



Prevalence of Perceived Stress and Obesity among Women Before and After Menopause

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Abstract

Background: Menopause is one of the critical periods of a women's life during which weight gain and onset or worsening of obesity are favored. At this period the prevalence of obesity is the highest.

Aim: The present study aims to find out the effect of menopause on perceived stress and obesity among women.

Material and Methods: A total of 45 female subjects constituting premenopausal women between the age group of 18–44 years and post-menopausal women between the age group of 45–60 years was included as sample. Participants were categorized into overweight/obese groups based on the body mass index overweight/obese group, $BMI \geq 25$ in each group. The Perceived Stress Scale (PSS) the major tool was used for measuring the perception of stress. Chi Square Test was used for comparing the stress and obesity of women before and after menopause.

Results: Percentage of women with stress (88.8%) is much greater after menopause compared to those without stress. But the percentage of women with stress before menopause is more or less equal to those without stress. Further, menopause has significant effect on perceived stress ($\chi^2 = 6.67, p < 0.01$) among women but has no effect on obesity of women ($\chi^2 = 1.57, p < 0.05$)

Conclusion: Healthy lifestyles has to be recommended to prevent postmenopausal stress

INTRODUCTION

Prevalence of obesity is on the rise among adults especially the women worldwide in both developed and developing countries.^[1] Menopause has been considered a major transition point in women's reproductive and emotional life. Post-menopause refers to a woman's time of life after menopause has occurred. During middle age in addition to physical and social changes some psychological changes also occur which may affect their overall well-being and positive mental

health. As women bear various responsibilities one, at workplace and other in the family therefore, excess work, less freedom, high need for motivation and work-family environment may become powerful source of stress among these women. Therefore, emotional balance, adjustment process, tolerance level and other personality attributes are under great threat, which affect negatively the mental health.^[2] Activity of the HPA axis increases with aging, and these alterations are more pronounced in women. Thus,

the aging female brain is exposed to elevated levels of cortisol.^[3]

Health disparities continue to rise in premenopausal and postmenopausal women in the modern era. Woman's weight gain and increase in adiposity occurs through a number of mechanisms, including lowered physical activity and resting metabolic rate^[4,5,6]. High stress and anxiety levels have been reported to potentially worsen the somatic symptoms of menopause^[7,8]. Relatively few studies have evaluated relationships between stress and obesity in between the premenopausal and postmenopausal women.^[9] Abdominal obesity has been linked to significant metabolic abnormalities.^[10] The objective of present study was to study the prevalence of perceived stress and obesity among women before and after menopause.

MATERIALS AND METHODS

The present study includes a total of 45 female subjects between the age group of 18–60 years were included. The participants were divided into premenopausal and postmenopausal groups. Further, based on the body mass index they were categorized into overweight and obese groups in accordance with World Health Organization

Criteria. The participants were students and the residents in and around Mangalore. During orientation each subject were explained the purpose, procedures and confidentiality prior to get their written informed consent. The Cohen's perceived stress scale was used to assess the stress in women in two groups^[11].

Statistical Analysis

The data collected were compiled and categorized and statistically analyzed. Chi Square Test was used for comparing the stress and obesity of women before and after menopause.

RESULTS

Among the total subjects included in this study, 86.67% were having BMI > 25 and 13.33% were having BMI > 30 (Figure 1). The percentage of women with stress after menopause is more in number. Percentage of women with stress before menopause is more or less equal to those without stress (Table-1). Further, there was a significant difference $P < 0.01$ level between the women before and after menopause. The percentage of women with stress (88.8%) is much greater after menopause (Table.2).

