

Anthropometric and Dietary Survey of Selected Transgenders

Padhmini, K.,¹ SrideviSivakami, P.L.²

¹Research Scholar, Department of Food Service Management and Dietetics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-641 043), padhufsm@gmail.com

²Associate Professor, Department of Food Service Management and Dietetics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-641 043), dr.sridevi.fsmd@gmail.com

Abstract

In India five to six million transgenders are living, in Tamil Nadu around 30,000 transgender populations, about 2,550 transgenders reside in Coimbatore city. Highest Mean height of 165 cm was observed for transgenders between the age group of 40-49 years. A total of 63 per cent transgender's meal pattern indicated that they consumed two meals in a day due to lack of time to eat because of their pattern of work. Dietary survey revealed that 57.5 per cent transgenders skipped their meals daily whereas twelve per cent of transgenders skipped it occasionally and 36.5 per cent transgenders skipped their important meal breakfast. The nutrient intake by the transgenders was found to be inadequate when compared with RDA value. The deficit intake of nutrient can be attributed to wrong food choices, poor food intake, unhealthy food choices and less food expenditure as observed during the study. Wrong dietary habits can lead to metabolic disorders. Through the NGO's and other welfare organization has studied the social issues pertaining to them, the nutrition and health status, is not yet explored to a large extent. Nutrition awareness and healthy lifestyle behavior should be created and re-enforced again and again to this marginalized section.

Key words: Dietary Survey, Nutritional Assessment, Anthropometric, Transgenders

Introduction

Transgender is an umbrella term used to describe people whose gender identity or gender expression differs from that usually associated with their birth sex. Many transgender

people live part-time or fulltime as members of the other gender. Broadly speaking, anyone whose identity, appearance or behavior falls outside of conventional gender norms can be described as transgender (Kevin et al., 2011).

In India five to six million transgenders are living, in Tamil Nadu around 30,000 transgender populations, about 2,550 transgenders reside in Coimbatore city. It was great strides in trying to integrate transgender people into the society (Express India, 2013).

The model for health promotion is a holistic, multidimensional, future-oriented approach to health that focuses not on diseases or conditions but on helping people move toward attaining and maintaining good mental and physical health as a personal resource for recovery (Steinberg, 2006; Hutchinson, et al., 2006).

Eating disorders can appear in transgenders. It attempts to conform with societal conventions relating to thinness and estrange from the body and unrelated to body image itself. Transgenders may also seek to minimize hip and bust ratio by excess exercising or disordered eating (Williamson and Hartley, 2010)

Methodology

A. Selection of Sample

Two hundred subjects from the age group of 20-50 years was selected using stratified sampling technique. In stratified sampling techniques that every item in the population has an equal chance of being included (Kothari, 2007).

B. Assessment of Nutritional Status of the Selected Transgenders

Nutritional assessment is an in-depth evaluation of both objective and subjective data related to individual's food, their nutrient intake. Nutritional status was assessed through anthropometry, dietary pattern. The procedures involved in the assessment are explained below;

1. Anthropometric measurements

Weight, height, waist and hip circumference, Body fat is prominent indicator of health and wellbeing so these measurements were measured for all the selected two hundred transgenders using appropriate equipment's. The Body Mass Index (BMI) and the Waist to Hip Ratio (WHR), Body fat, appropriate formula were also calculated using WHO standard.

2. Dietary Assessment

Twenty four hour recall method is one of the simple ways to assess the nutritional status; the cooked volume of the food consumed by the subject was converted into its raw equivalents. The nutrient intake was calculated for the same. The mean nutrient intake of the selected subjects was compared with the Recommended Dietary Allowance (RDA) of Indian foods and statistically analyzed.

C. Health Education Programme for Selected Transgenders

Health Education Programme was conducted for all the 200 samples using Videos, Charts, Brouchers, Flip Cards, counseling.

Results and Discussion

Age wise distribution

Age wise distribution of the selected transgenders is depicted in figure 1.

