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A Comparative Study Of The Impact Of Counseling On The Anthropometric Measurements Of Women (Professional And Non-Professional)

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Abstract

Women today are doing multiple roles in the society which are bearing household and family responsibilities and working outside the home thereby causing poor dietary and nutritional status. Nutritional counseling with emphasis on the intake of a balanced diet can result in the enhancement of nutritional status. Hence the present study**"A Comparative Study Of The Impact Of Counseling On The Anthropometric Measurements Of Women (Professional And Non-Professional)** deals with the improvement in the anthropometric measurements of women after counseling for six months**.** Three hundred women from different age groups, professions, economic and marital status and hailing from various districts of Haryana were enrolled for the study. Nutritional counseling was carried out individually followed by group contacts for a period of six months through modules, lectures, demonstrations, leaflets and visual aids. However, counseling did not bring any significant change in the body weight and BMI of the subjects from different groups. For women to be accepted as efficient homemakers as well as employees, they have to make use of effective stress management techniques, appropriate coping patterns and consume a nutritionally balanced diet.

Keywords- Counseling, Anthropometric variables, diet, balanced.

Women's health is of utmost importance as it reflects the health of the family but in some cases, dual stress of manual labour and conflicting demands of work in and outside the home have been shown to have adverse effects on her nutritional status (Jain and Singh,2003). However, if they want to be accepted as efficient homemakers as well as employees, they have to consume a nutritionally balanced diet. This will not only improve their health and nutritional status but will also reduce their weight. Since health and nutritional status of an individual depends on the food she eats, the components of the diet must be chosen judiciously, to provide all the nutrients needed in adequate amounts and proportions(Jha, 2002).

The nutritional status reflects the health of a person and is influenced not only by the diet consumed but also on the ability of the body to utilize these foods (Mehta, 1990).The counseling is used as an intervention for the promotion of health by enhancing the knowledge of the respondents

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about the consumption of a balanced diet. The first requirement of nutritional counseling or advice is that it should enable the woman to assess her own diet and its composition and compare it with the advice. However, the counselor should emphasize upon bringing a change in the attitudes, knowledge and behaviour of an individual (Buttriss,1997). Eating well, drinking lots of water, consuming fresh fruits and vegetables boosts energy and water helps the body to function properly. The improved dietary habits can lead to changes in women's general health and a disease free life. It can minimize infections and chronic diseases and can reduce birth defects and health care costs. The adults with healthy life style also make good diet choices and greater knowledge and more positive attitudes, beliefs about nutrition influence these (Gates *et. al*, 1998; Ridley, 2000).

The present study was conducted on the women respondents belonging to Haryana state. The state was stratified into four zones* and five districts were selected for carrying out the research. The selected districts were Yamunanagar, Panipat, Bhiwani, Faridabad and Gurgaon. Purposive selection of the subjects was done. Three hundred women were selected and further divided into three groups according to their occupation. In the present study the subjects belonged to the group-professionals, non-professionals and housewives(Table1). The present study aims to provide a practical and positive approach to the women to improve their health and nutritional status. The objectives of the present study are:-

1 To measure the anthropometric variables in women (professional and non-professional).
2 To impart counseling and to evaluate its impact on the anthropometric variables of women (professional and non-professional).

For collecting the data, a questionnaire was drafted with definite, concrete and well-defined questions. Pre-testing of questionnaire was done on 30 subjects to find out the drawbacks and modify the questionnaire to ensure a clear understanding of the questions. The respondents were requested to fill up the questionnaires within a week. The above information was obtained by using the questionnaire cum interview method both before and after counseling for six months.

