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Assessment of Influence of Menopause on Quality of Life and Eating Behaviour in Pre, Peri and Post Menopausal School Teachers (41-60 Years) in Urban Bengaluru

P. Esther Caroline[1], A. Sundaravalli[2]

[1]MSc. Student, Food Science and Nutrition, Mount Carmel College, Autonomous, Affiliated to Bengaluru Central University.
[2]Associate Professor and Head, Department of Home Science, Mount Carmel College, Autonomous, Affiliated to Bengaluru Central University.

Corresponding Author: P. Esther Caroline

ABSTRACT

Background: Teaching is being considered as one of the noblest profession since ancient times. Women above the age of 40 years' experience menopausal transition, which is a stage characterized by increased variability in menstrual cycle lengths until permanent amenorrhea occurs. In India there are very few studies and findings on influence of menopausal symptoms in teachers on various aspects. Thus, the study will help to understand the influence of menopause on teachers' eating behaviour and quality of life.
Methods: A cross sectional study was conducted among 180 female teachers aged between 41 – 60 years in the pre, peri and post status of menopause at private aided school in Urban Bengaluru. Data was collected using predesigned questionnaire along with standardized questionnaires such as Menopause Rating Scale, Adult Eating Behaviour and WHO – BREF through purposive random sampling technique. The collected data was analysed using SPSS v 24o for Post Hoc test, ANOVA and a p value of less than 0.01 and 0.05 which was considered to be statistically significant.
Results: The study showed that the average age at menopause was 49 years. Pre, peri and post-menopausal teachers mean BMI was 25.88 + 3.676 and mean Waist Hip Ratio was 0.85 + 0.052 which indicated overweight. Results stated that eating behaviour of all the status of menopause of respondents had a significant ($p<0.01$) impact on quality of life. Premenopausal women had high significance score ($p< 0.01$) which indicated that they had better quality of life compared to the other two status of menopause. The menopause rating scale does not impact the eating behaviour ($p> 0.05$). There was a significant difference ($p<0.01$) observed in the impact of Menopause symptoms on the Quality of Life.
Conclusion: The study concludes that respondents with varying status of menopause had association with menopause symptoms and quality of life but insignificant association with eating behaviour.

Key words: Menopause, Menopause Rating Scale, Adult Eating Behaviour and Quality of Life.

INTRODUCTION

Women are important to our society. Women today are eager to take up professions and work. There is a global trend of increasing numbers of middle aged women in the workforce. Teaching and Medicine are considered as noble professions: teaching fosters citizenship in students and also moulds the future of children. However, studies have found that teaching is one of the most stressful occupations in the world. Mental, organizational, physical and cognitive

disturbances are aspects involved in an individual's life. [1]

The working hours of teachers are similar to those in other professions though it is averaged for the whole year. Among women teachers having mental strain due to high workloads which deteriorates with age. Higher stress levels and poorer work-life balance is observed because they work hard over a few weeks. Hence, it has led to poor wellbeing due to high levels of stress and very poor physical health. To maintain overall health, nutrition is an essential aspect to keep oneself fit and improves their productivity.

With the aging of the worldwide population in the coming decades, As per WHO it is estimated that 1.2 billion women worldwide will be menopausal or postmenopausal by the year 2030. Also, WHO states that menopause in a woman's life is the last menstrual period which is followed by complete cessation of menstrual flows. a period of dynamic changes in reproductive and non-reproductive changes is termed as Menopausal transition. With an increase in life expectancy, it was found that more than 20 million women reached menopause worldwide in 1990 and it would increase in double in 2020 and the years to come and thus impacting the quality of life. (WHO). Few common menopausal symptoms include vasomotor symptoms (VMS, defined as hot flushes and/or night sweats), sleep disturbances, and vaginal dryness. 85 % of postmenopausal women have been estimated to experience a menopause-related symptom in their lifetime.

Factors within work structure such as socio-demographic factors, sedentary lifestyle, workload, and biological aging are associated with a relationship between the workability and health of workers. With technology coming in, the eating habits of the people are changing which can negatively impact health. Lifestyle and nutritional status together interplay and influence health and wellbeing of an individual. Skipping of meal is a lifestyle is common among teachers which results in nutrient deficiency and this behaviour can promote dependency on junk or processed foods.

Women have symptoms during menopause that affect their daily activities as well their quality of life. (WHO) Menopause is a natural aging process accompanied with various co-morbidities like cardiovascular diseases, diabetes, blood pressure, etc along with menopausal symptoms. Hence it is important to pay attention to the eating behaviour and quality of life of women in teaching profession.