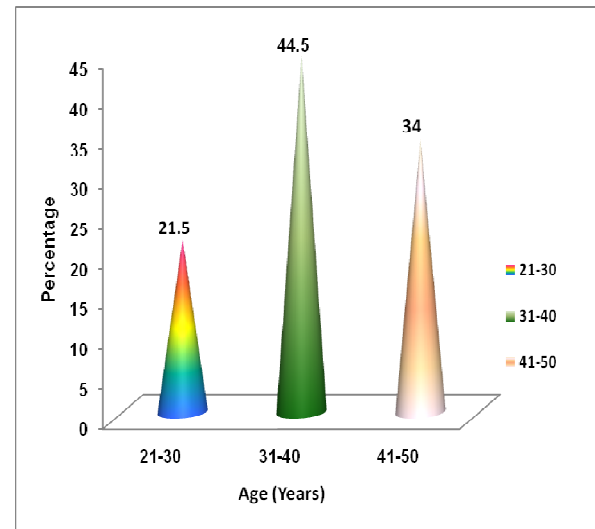


Figure 1-Age Wise Distribution of the Selected Transgender

Figure 1 clearly indicates that 44.5 per cent of transgenders were in the age group of 31-40 years and 34 per cent transgenders belonged to the age group of 41-50 years, followed by 21.5 per cent transgenders were in the age group of 21-30 years.

Anthropometric measurements

The anthropometric measurements for height, weight, waist circumference and hip circumference of the transgenders were measured using standard techniques. The finding on the anthropometric details is furnished in the following tables.

The mean height of the selected subjects

The height of the all the selected transgenders was measured using an inch tape and their mean height is shown in Table I

Table I
The Mean Height of the Selected Transgenders
(N=200)

Age (years)	Height (cm)	
	Standard value*	Mean± S.D
20-29	162.5	163.5±7.68
30-39	162.4	164.2±8.11
40-49	162.2	165.89±10.16

*ICMR- standard height for age (2009)

From the table I, highest Mean height of 165 cm was observed for transgenders between the age group of 40-49 years, their height was in par with the standard mean height of Indian men. From the above findings it can be concluded that transgenders between the age group of 20-39 years had normal height, indicating a good growth rate.

Body fat composition

Body fat composition of the selected transgender is shown in table III

Age (years)	Number	Per cent
20-40	132	66
Under fat (21%)	10	5
Healthy range (21-33%)	58	29
Overweight (33-39%)	63	31.5
Obese (>39%)	1	0.5
41-60	68	34
Under fat (23%)	22	11
Healthy range (23-35%)	19	9.5
Overweight (35-40%)	26	13
Obese (>40%)	1	0.5

Based on the Gallagher (2000), Out of 200 subjects 66 percent were in the age group. It shows 5 percent were under fat, 29 percent were healthy range, 31.5 percent were overweight and only 0.5 percent were obese as they consumed more amount of non-vegetarian foods and have the habit of consuming more amount of junk foods and they consume hormonal tablets, hormonal injection as a process of transition of the development of secondary sex organs.

Among the selected transgenders, 34 per cent were in the age group of 41-60 years it shows 11 per cent were under fat, 9.5 per cent were healthy range and 13 per cent, 0.5 per cent were overweight, obese category respectively.

Body Mass Index

The Body Mass Index of the selected transgenders is showcased in Table IV

Table IV
Body Mass Index of the Selected Transgenders
(N=200)

BMI Classification	Number	Percentage
Underweight (<18)	10	5
Normal (18 – 23)	68	34
Overweight(23.1-27.5)	85	42.5
Grade I obes(27.5-32.5)	32	16
Grade II obese (32.5-37.5)	3	1.5
Grade III obese (>37.5)	2	1

- BMI classification, (WHO, 2012)

The Table IV indicates that 42.5 per cent transgenders were found to be overweight. Also 16 per cent comes under grade I obesity and five per cent transgenders were found to be underweight, it was also observed that 34 per cent subjects had a normal BMI that is 18-23.

Waist Hip Ratio

The Waist to Hip Ratio of the selected transgenders was calculated using waist and hip circumference is tabulated in table V.

Table V**Waist Hip Ratio of the Selected Transgenders (N=200)**

Parameter	Waist Hip Ratio*		Percentage
	Risk Index	Number	
Low risk	0.9	81	40.5
Moderate risk	0.9-0.95	119	59.5
High risk	>0.1	Nil	-

* WHO, standard value (2011)

Table V, shows that 59.5 per cent transgenders were at moderate risk for obesity. Since their WHR lies between 0.9-0.95 and 40.5 per cent transgenders comes under lower risk for obesity with the WHR 0.9.