Fig1: Percentage distribution of premenopausal and post-menopausal women

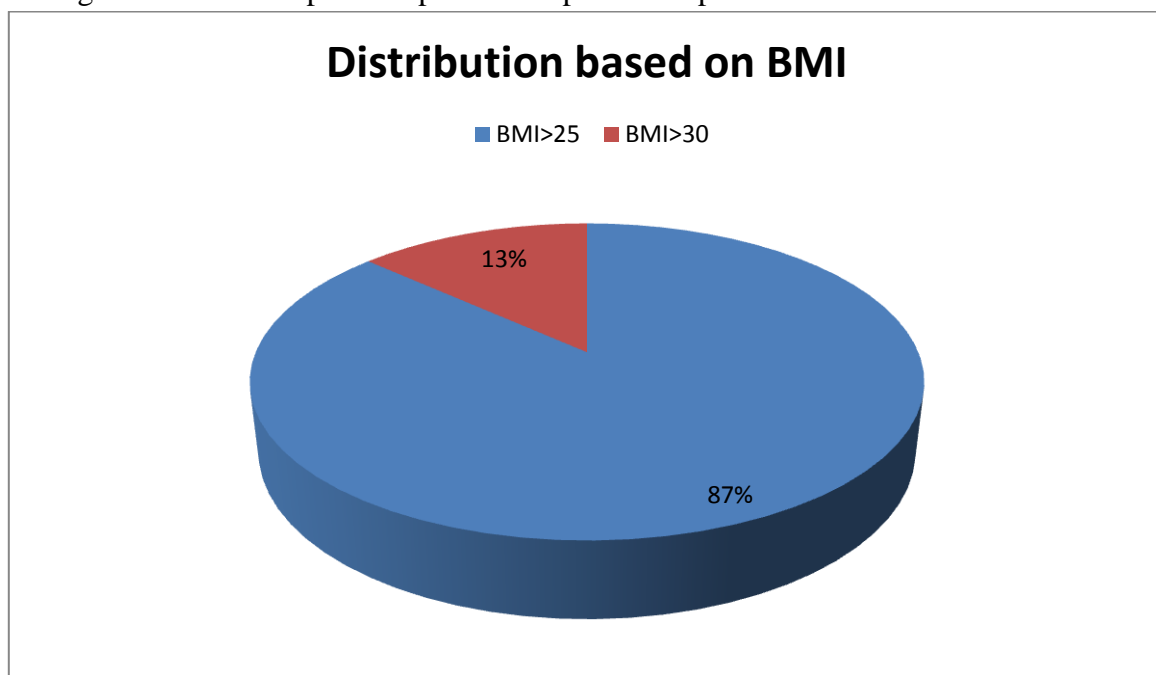


Table: 1-Number of women with and without Perceived stress before and after menopause

Group of women	No. of women		Total
	With stress	Without stress	
Before menopause	16(59.25%)	11(40.74%)	27
After menopause	5(27.77%)	13(72.22%)	18
Total	21	24	45

Table 2: Comparison of the stress of women before and after menopause

Group of women	No. of women		Chi-Square Value	Result
	With stress	Without stress		
After menopause	14(51.85%)	13(48.15%)	6.67	Significant
Before menopause	16(88.88%)	2(11.22%)		

Table: 3-Number of women with or with out obesity before and after menopause

Group of women	No. of women		Total
	25< BMI	BMI > 30	
Before menopause	22(81.48%)	5(18.52%)	27
After menopause	17(94.44%)	1(5.56%)	18
Total	39	6	45

Table 3 shows the percentage distribution of the subjects based on the body mass index in premenopausal or postmenopausal groups. 81.48% of the total subjects were in the 25< BMI and 18.52% of the subjects were having their BMI less than 30 in the premenopausal group. Further

in the pre-menopausal group 94.44% were having the body mass index less than 25 and 5.5% of the subjects had their BMI greater than 30. Prevalence of obesity did not show any significant difference among the women included in the study before and after menopause (table 4)

Table: 4-Comparison of Obesity of women before and after menopause

Groups	No. of women		Total	Chi Square Value	Result
	25< BMI < 30	BMI > 30			
Before menopause	22(81.48%)	5 (18.52%)	27	1.57	Not Significant
After menopause	17(94.44%)	1(5.56%)	18		
Total	39	6	45		

DISCUSSION & CONCLUSION

In the present study the incidence of obesity and overweight was observed. Whereas, our reports did not show significant correlation of the prevalence of overweight and obesity in between the premenopausal and postmenopausal group. Several reports support the prevalence of obesity among the women in both premenopausal and post-menopausal groups. Further, our study showed a positive correlation to the stress and menopause. This might be due to the fact that in the post-menopausal group the estrogen level decreases and this may be a reason for the increase in stress. Based on the present results we suggest that women preferably may require more care due to dual role responsibility. It may become slightly difficult to manage all activities with same efficiency as the age advances. Physical relaxation, emotional support and essential care are needed for healthy living. Certain modifications in life-style and some programmed interventions can provide enhancement of positive healthy habits, reduce stress and can add quality to their life.

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