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Impact of dietary habits, life style variables on body weight and blood pressure of working women

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Abstract : *Globally, hypertension is the third leading cause of mortality and is a major risk factor for heart disease, stroke, and kidney failure (WHO2013). Lifestyle habits, such as unhealthy dietary habits, and physical inactivity have been shown in studies to be among the risk factors that are linked heart diseases that in part mediated or modulated through effects on blood pressure and body weight (Couch and Daniels, 2005). The present study was taken up with objective of verifying whether there is relationship between blood pressure, body weight, dietary habits, and life style preferences. The study was conducted on sample of 68 working women. The results revealed that a significant relationship between all the variables. Normal body weight, healthy dietary habits and life style were found to influencing factors for maintain of normal blood pressure.*

Key words: *hypertension, risk factor for heart disease, stroke, kidney failure*

Introduction

High blood pressure is a common condition in which the long-term force of the blood against your artery walls is high enough that it may eventually cause health problems, such as heart disease. Blood pressure is determined both by the amount of blood your heart pumps and the amount of resistance to blood flow in your arteries. The more blood your heart pumps and the narrower your arteries, the higher your blood pressure.

Classification of blood pressure for adults

Classification	SBP mmHg	DBP
Normal	<120	<80
Pre hyper tension	120-139	80-89
Stage 1 Hyper tension	140-159	90-99
Stage 2 Hyper tension	>160	>100

The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.

Risk Factors for High Blood Pressure

Being overweight or obese: Obesity causes the more blood flow to supply oxygen and nutrients to tissues. As the volume of blood circulated through blood vessels increases, so does the pressure inside arteries.

Too much salt (sodium) in diet

Too much sodium in diet can cause body to retain fluid, and also causes the

arteries in body to constrict. Both factors increase blood pressure.

Too little potassium in your diet

Potassium helps balance the amount of sodium in cells. Potassium causes the smooth muscle cells in arteries to relax, which lowers blood pressure.

Not being physically active

Exercise increases blood flow through all arteries of the body, which leads to release of natural hormones and cytokines that relax blood vessels, which in turn lowers blood pressure. Lack of physical activity also increases the risk of being overweight.

Stress: High levels of stress can lead to a temporary, but dramatic, increase in blood pressure. Relaxation and meditation techniques effectively lower blood pressure.

Non-steroidal Anti-inflammatory Drugs (NSAIDs)

Ibuprofen (Advil, Motrin, Ibuprofen) can cause marked worsening of existing hypertension or development of new high blood pressure. It can also cause damage to the kidneys, worsening of heart failure, and even heart attack or stroke. Ibuprofen is a member of the class of drugs called NSAIDs, which includes naproxen (Aleve, Naprosyn, and Anaprox), sulindac (Clinoril), diclofenac (Voltaren), piroxicam (Feldene), indomethacin (Indocin), Mobic, Lodine and celecoxib (Celebrex).

Studies on the association between dietary factors and BP have consistently shown that excess sodium and alcohol intake and inadequate intake of potassium increase BP High carbohydrate diet has been shown to increase plasma insulin to an extent which can be associated with increased risk of obesity,cardiovascular disease, diabetes and hypertension (Appel *et al.*, 1997; Rahman *et al.*, 2011). According to Hidayah and Bariah (2011) studies, it was evident that significant relation existed between dieting behavior and Body Mass Index (BMI). Irregularity of meals, such as breakfast skipping, is associated with overweight and obesity in childhood and adolescence (Rampersaud *et al.*, 2005). However, the cause of this association remains unclear (Rodriguez and Moreno, 2006) Physical inactivity is in itself an independent risk factor for cardiovascular disease in adulthood (Sesso *et al.*, 2000; Manson *et al.*, 1999). In addition, high physical activity is associated with reduced blood pressure and lower body weight (Fagard, 2001). The associations between physical activity and blood pressure are not established in adolescence (Kelley *et al.*, 2003; Alpert and Wilmore, 1994). However, sedentary lifestyle, environmental and genetic factors have also been implicated in diet related-non communicable diseases (Sivabalan and Menon, 2008; Ladan *et al.*, 2007).

Materials and Methods: The present study was undertaken in Kakinada. The sample consisted of 68 working women. The BP of all the sample was recorded by trained health worker. Self reporting Questionnaire to study the life style and dietary habits developed by investigator was administered to the sample. Dietary habits were scored, high scores representing healthy habits and low scores unhealthy habits. The life style questionnaire constructed by investigatory which included items on physical activities, Health conditions, Sleeping patterns, meal timings, stress

perceived at home and at work place. The weight of all the selected respondents was measured using weighing machine. The data was scored and statistically analyzed to study the relationship between Blood pressure, weight, dietary habits and life style.