Anthropometric profile of the subjects:

In the present study, the information related to the average dimensions of major anthropometric variables of the subjects is presented in Tables 2 to 4 and Figures 1 to 3 and is discussed as under:

a) Height

i) According to occupation:-The overall mean height of all the subjects in the present study was 158.397± 5.86cm whereas the mean height in the category of professional, non-professional and housewives respectively was 158.427± 5.874,158.160±4.948 and 158.573±6.698cm (Table 2).The average height of the respondents was more as compared to the height of the reference Indian adult women (151cm) as suggested by ICMR (1989) however, five, three and four subjects respectively from the category of professional, non-professional and housewives were shorter than the height of the reference Indian women.In the sub-groups of professionals, maximum mean

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height was observed in Principals (160.040±6.41cm) and minimum in Directors (157.360±8.65cm) whereas, in the sub-groups of non-professionals- the Telephone operators had the maximum mean height (158.800±4.53cm) followed by Housewives (158.573 ± 6.69cm)(figure 1).

ii) According to income:- The professionals, non professionals and housewives from the high income group had better mean height as compared to the respondents from the low and middle income groups. In the corresponding groups, the respective height was 160.217±4.51, 159.231±5.87 and 158.573±6.698cm. Since the subjects were adults, their height was measured only once. There was a non-significant variation in the mean heights of the respondents from different professions and economic status before and after counseling.

b) Weight

i) According to occupation:-Table 3 exhibits the average weight of the subjects from different categories. Before counseling the overall mean weight of the subjects was 55.597± 7.81 kg with the average weight of the subjects in the category of professional, non-professional and housewives respectively was equivalent to 55.593± 7.832, 55.173 ±6.454 and 56.027±9.021Kg and was found more than the reference standard of 50kg (ICMR,1989). Before counseling, the housewives had maximum (56.027±9.02kg) and the non professionals had minimum (55.173±6.45kg) weight. However, after six months of counseling a non-significant decrease in the mean weight was noticed among the subjects from different groups(Figure 2).

Scrutiny of the data further revealed that after counseling the overall mean weight of the subjects reduced non-significantly to 55.340 ±6.87 kg. However, the housewives had the maximum (55.827±7.88kg) and the non-professionals had the minimum (54.853±5.72kg) mean weight. However, the statistical analysis of the data showed that variation in weight among different categories before and after counseling and reduction in weight after counseling within each category was non- significant. In the present study, the subjects from different occupations had nearly normal weight and those with slightly more weight reduced it by increasing their physical activity and taking a balanced diet. Varmeet and Shoker,(2003) also observed reduction in the weight of women respondents to whom nutrition counseling was imparted. Among the different sub-groups of professionals, teachers had the maximum weight before and after counseling. In the corresponding group, the body weight before and after counseling were 57.820± 6.46 Kg and 56.600 ± 5.58 Kg. However, in the various sub-groups of non-professionals, before counseling, the telephone operators had the maximum weight i.e. 57.280 ± 6.46 Kg which reduced to 56.600 ± 5.58Kg after counseling.

ii) According to income: - Further reading through the data revealed that the housewives from the high income group had the maximum weight (56.027±9.02 kg) followed by the professionals (55.913 ±8.49kg) from the same income group.

Hej *et. al,* (1998) also observed that housewives had higher consumption of food and were

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slightly overweight. The professionals from the high income group in the current study were on an administrative post and may be under stress. The reason of their obesity may be at par with the findings of Rosch,(1995) who reported that stressed out, tense individuals often eat excessively or compulsively to reward themselves or to provide some distraction from their problems and put on weight. He further stated that being obese can be stressful, leading to a vicious cycle. The findings of the present study are in accordance with the observations of the above studies for housewives and professionals belonging to the high income group. The analysis further elaborated that even after counseling, housewives had the highest mean weight (55.892±7.73kg) followed by professionals (55.489±6.62kg) and non- professionals (55.261±5.500kg).