This study aims at new age effects of influence of menopause on teachers' eating behaviour and quality of life. In India there are very few studies and findings on influence of menopausal symptoms in teachers on various aspects. Thus, the study will help to understand the influence of menopause on teachers' eating behaviour and quality of life.

MATERIALS AND METHODS

A cross sectional study was conducted among 180 female teachers aged between 41-60 years in the pre, peri and post status of menopause at private aided school in Urban Bengaluru. Data was collected using predesigned questionnaire which included general information, reproductive history and anthropometric measurements such as height, weight and waist hip ratio along with standardized questionnaires such as Menopause Rating Scale, Adult eating Behaviour questionnaire and WHO – BREF questionnaire through purposive random sampling technique. The collected data was analysed using Post Hoc test, ANOVA and a p-value of less than 0.01 and 0.05 which was considered to be statistically significant.

Menopause Rating Scale (MRS) was used to assess the prevalence of the menopausal symptoms and their severity among the subjects. Then the score of each of the three dimensions (subscales) was calculated based on adding up the scores of the items (symptoms) of the respective

dimensions. The three dimensions or subscales being psychological subscale, somatic-vegetative subscale and urogenital subscale. [2]

Adult eating behaviour questionnaire (AEBQ) developed by Hunot. This is a self – reported questionnaire which comprises of 35 items which measures 8 appetite traits, they are Hunger (H), Food responsiveness (FR), Emotional Overeating (EOE), Enjoyment of Food (EF), Satiety Responsiveness (SR), Emotional Under-Eating (EUE), Food Fussiness (FF) and Slowness of Eating (SE). The factors were internally valid and good reliability (all Cronbach alphas >7). This questionnaire has four 'food approach' and four 'food avoidant' traits, are both internally and externally reliable. [3]

The WHOQOL Group developed the WHOQOL-100 quality of life assessment with fifteen international field centres so that it would be applicable cross-culturally. This tool facilitates a detailed assessment of each individual facet relating to quality of life. [4]

WHOQOL-100 contains 4 domains they are physical health, psychological health, social relationships and environment. There are also two items that are examined separately: question 1 asks about an individual's overall perception of quality of life and question 2 asks about an individual's overall perception of their health. The four domain scores denote an individual's perception of quality of life in each particular domain. The data thus obtained was analysed using ANOVA, Post Hoc test.

RESULTS

The mean average age at menopause was 49 years. A majority (30%) of the respondents were aged between 46-50 years, 27% were aged between 51-55 years, 22% were between 41 – 45 years of age and 21% were in the age of 56-60 years. So, the fig.1 indicates the representation of the respondents belonging to the age group division ranges between 21% – 30%

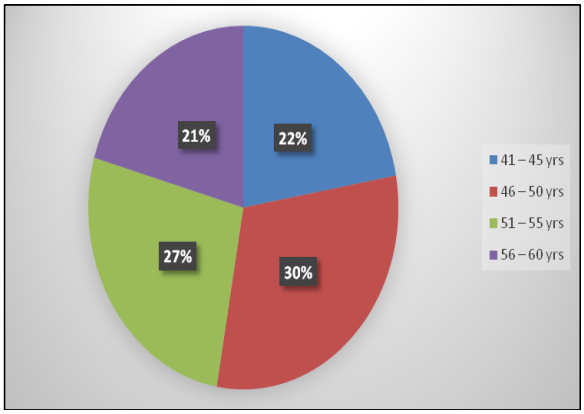

Fig 1: Age of respondents

Table 1: Anthropometric measurements of the respondents

Variables	Mean	Std. Deviation
Height (cm/ft inches)	158.37	6.02
Weight (Kg)	64.93	10.00
BMI (Kg/m^2)	25.89	3.66
Waist circumference	87.38	9.03
Hip circumference	102.02	10.19
Waist - Hip Ratio	0.85	0.05

From the above table (1) it was evident that the mean height of the study subjects was 158.37 + 6.02cm. The mean weight was found to be 64.930 + 10.00cm, mean Body Mass Index was 25.89 + 3.66 indicating that the respondents were overweight and mean Waist Hip Ratio was 0.85 + 0.05 indicating that the respondents were obese.

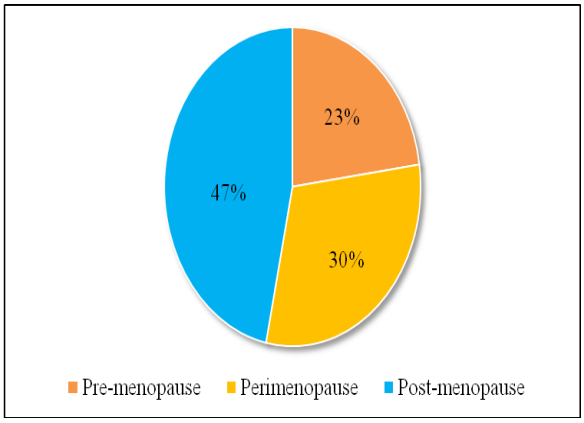

Fig: 2 Status of menopause

Figure 2 represents the status of menopause of the respondents. The majority (47%) of the respondents were in the post-menopausal stage, followed by perimenopausal women with (30 %) and the lower percentage (23%) in premenopausal women.

