Dietary Intake Pattern among Bangladesh Female Workers in Garment Factories and their Health Problem

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Introduction

In recent years Bangladesh made a tremendous stride in garments sector. Although output in garments export sector began in the year 1976-77, it accounts for about 50% of the total foreign exchange earning of the country. Bangladesh has earned TK. 4075 crore in the year 1991-92. The quality of the products has soon attracted the consumers in the international market that has enlarged the scope of expansion of garment industries. In 1983 there were 47 garment factories in the country. Now there are 1200-1300 garment factories in Bangladesh and some 1000 new factories are in the process of operation. This has created job opportunities for a million workers. Females represent 85% of the total working force of the garments factories. Most of these workers come from rural poor families wih little or no formal education. More than a third of the workers is illiterate and a half has primary level of formal educattion.

Malnutrition, especially affecting the women and children, is a chronic problem in Bangladesh[2,3]. Malnutrition not only affects physical and mental growh it also results in poor performance at school and at work, and the perpetuation of poverty from one generation to the next[4]. Inadequate dietary intake and poor nutritional status in most population groups have been documented in the national surveys[2,3]. Various micro studies also documented the dietary intake pattern and nutritional status of different selected population groups[5-7]. However, there is very little information available in the literature about the nuritional status and the dietary intake pattern of female workers in garments factories. The present study was undertaken as an attempt to delineate the food intake pattern, healh problems and job stress of garments workers.

Materials and Methods

Five garments factories in Dhaka Metropolitan City were arbitrarily selected for this study.

Various types of work are performed by female garments workers. According to their work pattern they are categorised into four groups e.g. Operator, Iron man, Helper and Supervisor. A total of one hundred and two female workers were interviewed.

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The smapled workers were randomly selected from a complete list of workers of individual garments factories. The information were collected through a questionnaire. The questionnaire was pretested with a small number of worker in one garment factory.

The survey was conducted during November and December, 1990. Dietary data were collected by recall method for 24 hours. All cooked foods were converted into their raw equivalents using the conversion factor Tables[8] and the nutritional values were calculated by using local Food Composition Table[9].

Results

Table 1 shows the distribution of samples by age groups, education and marital status. An overwhelmly large proportion of garment workers are young girls and teen-agers. Forty four percent and 26% of the workers are in the age groups of 13-15 and 16-19 years respectively. Twenty four percent are between 20 and 39 years and 6% workers are young girls under 12 years. As to the respondents' educational level 35% are illiterate and 52% completed primary level of education. About 50% of the garment workers are unmarried, 40% married, 7% divorced and 3% widow.

Table 1: Age, educational level and marital status distribution of the respondents(N=102).

Age range (year)	%	Literacy level%				Marital Status%			
		illiterate	Primary	Secondary	Higher Secondary	Unmarried	Married	Divorced	Widow
10-12	6	4	1	-	-	34	-	-	-
13-15	44	15	32	3	-	9	3	-	-
16-19	26	13	12	6	1	5	17	3	-
20-39	24	3	7	1	2	2	20	4	3
	100	35	52	10	3	50	40	7	3

Table 2 shows the food intake pattern of the garments workers studied. It is evident that rice is the basic food in all the three meals(76.5-98.0%). Only 16.7% reported to have taken bread in breakfast. Thirty four to 44% of the respondents ate rice with mashed potatoes or brinjal and some kind of leafy vegetables(sak). Twenty one to 34.0% had fish and vegetables curry with rice. Some 24.5% to 31.4%. had pulses which included mashed khesari and lentil soup. Intake of meat (1.9-2.9%) and egg (2.9-5.9%) was negligible. A small proportion of the workers (2.9-3.9%) had either tea only

or one or two pieces biscuit or a piece of bread or singara in between meals. Over ninety seven percent did not have any kind of fruit in their diet. Banana was the only fruit eaten by less than 3% of the workers interviewed.

Table 3 presents food intake by major food groups. It is evident that rice contributes the bulk of total dietary intake. Intake of all other groups are low. Fat intake is extremely low and the intake of fruits and milk is negligible.

