of significance <0.05

DISCUSSION

In this study 112 pregnant women with stria gravidarum were evaluated for quality of life in each subgroup of severity. Among them 80(71.4%) were mulitiparae in which 47(58.8%) having severe stria and 32(28.6%) were primigravida among them 17(53.1%) having severe stria. In relating the QOL domains impact on emotion with mean score of 48.46±22.75, Symptoms with mean score 36.05±21.85 and Functioning with mean score of 40.41±24.39 seen in severe Stria group with p value of <0.001.

In first trail to evaluate QOL among pregnant women with stria gravidarum conducted by Kotomi Yamaguchi[12] in Japan in 2012 concluded prevalence of stria gravidarum in 39.1% among them 51.8% were multipara. In this Study the pregnant women with severe stria showed significantly higher scores on emotion and functioning on skindex-29(p-value <0.001 and <0.005) as compared to absent or mild stria.

Another study conducted Cakir Gungor AN et al[13] in 2014 concluded that 53(75.7%) had severe stria gravidarum in pregnancy.

Masoumeh Kordi[8] et all in their study conducted at Mashad University Iran in 2016 concluded that significant difference between mean of Skindex-29 and its dimensions (p-value <0.001), general life quality (p-value <0.001).

In another study conducted in Iran in 2017 by Farideh Kazemi[14] emphasized the disorders affecting the quality of life during pregnancy: found stria gravidarum being experienced by many of pregnant women leading to feeling of dissatisfaction.

CONCLUSION

It can be concluded that due to SG pregnant females worry more with greater concern regarding their appearance. Their interaction with others was found to be highly affected due to this disfiguring physical change. The symptoms, emotional well being and functionality differed significantly when the women with mild SG were compared with those with severe SG, though no difference was observed when primiparae subjects were compared with mutiparae subjects. **Copyright© 25 Sep, 2018.**

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GROWING OLD IS **MANDATORY,**
BUT GROWING UP IS **OPTIONAL.**

"Walt Disney"

AUTHORSHIP AND CONTRIBUTION DECLARATION
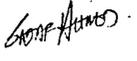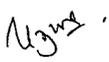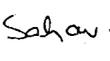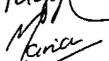
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