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Correlation of Waist-Hip Ratio with Signs and Symptoms of Menopausal Women

Singh Jyoti[1], Verma Anisha[2], Neeru Bala[3]
[1]*M.Sc. Food Science and Nutrition, Department of Food Nutrition and Public Health, Ethelind College of Home Science, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, U.P- 211007, India*
[2]*Assistant Professor, Department of Food Nutrition and Public Health, Ethelind College of Home Science, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, U.P- 211007, India*
[3]*Associate Professor, Department of Food Nutrition and Public Health, Ethelind College of Home Science, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, U.P- 211007, India*

Abstract: ***The present study entitled "Correlation of waist- hip ratio with signs and symptoms of menopausal women" aimed to determine the prevalence rate of obesity among the selected menopausal women and to find out the relationship between Waist-Hip Ratio (WHR) and signs and symptoms of the menopausal women was carried out in the three areas Mahewa, Indalpur and Dandi of Prayagraj. A total of one hundred and fifty-five female respondents were randomly selected and classified between three groups pre, peri and post-menopausal groups for the study and were personally interviewed with the help of pre-structured schedule. After observation it was found that out of 155 respondents, 80.64 percent women were having more than 0.85 WHR and 19.35 percent women were having less than 0.85 WHR. A positive correlation was found between WHR and symptoms like heart discomfort, sexual behaviour, bladder problem, dryness of vagina and joint pain while negative correlation found between the symptoms like hot flushes, anxiety, irritability, depression, sleep problems and physical and mental problem. On the basis of result it is concluded that as well as WHR of the women decreases, they have less chance to face symptoms like heart discomfort, sexual problem, bladder problem, dryness of vagina and joint pain while with increasing WHR they have more chance to face symptoms.***

Keywords: WHR, Depression, Menopause, Correlation, Signs and symptoms

I. INTRODUCTION

Obesity is an excess of body fat, resulting in adverse health effects. Obesity has emerged as a major public health problem. The prevalence of obesity is increasing in almost all parts of the world (1). The prevalence of overweight and obesity among population aged 30 years and above was 42 percent and 12 percent globally, respectively (2). Anthropometric indices such as weight, Body Mass Index (BMI), Waist Circumference (WC) and Waist–Hip Ratio (WHR) are considered for obesity evaluation. Body fat distribution is described in two forms of android (apple-shaped) and gynoid (pear-shaped). One-way to assess body fat distribution is measuring WHR. It is believed that WHR above 0.90 for males and above 0.85 for females would indicate central body fat distribution and is considered to be a risk factor for cardiovascular diseases, hypertension, and diabetes. The study conducted by (3), said that women living in rural areas are more prone to premature menopause. It is of great concern that, women are attaining premature menopause. Some women are attaining it as early as 30 years. Early menopause may be a risk factor for earlier mortality from diseases related to decreased estrogen levels and may promote increased incidence of osteoporosis, heart diseases, diabetes and hypertension and breast cancer. Natural menopause occurs between the ages of 45 and 55 years with a mean age of incidence around 51 years worldwide. The mean age of menopause in India is 44.3 years. Therefore, this study was undertaken with the following objectives: to determine the prevalence rate of obesity among the selected menopausal women and to find out the relationship Waist- Hip Ratio (WHR) and sign and symptoms of the menopausal women.

II. MATERIALS AND METHODS

A total of 155 menopausal women aged 40-55 years were purposively selected from Mahewa, Indalpur and Dandi of Prayagraj city for the study and were personally interviewed with the help of pre-structure schedule for the investigation as investigator was well acquainted with the area and people residing there. The data pertaining to the study according to the research problem, Pre-structured questionnaire was used for the collection of data from the respondents. The schedule was included the aspects which lead to the fulfillment of the objectives of the study. After obtaining the informed consent, person's age, sex, waist ratio, hip ratio was recorded (4).