Table 2 : Percent distribution of the respondents by type of food intake in different meals (N=102)

Types of Food	Break-fast	Lunch	Dinner	In between meals
Rice	83.3	76.5	98.0	-
Other cereals	16.7	19.6	1.9	-
Meat	2.9	1.0	2.9	-
Egg	5.9	2.9	5.9	-
Fish & vegetables Curry	24.5	20.6	34.3	-
Vegetables	34.3	36.3	44.1	-
Pulses	31.4	24.5	24.5	-
Fruits	1.0	1.0	-	-
Snacks, Biscuits, Singara etc.	-	-	-	2.9-3.9

Table 3 : Food Intake by major Food Groups by Female Garment Workers (Mean±S.D)

Group workers	Cereals	Starchy roots	Sugars & syrups	Pulses, nuts & Seeds	Vegeta-bles	Fruits	Meat, Fish & eggs	Milk and milk products	Oils & fats	Spices and condim-ents
A(10-12) yrs)	399.26± 106.59	27.13 ± 37.22	1.00 ± 2.80	18.93 ± 29.87	29.93 ± 34.03	0.67 ± 2.58	21.46 ± 22.68	— —	0.33 ± 1.29	6.06 ± 9.39
B(13-15 yrs)	450.96 ± 110.89	19.81 ± 25.33	1.09 ± 3.75	6.68 ± 6.98	35.16 ± 42.36	— —	36.15 ± 38.59	— —	0.36 ± 2.22	5.93 ± 9.46
C(16-19 yrs)	405.57± 161.01	26.47 ± 53.16	0.78 ± 2.50	15.21 ± 23.13	41.63 ± 45.77	— —	32.36 ± 42.13	— —	1.68 ± 3.91	3.68 ± 9.12
D(20-39 yrs)	395.11 ± 118.13	32.61 ± 52.29	1.52 ± 4.27	4.72 ± 8.83	59.11 ± 68.02	3.61 ± 16.23	26.76 ± 27.39	0.13 ± 0.83	1.36 ± 3.79	4.19 ± 8.78
All	420.59 ± 120.58	26.64 ± 47.59	1.18 ± 3.59	9.38 ± 17.06	44.04 ± 53.20	1.37 ± 9.75	29.84 ± 33,74	0.04 ± 0.49	1.01 ± 3.12	9.92 ± 9.15

N. B : Food intake in gram; ABCD different age groups of the respondents

Table 4 shows the mean daily intake of energy and nutrients by age group. It is evident that the intakes of energy and nutrients are extremely low in all age groups indicating the inadequacy of the diet in both quality and quantity.

Common health problems of the garments workers studied are shown in Table5. Respectively 84 .31%, 84.21%, 75.49% and 67.65% of the workers reported to have muscle or bone pain, headache, backache, fatigue and eye strains. some 25.49%, 39.21% and 17.65% of the respondents reported to be suffering from cough and skin diseases. Over forty percent of the workers reported that they have chest and abdominal pain.

Poor health status and eye strain of the garments workers appear to be closely associated with the length of their job. As is seen in Table 6 the workers with longer job experience have markedly higher prevalence of eye strain and poor health than those with shorter job experience.

The working hours in the garments factories are from 8 a.m. to 4.p.m. All the workers interviewed reported that they are required to work overtime (2-4 hours) every day and work even on weekly holidays. Sometimes overtime working hours extend upto 6 hours a day when product demand is high.

Table 4 : Daily intake of energy and nutrients of Female workers of Garments factories by age group.

Age(years)	Energy (Kcal)	Protein (mg)	Calcium (mg)	Iron (mg)	Vit.-A (mic-g)	Vit.-B1 (mic-g)	Vit.-B2 (mg)	Vit.-C (mg)
10-12	1332.89 (2350)	36.63 (45)	121.88 (650)	16.66 (10)	560.5 (575)	0.96 (1.2)	0.48 (1.3)	13.77 (20)
13-15	1608.52 (2260)	39.41 (47)	157.61 (650)	21.07 (24)	669.02 (725)	1.09 (1.1)	0.57 (1.2)	19.90 (30)
16-19	1630.60 (2100)	38.55 (46)	121.26 (550)	20.10 (24)	700.06 (750)	1.06 (1.0)	0.49 (11.1)	13.77 (30)
20-39	1451.60 (2000)	40.40 (40)	124.80 (450)	22.51 (28)	611.05 (750)	0.96 (1.0)	0.49 (1.1)	17.71 (30)
All	1538.70 (2200)	39.18 (45)	134.42 (500)	20.90 (25-30)	343.50 (2500)	0.98 (1.1)	0.52 (1.2)	16.96 (30)