In the present study, the housewives who had maximum weight before and after counseling had faulty food habits and this may be the probable cause of being overweight. Moreover, they were from the high income group.This is close to the findings of Nicholson, (2003), Chawla (1998) and Popkin *etal*., (1995) who also observed that most of the women who were overweight had a higher intake of food and were from the high income group. The subjects of the present study were counseled about the benefits of reducing weight in the form of improved cardio-respiratory fitness, general health and well-being and increased immunity as suggested by Costain and Croker, (2005) in their study. Despite the bare minimum reduction in weight, the subjects in the present study admitted that losing weight had a positive effect on their life by bringing an overall feeling of health and wellness.

c) Body mass index (BMI)

i)According to occupation:- Before Counseling, the overall mean BMI of the subjects was 22.209± 3.10 Kg/m^2.However, the mean BMI of the subjects in the category of professional, non-professional and housewives was 22.200± 3.111, 22.087 ±2.490 and 22.348 ±3.624 Kg/m^2 respectively and was in the normal range (18.5 to 24.99 Kg/m^2) as recommended by WHO,(1995). However, after counseling for six months, the overall mean BMI of the subjects reduced to 21.972±3.31Kg/m^2 and in the corresponding categories of the respondents, the BMI reduced to 21.972±3.324, 21.940±2.169 and 22.003±4.188 Kg/m^2 respectively (Table 4). Before as well as after counseling for six months, the value of BMI was highest for housewives and lowest for non-professionals (Figure 3).

Variation in BMI before and after counseling among different professions and reduction in BMI within each profession after counseling was non significant. Sandhu,(1998) and Baring,(2000) also reported a non-significant decrease in BMI after counseling however Sharma,(1998) reported a slight decrease in BMI after counseling as the subjects not only improved their dietary habits but also increased their physical activity. Inspection of the data showed that among professionals, maximum mean BMI was found in Directors (23.117±3.92 Kg/m^2) followed by teachers(22.761±2.71 Kg/m^2) and engineers (21.965±2.29 Kg/m^2).After imparting nutrition education, BMI reduced in the different sub-groups of professionals barring principals where it

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slightly increased. The reduction in weight was statistically non significant within each sub-group of professionals, however, maximum BMI was found in teachers followed by engineers. The corresponding values were 22.474±2.36 and 22.138±2.65 Kg/m^2 respectively.

Analysis of the data further revealed that in the case of School teachers, directors and principals, the respondents who were underweight were able to achieve normal weight after counseling and improved their BMI. There were eight College lecturers who were overweight before counseling and the number decreased to six after counseling with two more College lecturers achieving normal weight and BMI within normal range. In case of non professionals, maximum mean BMI was found in the telephone operators (22.761±2.71Kg/m^2) followed by the typists (21.860±2.86 Kg/m^2) however, after counseling, the mean BMI of all the respondents reduced slightly in all the three ranks of non- professionals within the group and among the different ranks of non professionals though this reduction was statistically non- significant. Varmeet and Shoker, (2003) also reported reduction in BMI of women respondents after nutrition counseling.

ii) According to income:- In the present study, all the subjects had nearly normal BMI and there was a non-significant variation in the mean BMI of respondents from different groups however, women professionals from the high income group had maximum mean BMI both before and after counseling which were 22.947±2.99 and 22.680±5.41 Kg/m^2 respectively .Nicholson,(2003),Chawla (1998) and Popkin *et. al*, (1995) also reported that most of the women who had high BMI were from the high income group, had poor food habits and insufficient time to exercise. Varmeet and Shoker(2003); Sadana and Hira (1997) reported that women respondents from the higher income group have an increasing tendency to become fat and have higher BMI.

Conclusion:

The outcome of the present study is nearer to the findings of all above studies. In the current study, all the subjects irrespective of their professions and income had BMI within normal range both before and after counseling and those with slightly more weight decreased it by increasing their physical activity, avoiding eating in between meals and by increasing their intake of water.The maximum reduction in BMI was noticed among professionals followed by non-professionals. Moreover, the above findings are in concurrence with the findings of Gates *et. al,* (1998) who stated that adults with more knowledge of nutrition had a healthy life style, made good diet choices and showed a more positive attitude towards nutrition education.