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Selected respondents were classified between three groups pre, peri and post-menopausal groups. The MRS consists of a list of 11 items (symptoms or complaints). The scoring scheme was simple, i.e. the score increases point by point with increasing severity of subjectively perceived symptoms in each of the 11 items. Severity was rated and scored as none (0 points), mild (1 point), moderate (2 points), severe (3 points), and very severe (4 points). The total score possible ranges from 0 to 44. Scores ranging from 0-4, 5-8, 9-15, and 16+ were used to rate the perceived menopausal symptoms as none/minimal, mild, moderate, and sever respectively. The MRS scale was used for scoring menopausal symptoms (5). WHR cut off values was categorized on basis of current recommendation given by WHO expert consultation, Geneva, December 2008 are >80 cm for increased, ≥88 cm for substantially increased and ≥ 0.85 cm for substantially increased. The data was analyzed by using appropriate statistical tool i.e. correlation coefficients (6).

III. RESULTS AND DISCUSSION

The data collected and tabulated under the study are presented with appropriate illustration and discussed in this chapter.

Table 1: Distribution of Respondents According To Their General Information

PARTICULAR		FREQUENCY	PERCENTAGE OF WOMEN
AGE OF WOMEN	40- 50	110	70.97
	51- 55	45	29.03
FAMILY TYPE	Nuclear	113	72.90
	Joint	42	27.09
EDUCATION	Illiterate	65	41.93
	Less than High School	56	36.12
	High School	22	14.19
	Intermediate	12	7.74
OCCUPATION	Housewife	115	74.19
	Skilled worker	21	13.54
	Unskilled worker	19	12.25
INCOME	10000- 20000	82	52.90
	20000- 30000	40	25.81
	30000- 40000	18	11.61
	More than 40000	15	9.67

1) *Age:* The above table 1 shows that 70.96 percent respondents belonged to age group 40-45 years whereas 29.03 percent respondents were belonging to 50-55 years. Menopause marks the beginning of ageing for women. It generally takes place during 45 and 55 years of age, bringing a variety of physiological changes, some of which are the result of cessation of ovarian functions and others are an effect of the ageing process (7).
2) *Family Type:* The above table: 1 show that (72.90 %) respondents were belonging to nuclear type family and (27.09 %) respondents were belonging to joint type family.
3) *Education:* The above table :1 depicts the distribution of subjects based on educational status. Out of 155 respondent's 53.54 percent were Illiterate, 30.32 percent women were educated at less than high school level, 11.61 percent women were educated at high school level, 4.51 percent women were educated at intermediate level. Illiteracy is the greatest barrier in improving the health and nutritional status of women (8).
4) *Occupation:* The above :1 table shows that out of 155 respondents 74.19 percent female were housewife, 12.90 percent women were skilled worker, 10.96 percent women were unskilled worker. (9), which states that "working women have a better menopause- specific quality of life than their non-working counterparts".

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5) *Income of Family:* The table :1shows that 52.90 percent of the respondents had family income between 10000- 20000 Rs, 25.81 percent respondents had family income between 20000- 30000 Rs, 11.61 percent respondents had family income between 30000- 40000 Rs and 9.67 percent had family income above 40000 Rs. In a study conducted by (10), it revealed that rise in household economic condition results in to the betterment of menopause-specific quality of life of postmenopausal women.

Table 2: Distribution Of Respondents According To Their Waist- Hip Ratio

WAIST- HIP RATIO	TOTAL (n = 155)	
	N	(%)
>0.85	125	80.64
<0.85	30	19.35

(WHO STEPS Protocol, 2008)

Table 2 shows that out of total 155 respondents, 80.64 percent were having more than 0.85 WHR and 19.35 percent were having less than 0.85 WHR. significant positive correlation observed between waist circumferences and the BMI, these findings suggest that obesity is prevalent among the menopausal women while the waist circumference was found to be a better measure in assessing obesity and thus CVD risk among menopausal women in Zaria (11).