Table 2: Status of menopause and Adult Eating Behaviour

Status of Menopause	N	Mean	Std. Deviation	Sig.
Pre-menopause	41	3.37	0.38	
Perimenopause	55	3.32	0.26	0.576^{NS}
Post-menopause	84	3.37	0.30	
Total	180	3.36	0.31	

NS- NOT SIGNIFICANT *SIGNIFICANT AT 5% LEVEL

Table (2) shows the difference in the status of menopause within the Adult Eating Behaviour of the respondents. The mean values of the various stages of menopause are as follows: pre-menopause 3.37 + 0.38, Perimenopause 3.32 + 0.26 and Post-menopause 3.37 + 0.30. There was no significant difference (p>0.05) observed between the eating behaviour and status of menopause.

Table 3: Status of Menopause and Quality of Life

Status of Menopause	N	Mean	Std. Deviation	Sig.
Pre-menopause	41	4.05	0.60	
Perimenopause	55	3.88	0.44	0.003**
Post-menopause	84	3.72	0.47	
Total	180	3.84	0.51	

NS- NOT SIGNIFICANT **SIGNIFICANT AT 1% LEVEL

The quality of life differences in various stages of menopause of the respondents is displayed in the above Table (3). The mean values for pre-menopause, perimenopause and post-menopause are as follows: 4.05 + 0.60, 3.88 + 0.44 and 3.72 + 0.47. There was a significant difference (p<0.01) observed that the respondents in pre-menopause status had a better quality of life.

Table 4: Impact of Adult Eating Behaviour on Quality of Life

	Mean	Std. Deviation	Sig. F Change
Quality of Life	3.84	0.51	
Enjoyment of food	3.60	0.55	
Food fussiness	3.25	0.60	
Emotional over-eating	3.56	0.75	
Hunger	3.19	0.60	
Satiety responsiveness	3.32	0.48	0.000**
Food responsiveness	3.52	0.60	
Emotional under-eating	3.12	0.55	
Slowness in eating	3.28	0.73	

NS- NOT SIGNIFICANT **SIGNIFICANT AT 1% LEVEL

Table (4) depicted the impact of Adult Eating Behaviour has a significant impact on Quality of Life. It was observed that quality of life had a mean value of 3.84 + 0.51 which inferred that the respondents were satisfied with their quality of life and two domains of eating behaviour had a mean score of 3.60 + 0.55, 3.56 + 0.75 i.e. Enjoyment of food and Emotional over-eating. The other domains of the eating behaviour had a neutral response which neither agrees nor disagree. It was found that Adult Eating Behaviour had a significant (p< 0.01) impact on Quality of Life.

Table 5: Influence of Menopause symptoms on the Adult Eating Behavior

	Mean	Std. Deviation	Sig. F Change
Adult Eating Behaviour	3.36	0.31	
Somatic symptoms	4.28	0.60	
Psychological symptoms	4.29	0.69	0.955^{NS}
Urogenital symptoms	4.68	0.49	

NS- NOT SIGNIFICANT *SIGNIFICANT AT 5% LEVEL

Table (5) shows the impact of Menopause symptoms on the Adult Eating Behaviour of the respondents. A neutral response was obtained from the Adult Eating Behaviour with mean value 3.36 + 0.31. Severe somatic symptoms were observed in the respondents which had a mean value of 4.28 + 0.60. A mean value of 4.29+ 0.69 which indicates severe psychological symptoms and mean value 4.68 + 0.49 was observed in very severe urogenital symptoms. There was no significant correlation (p> 0.05) was observed in the impact of Menopause symptoms on the Adult Eating Behaviour.

Table 6: Impact of Menopause Rating Scale(MRS) on the Quality of Life

	Mean	Std. Deviation	Sig. F Change
Quality of Life	3.84	0.51	
Somatic symptoms	4.28	0.60	
Psychological symptoms	4.29	0.69	0.005**
Urogenital symptoms	4.68	0.49	

NS- NOT SIGNIFICANT **SIGNIFICANT AT 1% LEVEL

Table (6) depicts the impact of Menopause symptoms on the Quality of Life of the respondents. Quality of life had a mean value of 3.84 + 0.51 indicating satisfaction with the quality of life. Respondents experienced moderate levels of somatic and psychological symptoms with mean values of 4.28 + 0.60 and 4.29 + 0.69. Severe urogenital symptoms were observed in respondents with a mean value of 4.68 + 0.49. There was a significant

difference (p<0.01) observed in the impact of Menopause symptoms on the Quality of Life.