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Table 1: Distribution of Respondents according to their Profession and Residence Ynr Yamunanagar;Kkr--Kurukshetra

S.N0	Profession	Ynr	Kkr	Panipat	Bhiwani	Faridabad	Gurgaon	Total
1	Doctor	10	--	5	2	3	5	25
2	Lecturer	10	2	3	3	3	4	25
3	S. teacher	10	3	5	4	2	1	25
4	Director	3	-	2	5	5	10	25
5	Principal	5	-	5	5	5	5	25
6	Engineer	-	-	4	2	4	15	25
7	Typist	10	5	2	3	3	2	25
8	Clerk	10	-	5	5	3	2	25
9	Tel.operator	5	2	3	5	5	5	25
10	Housewives	30	10	15	5	10	5	75

*(The above zonal grouping of districts is the same as adopted by Economic and statistical organisation of planning department of Haryana (Study published in August, (1989).

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Table 2: Mean Height (cm) of the subjects belonging to different occupations and income groups before and after counseling

			Mean Height(cm)				
			Before Counseling	**After Counseling**			
Occupation							
	Professional	150	158.427 ± 427	158.427 ± 427	0.000	298	NS
	Non Professional	75	158.160 ± 4.94	158.160 ± 4.94	0.000	148	NS
	Housewife	75	158.573 ± 6.69	158.573 ± 6.69	0.000	148	NS
	Overall Data	300	158.397 ± 5.86	158.397 ± 5.86	0.000	598	NS
Type of Profession							
Professionals	Doctor	25	158.160 ± 5.82	158.160 ± 5.82	0.000	48	
	Lecturer	25	157.520 ± 4.49	157.520 ± 4.49	0.000	48	
	Teacher	25	158.800 ± 4.53	158.800 ± 4.53	0.000	48	
	Director	25	157.360 ± 8.65	157.360 ± 8.65	0.000	48	
	Principal	25	160.040 ± 6.41	160.040 ± 6.41	0.000	48	
	Engineer	25	158.680 ± 4.29	158.680 ± 4.29	0.000	48	
Non-Professionals	Typist	25	158.160 ± 5.82	158.160 ± 5.82	0.000	48	
	Clerk	25	157.520 ± 4.49	157.520 ± 4.49	0.000	48	
	Tel. Operator	25	158.800 ± 4.53	158.800 ± 4.53	0.000	48	
	Housewife	75	158.573 ± 6.69	158.573 ± 6.69	0.000	148	
Income							
Professionals	Low	36	157.194 ± 7.99	157.194 ± 7.99	0.000	70	
	Medium	91	158.462 ± 5.08	158.462 ± 5.08	0.000	180	
	High	23	160.217 ± 4.51	160.217 ± 4.51	0.000	44	
Non Professionals	Low	15	157.867 ± 6.39	157.867 ± 6.39	0.000	28	

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	Medium	47	157.957 ± 4.19	157.957 ± 4.19	0.000	92	
	High	13	159.231 ± 5.87	159.231 ± 5.87	0.000	24	
Housewives	Low	15	157.867 ± 6.39	157.867 ± 6.39	0.000	28	
	Medium	47	157.957 ± 4.19	157.957 ± 4.19	0.000	92	
	High	13	158.573 ± 6.69	158.573 ± 6.69	0.000	24	

Table 3: Mean Weight (Kg) of the subjects belonging to different occupations and income groups before and after counseling

			Mean Weight (kg)				
			Before Counseling	**After Counseling**			
Occupation							
	Professional	150	55.593 ± 7.83	55.480 ± 8.82	0.297	298	NS
	Non Professional	75	55.173 ± 6.45	54.853 ± 5.72	0.321	148	NS
	Housewife	75	56.027 ± 9.02	55.827 ± 7.88	0.145	148	NS
	Overall Data	300	55.597 ± 7.81	55.340 ± 6.87	0.428	598	NS
Type of Profession							
Professionals	Doctor	25	54.600 ± 7.67	54.520 ± 6.88	0.039	48	
	Lecturer	25	53.640 ± 4.51	43.440 ± 4.14	0.163	48	
	Teacher	25	57.280 ± 6.46	56.600 ± 5.58	0.398	48	
	Director	25	56.880 ± 8.59	56.520 ± 7.70	0.156	48	
	Principal	25	56.000 ± 12.06	56.200 ± 10.23	0.063	48	
	Engineer	25	55.160 ± 5.49	54.760 ± 5.05	0.268	48	
Non-Professionals	Typist	25	54.600 ± 7.67	54.520 ± 6.88	0.039	48	
	Clerk	25	56.640 ± 4.51	53.440 ± 4.14	0.163	48	
	Tel. Operator	25	57.280 ± 6.46	56.600 ± 5.58	0.398	48	
	Housewife	75	56.027 ± 9.02	55.827 ± 7.88	0.145	148	
Income							
Professionals	Low	36	52.778 ± 7.69	53.083 ± 6.76	0.179	70	
	Medium	91	55.868 ± 7.40	55.451 ± 6.49	0.404	180	
	High	23	58.913 ± 8.49	55.489 ± 7.56	0.202	44	