Table 3: Distribution of Respondents According to Having Symptoms

S. NO	SCALE	NO SYMPTOMS		Respondents having the symptoms									
				MILD		MODERATE		SEVERE		V.SEVERE		TOTAL	
		N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
1	Hot flushes	65	41.9	31	20	30	19.3	27		2	1.2	90	58.6
2	Heart discomfort	138	89.3	14	9.03	3	1.93					17	10.9
3	Sleep problems	117	75.4	28	18.06	10	6.45					38	24.5
4	Depressive mood	89	57.4	58	37.41	7	4.5	1	0.6			66	42.5
5	Irritability	102	65.8	38	24.51	15	9.67					53	34.1
6	Anxiety	104	67.9	44	28.38	7	4.5					51	32.9
7	Physical problem	110	70.9	32	20.64	13	8.38					45	29.3
8	Sexual problem	128	82.5	16	10.32	11	7.09					27	17.4
9	Bladder problem	112	72.2	33	21.29	10	6.45					43	27.7
10	Dryness of vagina	91	58.7	50	32.25	14	9.03					64	41.2
11	Joint pain	57	36.7	65	41.93	23	14.3	10	6.4			98	63.2

Table 3 shows that respondents having symptoms out of 155 respondents, 65.2 percent respondents having no symptoms, 23.9 percent respondents having mild symptoms, 8.38 percent respondents having moderate symptoms, 2.2 percent respondents having severe symptoms and 0.1 percent respondents having very severe symptoms. In India the mean age of the participants were 54.2 ± 7.2 years and mean age of attainment of menopause was 48.4 ± 4.5 years. Mean duration of menopause was found to be 7.5 ± 5.3 years. Commonest symptom reported was joint and muscular discomfort and physical and mental exhaustion seen in 94 (85.4%) participants. The mean number of symptoms reported by participants was 7.6 ± 2.8. Educated women reported significantly more symptoms (F = 2.218, P = 0.047). Somatic and urogenital symptoms were more among perimenopausal women and somatic symptoms were more among postmenopausal women. Fifty-eight (52.7%) participants had one or more severe symptoms. Severe symptoms were most among premenopausal women (12).

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Table 4: Correlation Coefficients of Waist- HIP Ratio (WHR) With Symptoms

Symptoms	N	(%)	>0.85 (n= 125) (r- value)	<0.85 (n= 30) (r- value)
Hot flushes	90	58.6	+0.86	+0.94
Heart problems	17	10.9	-0.41	+0.24
Sleep problems	38	24.5	+0.76	+0.98
Depressive mood	66	42.5	+0.96	+1
Irritability	53	34.1	+0.98	+0.99
Anxiety	51	32.9	+0.32	+0.5
Physical and mental problem	45	29.3	+0.97	+1
Sexual problem	27	17.4	-0.95	+0.69
Bladder problems	43	27.7	-0.88	+0.75
Dryness of vagina	64	41.2	-0.75	+0.67
Joint pain	98	63.2	-0.81	+0.65

Table: 4 Explain the correlation between Waist- Hip Ratio and symptoms. A positive correlation was found between the >0.85 and symptoms like hot flushes heart discomfort, depression, anxiety, sleep problem, physical and mental problem, sexual behavior, bladder problem, dry vagina and joint pain.

Result shows that as well as the WHR of the women increases, they have more chance to face symptoms.

Table :4 Explain the correlation between Waist- Hip Ratio and symptoms. A negative correlation was found between the <0.85 and symptoms like heart discomfort, sexual behaviour, bladder problem, dry vagina and joint pain.

Result shows that as well as WHR of the women decreases, they have less chance to face symptoms.

IV. CONCLUSION

Out of 155 respondents, 80.64 percent women were having more than 0.85 WHR and 19.35 percent women were having less than 0.85 WHR. A positive correlation found between WHR and symptoms like heart discomfort, sexual behaviour, bladder problem, dryness of vagina and joint pain are highly associated while negative correlation found between the symptoms like hot flushes, anxiety, irritability, depression, sleep problems and physical and mental problem. On the basis of findings it is concluded that as well as WHR of the women decreases, they have less chance to face symptoms like heart discomfort, sexual problem, bladder problem, dryness of vagina and joint pain while by increasing WHR they have more chance to face symptoms.