DISCUSSION

The average mean age of respondents was found to be 49 + 10. It was found that 30.6% of the respondents were aged between 46-50 years, 26.7% were aged between 51-55 years, 22.2% were in 41 – 45 years of age and 20.6% were in the age of 56-60 years. A study was done by Ahuja Maninder, (2016) observed that women in western countries average age at menopause was 51 years but in India, it was found to be 46.2 years which correlates with the present study. [1]

It was evident that the mean height of the study subjects was 158.37 + 6.02cm. The mean weight was found to be 64.93 + 10.00cm, mean Body Mass Index was 25.89 + 3.66 indicating that the respondents were overweight and mean Waist Hip Ratio was 0.85 + 0.05 indicating that the respondents were obese. On the contrary Gilbert F *et al.,* (2015) evaluated health awareness among teachers and non-teachers by considering the demographic and socio-economic factors. It concluded that overweight or obese teachers were very rare. [2]

The mean values of the various stages of menopause are as follows: pre-menopause 3.37 + 0.38, Peri menopause 3.32 + 0.26 and Post-menopause 3.37 +0.30. there was no significant difference (p>0.05) observed between the eating behaviour and status of menopause. Tursunović S. *et al.,* (2014) explained that the respondents' food habits showed that they had insufficient knowledge of nutritional needs and recommendations, which in turn was resulting in the consumption of food that is not adapted to this period of life. [7]

The mean values for pre-menopause, perimenopause and post-menopause are as follows: 4.05 + 0.60, 3.88 + 0.44 and 3.72 + 0.47. There was a significant difference (p<0.01) observed that the respondents in pre-menopause status had a better quality of life. Ozkan *et al.,* (2005) found that there was no significant relation seen while comparing the quality of physical life, psychological, social relationships and environment scores in pre and postmenopausal women (p>0.05). [8] A similar study was done by Moilanen *et al.,* (2012) illustrated that increased physical activity was observed in Peri- and postmenopausal women (28% and 27%) during the eight-year follow-up period when compared to premenopausal (18%) women (p = 0.070). change of QoL had no correlation with menopausal status. [9]

It was found that Adult Eating Behaviour had a significant (p< 0.01) impact on Quality of Life. The study stated that postmenopausal had a higher attitude of self-regulation compared to premenopausal women (P = 0.05), Among body composition, eating behaviours and quality of life no between-group differences were observed at the baseline. [8] It was noticed that only food responsiveness had significance difference (p<0.05) with quality of life. Adults with higher BMI scored higher for Food responsiveness. [3]

There was no significant correlation (p> 0.05) was observed in the impact of Menopause symptoms on the Adult Eating Behaviour. Soleimani *et al.,* (2019) examined that vegetables fruits is inversely associated with general (β = −1.37; SE = 1.08; P for trend <0.001), physical (β = −1.54; SE = 1.09; P for trend <0.001), and mental (β = −1.58; SE = 1.11; P for trend <0.001) symptoms. [11]

There was a significant difference (p<0.01) observed in the impact of Menopause symptoms on the Quality of Life. Sharma S. & Mahajan N. (2015) [12] observed that there was a significant correlation between the MRS total scores of the urban (14.67 ± 6.64) and rural (16.08 ± 7.65) group. Rural women had high somatic, psychological, and urogenital symptoms when compared to urban women, but the results of the urogenital subscale were not significant. Urban women had more scores of physical health,

psychological, social relationships, and environmental domains in comparison to rural women. Results obtained were not significant for physical health and the average quality of life was observed in urban society better than in rural women. [10]

Limitation of the study was due to time constraint; secondary data was not obtained for health status as it could give a strong base for quality of life.

CONCLUSION

A clear insight was obtained from the analysis to determine the quality of life, eating behaviour, and also influence of menopause on these factors. It was concluded that within and between the stages of menopause concerning Body Mass Index and Waist Hip Ratio, it was noticed that the majority of the respondents were in the over weight/obese category and they are more prone to be affected by health risks in the future. No significance was observed between the eating behaviour and status of menopause. There was a significant difference observed that the respondents in pre-menopause status had a better quality of life. Significant difference was observed between eating behaviour and quality of life. There was no significant correlation was observed in the impact of Menopause symptoms on the Adult Eating Behaviour. There was a significant difference observed in the impact of Menopause symptoms on the Quality of Life.

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