(Figures in parentheses are the allowance of energy and nutrients for Bangladeshi females in respective age groups. Source: Nutritive value of Bangladeshi common foods. Institute of Nutrition and Food Science. DU.1986 and conversion factors and Dietary calculation. INFS,DU,1991).

Table 5 : Health problem of female garment workers(N=102)

Health problem	Yes	No
Chronic disease	25.49	74.51
Back ache	89.21	10.79
Chest pain	40.20	59.80
Cough	39.21	60.79
Abdominal pain	40.20	59.80
Eye pain or water dropping	67.65	32,35
Muscle or bone pain	90.20	9.80
Fatigue	75.49	24.51
Skin disease	17.65	82.35
Headache	84.31	15.69

Table 6 : Median job length, eye strain and health problem of garments workers.

	Median job length	No.and% below median job length (N=51)		No.and % above median job length (N=51)	
	years	Complain present	Complain Absent	Complain present	Complain Absent
Eye strain	4	27(52.94)	24(47.06)	45(88.24)	6 (11.76)
Health problem	4	18(35.29)	33(64.71)	35(68.63)	16 (31.37)

Discussion

The vast majority of garment workers comes from rural poor families. They are either illiterate or have primary level of formal education. This study indicated that most of the workers are young and their food intake is poor and the job stress is high.This may put them to health and nutritional problems in future.

Their diets are deficient in calories (quantity) and essential nutrients (quality). Similar results were also reported by other workers'.

Most of the garment workers interviewed complained of headache, back-ache and muscle or bone pain. This may be due to their sitting nature

of work. There is a very little scope for physical movement inside the garments factories. Headache and eye strain problems may be due to mechanical noise and dirts coming from cloth.

Summary

One hundred and two female workers were selected randomly from five garments factories of Dhaka City. Food items eaten during breakfast, lunch and dinner and in between meals were estimated by 24-hour recall interview. The information regarding their health problems and job stress were also collected through a questionnaire.

Rice is the basic food in all meals of the garment workers' breakfast (80.4%), lunch (70.0%) and dinner (98.0%) with pulses (Khesari and lentil) and vegetables (potato,lal sak or data sak).Garments workers' diets are deficient in both energy and essential nutrients.

Over 90%,80%,84%,75% and 67% of garment workers complained of muscle or bone pain, headache, back-ache, fatigue and eye strain respectively. Garments workers are required to work overtime for2-6 hours every day. They have to work even on weekly holidays.

References

1. Ashrafuzzaman, S. Garment busines anarchy. The daily Sangbad (Economic Page) dated 13, December,1992.
2. INFS. Nutrition Survey of Rural Bangladesh, 1975-76.Institute of Nutrition and Food Science, University of Dhaka,1977.
3. INFS. Nutrition Survey of Rural Bangladesh, 1981-82. Institute of Nutrition and Food Science, University of Dhaka, December,1983.
4. Grant, J.F. The State of the World's Children ,Published for UNICEF. Oxford University press, 1990.
5. Hassan, N. and Barua, S. Nutrition profile of the orphan. A case study in the Dhammarajika orphanage of Dhaka City. Bang j Nutr. Volume 3; Numbers I and 2, December 1989-June 1990.
6. Abdullah, M. and Ahmed, L. Studies on rural-urban differentials in the nutritional status of at-risk groups in Bangladesh, INFS, DU, 1992.
7. Nahar, B. Sayeed, S. and Quazi, S. A comparative study on the Nutritional status of Females belonging to two different socio-economic groups. Bang.J. Nutr.,Vol.3, December, 1989-June 1990.
8. Ali, K.M.S. and Pramanik A.M.M. Conversion factors and dietary calculation. INFS, University of Dhaka,1991.
9. INFS. Nutritive value of local foods. Institute of Nutrition and Food Science, University of Dhaka,1986.