

# A Study on Anthropometry and Dietary Habits of Female Employees Working in Call Centre

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## Abstract

Women working in IT sector are reported to have various health issues, due to shift hours they are unable to cope up with stress, tend to eat wrong kind of food without following a improper dietary regime and therefore suffer from obesity and other related problems at an early age. In this study 150 call centre female employees were selected randomly for the purpose through medical assistance in the form of physical health check up camp in the vicinity of call centre. The demographic information and dietary habits details were collected through a questionnaire and employees were screened for anthropometry assessment. Standard measures were used for taking measurements (Ht., Wt., BMI, Waist & Hip mts. and WHR (Waist Hip ratio). Descriptive statistics such as mea, frequencies and % were used to describe the association of the variables. The study found that the employees were aged between (18-35yrs), out of which 45 (30%) females were found doing morning duty and 42 evening shifts (28%) and 35(23%) doing night shifts and 28( 19%) day duty. (30%) females had one year experience with the company and 80(53.3%) females worked for five days a week and rest six to seven days i.e. 50 (33.3% & 13.3%) respectively . The data revealed that there are no fixed timings of taking their meals while on shift as well as on off days. Consumption of alcohol and smoking found to be 20-30% for those consuming daily. The dietary practices showed uncertain meal timings followed by no meal pattern fixed, intake of fried food, bakery products and beverages found to be significant (including alcoholic and non alcoholic beverages ) along with smoking habit . The anthropometric measurements revealed that the mean height and weight observed was 159.7 cms and 55.5kgs . The mean BMI was 22.81kg/m<sup>2</sup>. whereas the average of WHR was found to be 0.90 cms. This indicated that most of the females fall under normal weight category but the WHR value indicates the prevalence of unacceptable ratio of WHR . 80 (53.3%) females belonged to normal weight category, whereas (12.6% & 5.3%) i.e. 43 and 19 females belonged to Grade I obesity and underweight category respectively. Only 8 (5.3%) belonged to Grade II obesity respectively .

**Keywords:** Call centre; Dietary habits; BMI; WHR.

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## Introduction

With the help of technology, activities are no longer confined to a particular place or time, a phenomenon that is clearly illustrated by call centres (Ccs). The use of call centres by the business community has already

become a common phenomenon in both developed and developing countries. In recent years, the call centre industry has experienced a phenomenal growth worldwide (AS Saber, *et al*, 2004).[3] The call centre industry is one of the most rapidly growing in the developed world today (Staples, Dalrymple & Phipps, 2001).[9] Business processing outsourcing organizations commonly known as call centre-work when rest of the India sleeps. There is a graveyard shift starting at 4 am. Working in such shifts having odd timings have started showing hazardous results on the health of Indian youth (K Tamizharasi *et al*, 2012).[10] According to a survey of 100 women, the average age group of women working in call centre is 18-30 yrs, which include those who