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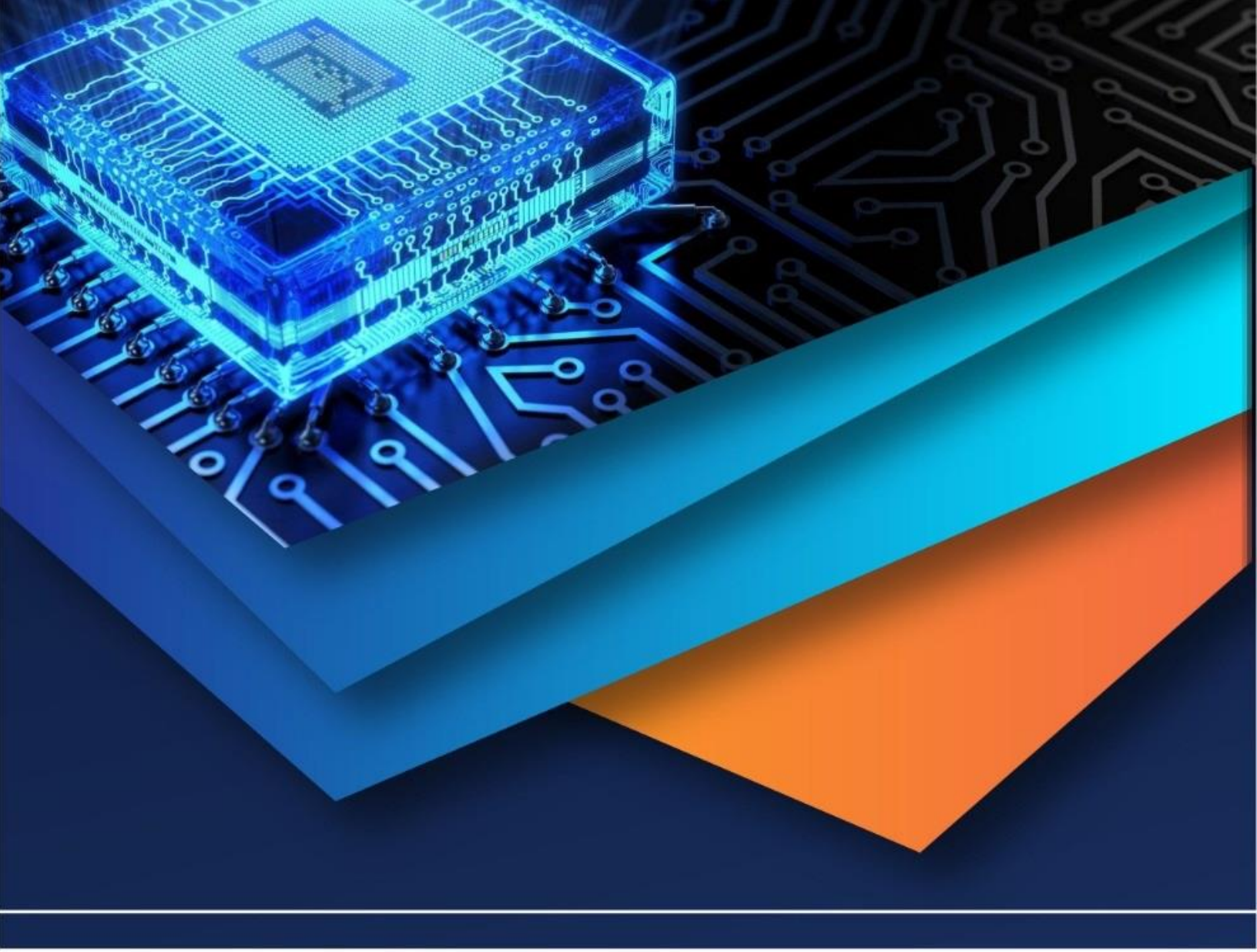
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