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Non Professionals	Low	15	55.800 ± 8.26	55.400 ± 7.64	0.138	28	
	Medium	47	54.957 ± 5.64	54.553 ± 4.80	0.373	92	
	High	13	55.231 ± 7.36	55.261 ± 5.50	0.028	24	
Housewives	Low	15	55.800 ± 8.26	55.400 ± 7.64	0.138	28	
	Medium	47	54.957 ± 5.64	54.553 ± 4.80	0.373	92	
	High	13	56.027 ± 9.02	55.892 ± 7.33	0.145	24	

Table 4: Mean BMI (Kg/m^2) of the subjects belonging to different occupations and income groups before and after counseling

			Mean BMI(Kg/m^2)				
			Before Counseling	**After Counseling**			
Occupation							
	Professional	150	22.200 ± 3.11	21.972 ± 3.32	0.613	298	NS
	Non Professional	75	22.087 ± 2.49	21.940 ± 2.16	0.386	148	NS
	Housewife	75	22.348 ± 3.62	22.003 ± 4.18	0.540	148	NS
	Overall Data	300	22.209 ± 3.10	21.972 ± 3.31	0.904	598	NS
Type of Profession							
Professionals	Doctor	25	21.860 ± 2.86	21.811 ± 2.49	0.065	48	
	Lecturer	25	21.641 ± 1.67	21.536 ± 1.48	0.234	48	
	Teacher	25	22.761 ± 2.71	22.474 ± 2.36	0.398	48	
	Director	25	23.117 ± 3.92	21.943 ± 5.80	0.838	48	
	Principal	25	21.855 ± 4.38	21.930 ± 3.64	0.066	48	
	Engineer	25	21.965 ± 2.29	22.138 ± 2.65	0.246	48	
Non-Professionals	Typist	25	21.860 ± 2.86	22.521 ± 2.49	0.065	48	
	Clerk	25	21.641 ± 1.67	21.536 ± 1.48	0.234	48	
	Tel. Operator	25	22.761 ± 2.71	22.474 ± 2.36	0.398	48	
	Housewife	75	22.348 ± 3.62	22.003 ± 4.18	0.540	148	

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Income							
Professionals	Low	36	21.432 ± 3.13	21.527 ± 2.79	0.136	70	
	Medium	91	22.615 ± 3.10	22.221 ± 2.81	0.214	180	
	High	23	22.947 ± 2.99	22.680 ± 5.41	0.983	44	
Non Professionals	Low	15	22.363 ± 2.89	22.202 ± 2.56	0.161	28	
	Medium	47	22.087 ± 2.40	21.913 ± 2.09	0.374	92	
	High	13	22.772 ± 2.45	22.638 ± 2.10	0.038	24	
Housewives	Low	15	22.363 ± 2.89	22.202 ± 2.56	0.161	28	
	Medium	47	22.087 ± 2.40	21.913 ± 2.09	0.374	92	
	High	13	22.772 ± 2.45	22.638 ± 2.10	0.038	24	