Dietary information

Using an interview schedule the dietary habits such as meal pattern and skipping of meals are elicited.

Meal pattern

The dietary information on meal pattern, of the selected transgenders is projected in the following table VI

Table VI**Meal Pattern of the Selected Transgenders (N=200)**

A total of 63 per cent transgenders meal pattern indicated that they consume two meals in a day due to lack of time to eat because of pattern of their work. On the other side 32 per cent consumed less than three meals and they reported that they don't have an appetite as source of income was collecting money from shops and which was unstable.

Skipping of meals

The skipping of meals of the selected transgenders is depicted in the table XI.

Table VII**Skipping of Meals of the Selected Transgenders (N=200)**

Skipping of meals	Subjects	Percentage
Breakfast	73	36.5
Lunch	94	47
Dinner	3	1.5
Frequency of skipping meals		
Daily	115	57.5
Weekly once	12	6
Weekly twice	19	9.5
Occasionally	24	12

Dietary survey revealed that 57.5 per cent transgenders skipped their meals daily whereas twelve per cent of transgenders skipped it occasionally and 9.5 per cent transgenders skipped their meals twice a week. Forty per cent transgenders have the habit of skipping their lunch and 36.5 per cent transgenders skipped their breakfast.

Mean nutrient intake

A 24 hour dietary recall method was done for consecutive three days for all the selected transgenders and their mean nutrient intake was calculated using nutritive value of Indian foods by National Institute of Nutrition.

Meal pattern/day	Number	Percentage
Two meals	126	63
Three meals	64	32
Four meals	10	5

Table VII
Mean Nutrient Intake of the Selected Transgenders
(N=200)

NUTRIENT S	Mean nutrient intake		t value	Excess / Deficit Per cent
	Mean± S.D	RDA		
Energy (kcal)	2233.65±20 6.61	2727	26.45* *	-18.09
Carbohydrates (g)	286.69±40.3 0	320	16.23* *	-10.40
Protein (g)	51.60±5.27	60	7.35**	-14
Fat (g)	23.18±4.22	20	12.67* *	15.9
Calcium (mg)	296.61±76.3 6	600	21.68* *	-50.56
Iron (mg)	29.10±8.00	17	5.82**	7.17
Vitamin A (µg)	2632.58±41 3.39	3000	78.12	-12.24
Thiamin (mg)	1.34±0.249	1.4	1.98*	-4.28
Riboflavin (mg)	1.69±0.306	1.6	2.89**	5.6
Niacin (mg)	18.10±4.60	18	4.98**	0.55
Vitamin C (mg)	36.6±6.81	40	9.33**	-8.5
Folic acid (mg)	65.47±22.88	100	12.67* *	-34.53

Significant at 5% level ** - Significant at 1% level
The actual mean nutrient intake of the transgenders showed a deficit intake for calcium, carbohydrate, iron, vitamin A,

thiamin, riboflavin, niacin, vitamin C and folic acid and the values are significant at one per cent level. It was also observed that the transgenders showed an excess intake of fat compared to the Recommended Dietary Allowances. The nutrient intake by the transgenders was found to be inadequate when compared with RDA value.

Health Education

Nutrition education was created awareness among the transgenders. Its help to change their irregular food habits, good food choices and they understand the importance of diet and menu planning with the all food groups and balanced diet.

Conclusion

The transgenders has to be protected not only from major issues of discrimination and social bias, but also from the health point of view, to enable this suppressed group of people to lead a healthy life, nutrition awareness and healthy lifestyle behavior should be created and re-enforced again and again to this marginalized section.

Bibliography

1. Express India, 2013
2. Kevin L Ard., Harvey, J., Makadon.,(2011). Improving the health care of lesbian, gay,
3. bisexual and transgender people understanding and eliminating health disparities., p.2.
4. ICMR- standard height for age, 2009.
5. ICMR–standard weight for age , 2009.
6. Gallagher, J., (2000). Clinical Nutrition; 72:694-701.
7. WHO.,(2010), “The desire to live and be accepted as a member of the opposite sex”, in ICD-10, Gender Identity Disorder, Published by World Health Matters
8. Williamson and Hartley, 2010. The Psychology of Gender and Health: Conceptual and Applied Global Concerns, Pp:156
9. WHO standard weight for age, 2011
10. WHO standard Height for age, 2011