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are just school pass, graduates and even housewives. Hence, call centers have emerged as the most sought after workplace for Indian women in recent times. Due to intensive work pressure, requiring high levels of concentration, the performance of employees deteriorates, also performing one type of activity throughout the day. Long hours of work, permanent night shifts, incredibly high targets, health problems have become a major issue. 75% of women working in call centers have a direct effect on their health as working night shifts was upsetting their biological clock. Lack of physical activity, sedentary life style and irregular working hours leads to skipping of meal and eating wrong kind of food available in the cafeteria of the call centre is a common practice of employees further leading weight gain most of the times or loss of weight leading to malnutrition due to irregular schedules. Binging on junk food is a common practice in call centers. According to a study by Boyce *et al.*, (2007)[8] on relationship between physical activity, weight gain and occupational health among call centre employees, The study revealed that 68% of the employees gained weight at an average of 7.3 kg in only eight months. Weight gain as of 2.3 kg has been shown to contribute to worsening health status and to increase risk of diabetes regardless of BMI. Similarly 18% of obesity have been reported by ASSOCHAM amongst the corporate employees (Ahmed *et al.*, 2009).[2] The ASSOCHAM (2012) interacted with over 3000 employees in the age group of 22 to 30 years representing various business process outsourcing (BPO) companies. Over half of respondents said that due to 24X7 working environment and irregular food timings they directly place orders to fast food outlets, street food vendors and roadside eateries, serving ready to eat high calorie processed food items like noodle, burgers, pizza, bhelpuri, chaat, potato chips, wafers, vada pav, sev puri, golgappa's and fried stuff like samosas, pakoras, along with carbonated, aerated drinks, coffee and masala tea. All this leading to health problems like obesity, diabetes, HTN, depression, anxiety and CVD ( [\[hits-Indias-IT-workforce-ASSOCHAM\]\(http://www.newswala.com/.../Chronic-lifestyle-hits-Indias-IT-workforce-ASSOCHAM\)\). Hunt's research over four years found some evidence of concern from management about healthy food snacks because staff tended to be overweight which could be attributable to stress and the sedentary nature of the work \(Hunt, 2008\).\[4\] One more study on beverages it was found that highly caffeinated drinks are a staple of BPO workers diets, the UP study revealed. In all, 2/3<sup>rd</sup> of young workers drink coffee daily, but call centre workers drink more coffee than their non - call centre counterparts \( 2-3 cups a day for call centre workers vs 1-7 cups for the latter \). More call centre workers also consume tea \( 1/4 of respondents compared to non-call centre workers \(only 1/5\). The study also revealed that half of young workers drink soda daily, at an average of 1.5 bottles/cans a day, regardless of group. However, energy drinks are not as popular. Only 15% of young workers drink energy drinks daily. The study showed that 24% of the call center agents studied were either overweight or obese. This lends support to the findings of Tunajeck \*et al.\*, \(2007\) that night shift work can lead to weight gain and obesity. Most of the call centre agents said they engaged in physical activity but described their level of physical activity every day. The study revealed that most of the call centre agents did not have regular time in taking their meals. Majority of them did not take breakfast, lunch and dinner on time due to their erratic schedule, although half \(51%\) of them work 3 or more meals a day. Results showed that frequently consumed food by the call centre agents were meal/poultry/ followed by cereal/ cereal products then sweets/desserts. Similarly, in a study by Marcos and Mariano \*et al.\*, \(2008\)\[6\] on eating habits and health of call centre employees assigned on graveyard shift, no serious health risks have been found to be relate to the employees eating habits.](http://www.newswala.com/.../Chronic-lifestyle-</a></p></div><div data-bbox=)

## Materials and methods

The study was conducted on young female employees working in a call centre of

**Table 1.1: BMI Classification by WHO**

BMI	VALUE (Kgs/ m <sup>2</sup> )
Underweight	< 18.5
Normal weight	18.5- 24.9
Overweight	25.0- 29.9
Obese I	30.0- 34.9
Obese II	35- 39.9
Obese III	= >40.0

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

Gurgaon. The sample of 150 females was collected randomly through Medical assistances in the form of routine Health Check up camp. The employees were screened for anthropometric measurements (Ht., Wt., BMI, Waist and Hip mts. and WHR). The anthropometric measurements were made through standard procedures. The information related to dietary practices and food habits was collected through questionnaire method. Body mass index of subject was determined by using formula:

$$\text{BMI} = \text{Weight in kgs} / \text{Height in m}^2$$

*Waist to Hip Ratio*

The predominant distribution of fat in an obese person, whether in upper part or the lower part of the body may determine the disease pattern, but with upper body obesity the ratio is 0.85 in women and greater than 1.0 in males. Abdominal obesity does not always go hand with overweight or obesity.

The normal Waist/Hip Ratio = 0.7

BMI criteria used to screen for weight categories given by WHO was used.

**Results and Discussion**

In this study the response rate was 100%. The results and analysis of the subjects is as follows:

*A. Demographic Profile*

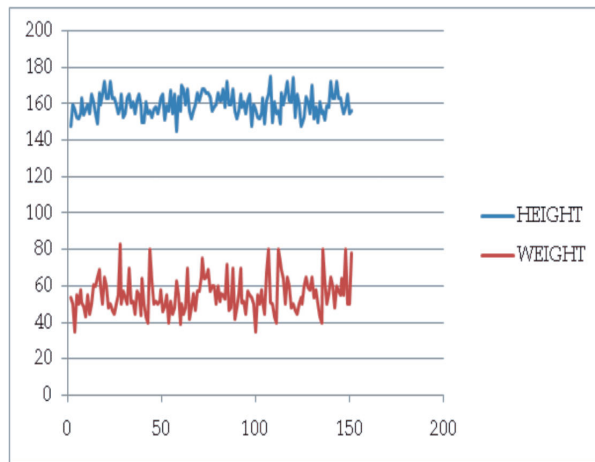
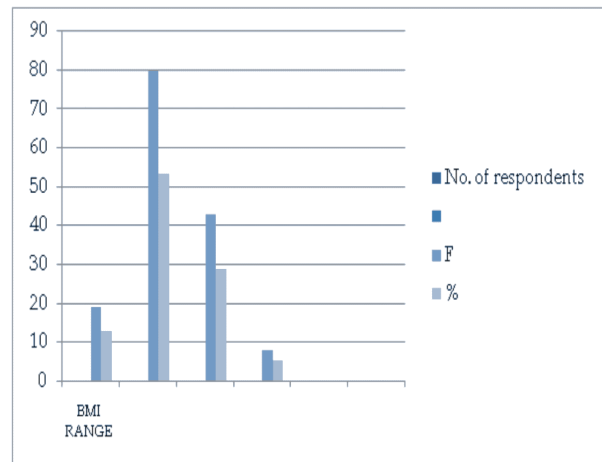
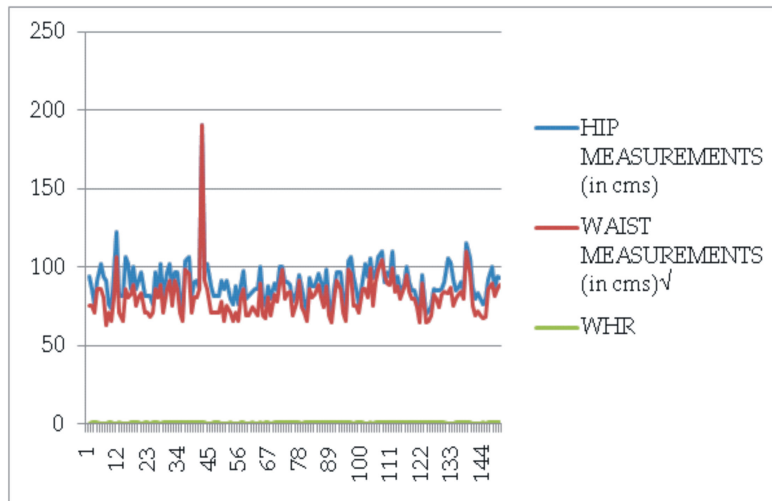
The ages of respondents ranged from 18-35 years. The mean age was 24 yrs. Wherein 81 (54%) of the employees belonged to age group (20-25 yrs), 49 (32.7%) within the range of 25-30yrs, 14 in the age group 18-20yrs (9.3%) and 6 (4%) within 30-35 yrs age group. Most of the females were single/unmarried (67.3%) and rest married. The maximum strength of the employees possess masters degree 40% and rest were graduates (15.3%), under graduates (8%) and high school 17.3%.

*B. Work Related Profile*

In this study 50 females (33.4%) had work experience of minimum six months and 45 (30%) females had experience of an year, 35 (23.3%) reported to be working with the company for about two to three years and 20 (13.3%) with an experience of an year or two. The total duration of breaks was around 2 to 3 for a span of twenty minutes. 80 (53.3%) females worked for five days a week and rest six to seven days i.e. 50 (33.3% & 13.3%) respectively. The study found that 45 (30%) females were on morning duty and 42 evening shifts (28%) and 35 (23%) doing night shifts and 28 (19%) day duty.

**Table 1.2: The Waist to Hip Ratio Table Gives General Guidelines for Acceptable Levels for Hip to Waist Ratio**

	Acceptable		Unacceptable		
	Excellent	Good	Average	High	Extreme
Male	<0.85	0.85-0.90	0.90-0.95	0.95-1.00	>1.00
Female	<0.75	0.775-0.80	0.80-0.85	0.85-0.90	>0.90

**Fig 1.1: Showing Anthropometric Measurements of Employees****Fig 1.2: Showing BMI Status of Female Employees****Fig 1.3: Showing Hip and Waist Measurements along with WHR****Table 1.3: Dietary Habits of Female Employees**

Variables	Intake							
	0-1 times/d	2-3 times/d	5 times/d	more than 5 times/d	Once a day	5-7 times/wk	2-4 times/wk	once a wk
<b>Cold Drinks</b>	117	28	3	2				
%	78%	18.65	2%	1.30%				
<b>Fried Foods</b>	82	51	9	8				
%	54.60%	34%	6%	5.30%				
<b>Tea/Coffee</b>	66	63	13	8				
%	44%	42%	8.60%	5.30%				
<b>Bakery Products</b>					39	39	13	59
%					26%	26%	8.60%	39.30%