Figure 1

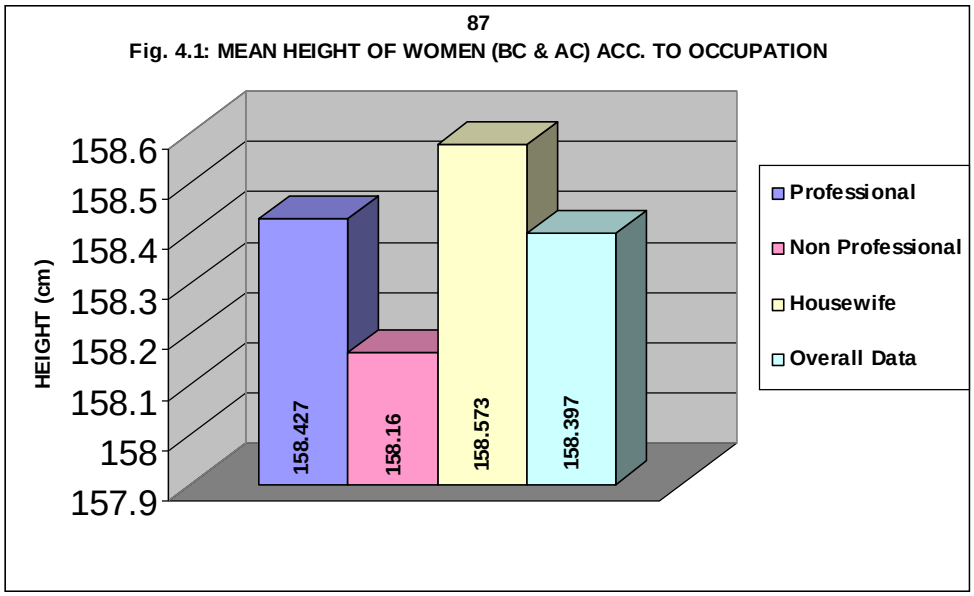

Figure 2

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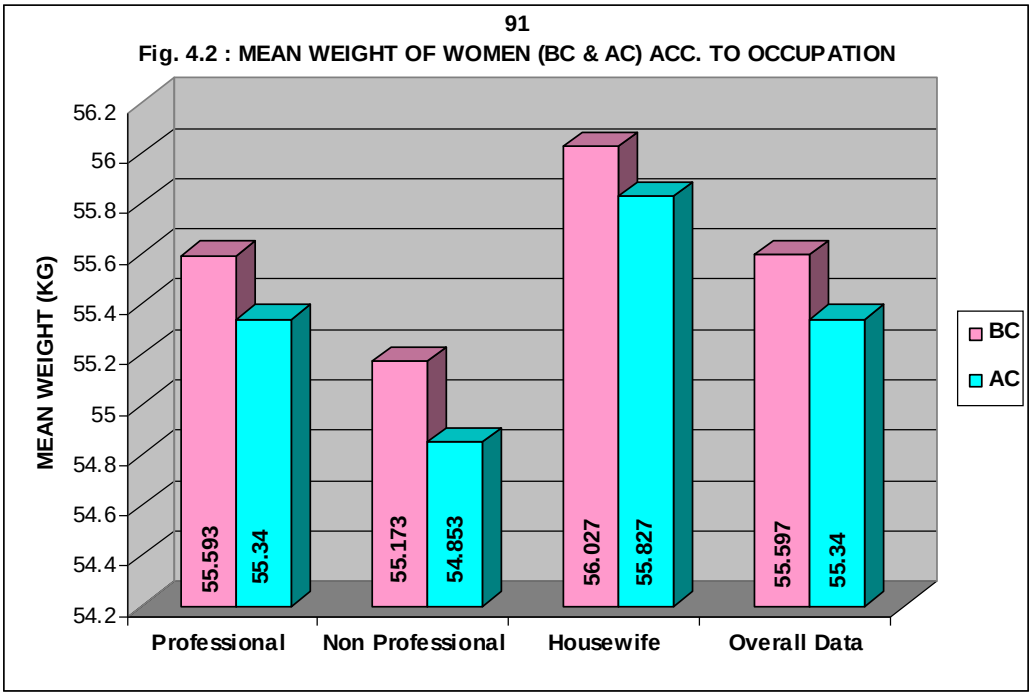

Figure 3

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Fig. 4.3 : MEAN BMI OF WOMEN (BC & AC) ACC. TO OCCUPATION