Results and Discussion

Table 1: Distribution of respondents according to their Blood pressure

Classification	Age (30-40yrs) n= 36	40-50yrs n=32	Total
Normal	17 (25%)	10 (14.7%)	27(39.7%)
Pre hyper tension	15 (22%)	16(23.5%)	31 (45.5%)
Stage 1 Hyper tension	4 (5%)	6 (8.8%)	10 (14.8%)
Stage 2 Hyper tension	-	-	

The distribution of respondents according to their blood pressure status was depicted in the table. The majority of women (45%) were at risk of hypertension. It was found that only 39 percent of them having normal Blood pressure. And very less percentage (14%) were in stage 1 hypertension. If age criteria taken in account women in 30-40yrs majority of them having normal blood pressure and 22 percent were at risk. In 40-50yrs age group it was found that majority were at risk of hyper tension. From the study it could be concluded that with increasing age the chances getting of high blood pressure are more. In a research study Pinto, E. (2007) found that Isolated systolic hypertension, an elevation in systolic but not diastolic pressure, is the most prevalent type of hypertension in those aged 50 or over, occurring either de novo or as a development after a long period of systolic-diastolic hypertension with or without treatment. The increase in blood pressure with age is mostly associated with structural changes in the arteries and especially with large artery stiffness.

Table 2 Distribution of respondents according to their weight (kgs)

Classification	Age (30-40yrs) n= 36	40-50yrs n=32	Total
Under weight	5 (7.3%)	-	5 (7.3%)
Normal	13(19%)	6 (8.8%)	19(27.9%)
Over weight	17(25%)	21(30.8%)	38(55.8%)
Obese	1(1.4%)	5(7.3%)	6(8.8%)

The distribution of the respondents according to their weight was presented in the above table. The results predict that more than half of the selected respondents were over weight (55.8%) and only 27.9% were of normal weight. The study reveals that 8.8% were obese and 7% under weight.

Table 3 Distribution of respondents according to their dietary habits

Attributes	Healthy/ Desirable	Unhealthy/ undesirable	Total
Eating/ skipping breakfast frequently	24 (35.2%)	44 (64.7%)	68
Eating/ Avoiding oil foods	19(27.9%)	49 (72.1%)	68
Eating/ Avoiding junk foods	22 (32.3%)	46 (67.6%)	68
Eating/ Avoiding sweets	29 (42.6%)	39 (57.3%)	68
Eating/ Avoiding green leafy vegetables	31 (45.5%)	37 (54.4%)	68
Eating/ Avoiding fruits	26 (38.2%)	42 (61.7%)	68
Eating/ Avoiding Outside food	34 (50%)	34 (50%)	68

The analysis of dietary habits of respondents reveals an interesting finding that more than half of the sample were having unhealthy / undesirable dietary habits. The study reveals that 64% of them skip breakfast frequently, 72% eat oil foods, 67.6% junk foods, 57.3% like to eat sweets frequently, 54.4% diet lack green leafy vegetables and fruits (61.7%). And half of the sample like to eat outside foods (hotels, restaurants). The study concludes that majority of the sample have undesirable dietary habits which is the main cause obesity in them and directly effecting the blood pressure.

Table 4 : Life style variables of respondents

Variables	N (%)
Physical activity	
Sedentary	68 (100%)
Moderately active	-
Extremely active	-
Sleep patterns	
Early	22(32.4%)
Late	46(67.6%)
Usage of technology	
Smart phones	57 (83.8%)
Laptops/ tabs	28(41.1%)
None	8(11%)
Work stress	
More	9(13.2%)
Average	46(67.6%)
Less	14(20.5%)
Home tensions	
More	17(25%)
Average	31(45.5%)
Less	20(29.5%)

When the data regarding the life style of respondents was analyzed it was found that all the respondents were leading sedentary life style. It was interesting to know from the study that 67.6% were having habit of sleeping late at nights. The study also indicates high usage of smart phones (83.8%) and majority of them had stress at work and home.

Table5: Relation between the blood pressure, body weight, dietary habits and life style

Variables	Blood pressure	Body weight	Healthy Dietary habits	Healthy Life style
Blood pressure	1	0.76*	-0.53*	-0.48*
Body weight	0.76*	1	-0.63*	-0.42*
Healthy Dietary habits	-0.53*	-0.63*	1	0.39*
Healthy Life style	-0.48*	-0.42*	0.39*	1

The results of study indicate and interesting point that all the variables body weight, health dietary habits and life style has significant relationship with each other. Blood pressure is found to have positive relation with body weight and negative relation with healthy dietary and life style. That means as body weight increases the blood pressure also increases, if healthy habits and life style are followed the blood pressure is found to be normal. In same way the body weight is also influenced by dietary habits and life style variable. The results conclude that healthy diet and life style are influencing the body weight and blood pressure specially in middle age working women.

Conclusion

Hypertension is often considered a men's health problem, but that's a myth. Men and women in their 40s, 50s, and 60s have a similar level of risk for developing high blood pressure. But after the onset of menopause, women actually face high risk than men of developing high blood pressure. Blood pressure can increase without any noticeable symptoms. High blood pressure has no obvious symptoms until one experience a stroke or heart attack so it is really important to maintain blood pressure. In some people, severe high blood pressure can result in nosebleeds, headaches, or dizziness. Exercise about 30 to 45 minutes per day, five days a week. An important way to control blood pressure is to Eat a diet that's moderate in calories and low in saturated fats and exercise five days a week for half an hour.

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