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Research Article

**A RESEARCH TO ASSESS THE DIET PATTERN WITH
VARYING NUTRIENT'S INTAKE: DORMITORY VERSUS
NON-DORMITORY FEMALE STUDENTS**¹Dr. Afeefa Saeed, ²Dr Muhammad Moazam, ³Sarah Razzaq¹Nishtar Medical University, Multan, ²BHU Karianwala, ³Sir Ganga Ram Hospital, Lahore.**Article Received:** February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

Background: Proper intake of nutrition, especially the energy and essential nutrients intake in young girls is very much important for their growing bodies and physiological conditions.

Objective: Our research aimed to determine the status of nutrients intake by dormitory female students and non-dormitory female students.

Patients and Methods: We carried out this cross-sectional research at Sir Ganga Ram Hospital, Lahore from October 2017 to June 2018 on a total of 300 students dormitory and non-dormitory (150 each) female students who were selected randomly. We recorded anthropometric and demographic information of the students along with twenty-four hours' diet pattern for three non-consecutive days in a week. We also made a statistical analysis of the gathered data.

Results: The outcomes present that average regular consumption of energy of dormitory female students was (2220 ± 1613 kcal) and non-dormitory female students (2311.8 ± 1455.3 kcal). These outcomes reflect that there is a non-significant difference between both. Protein level was low in dormitory females than non-dormitory females (P-Value < 0.001). The intake of iron, calcium, zinc, Vitamin B-I & II in among dormitory females was lower than non-dormitory female students (P-Value < 0.001). However, we reported a non-significant variation in Vitamin A, C, B6 & B12, folic acid and phosphorus of both the groups (P-Value > 0.05).

Conclusion: Outcomes indicate that non-dormitory group's nutritional status was better than dormitory female students; therefore, it suggests for a change in the modification and improvement of the nutritional intake of dormitories in order to sort out nutritional issues.

Keywords: University, Nutritional Status, Energy, Dormitory, Non-Dormitory, Protein, Vitamin and Folic Acid.

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INTRODUCTION:

Students shift from parent's dependency to self-controlled life while university life. This transitional phase directly affects their living and eating habits. Females are more important than males in these decisions [1, 2]. Developed countries have focused the subject of nutritional intake of such students as the students willingly skip meals, take low-calorie diets and high valued food. Lifestyle shifts at this stage of life with an intake of dormitory food increased intake of coffee and tea at night studies, business & instant meals, parties, high-fat food and sodium intake which makes the onset of obesity common among such students [3 – 5]. Although the average energy intake is as required; whereas, the intake of calcium, iron and phosphorus in particular context to females is less than required [6, 7]. According to the recommended fat intake, the intake of females was higher than prescribed standards [8]. Few more research works also compare the intake of males and females and suggest that the intake of Vitamin A, B-6 & B-12, C, folate, magnesium, calcium and zinc is lower in females in comparison to boys [9 – 11].

In the consideration of said facts; our research aimed to determine the status of nutrients intake by dormitory female students and non-dormitory female students.

MATERIALS AND METHODS:

We carried out this cross-sectional research at Sir Ganga Ram Hospital, Lahore from October 2017 to June 2018 on a total of 300 students dormitory and non-dormitory (150 each) female students who were selected randomly. We recorded anthropometric and demographic information of the students along with twenty-four hours diet pattern for three non-consecutive days in a week. Gathered information included information about weight, height, waist, hip and wrist circumference. A trained person estimated the intake of food after informed consent. Dormitory

student refers to an intake of one meal for five days. We also made a statistical analysis of the gathered data through SPSS, T-Test, Chi-Square, Mann-Whitney and Fisher Exact Tests (P-Value < 0.05).

RESULTS:

The outcomes present that average regular consumption of energy of dormitory female students was (2220 ± 1613 kcal) and non-dormitory female students (2311.8 ± 1455.3 kcal). These outcomes reflect that there is a non-significant difference between both. Protein level was low in dormitory females than non-dormitory females (P-Value < 0.001). The intake of iron, calcium, zinc, Vitamin B-I & II in among dormitory females was lower than non-dormitory female students (P-Value < 0.001). However, we reported a non-significant variation in Vitamin A, C, B6 & B12, folic acid and phosphorus of both the groups (P-Value > 0.05). The average age for the dormitory females was (21.5 ± 2.5) years and for non-dormitory females (22 ± 0.1) years with a significant P-Value taken as (0.056). The average household size for the dormitory females was (5.2 ± 1.3) and for non-dormitory females (4.8 ± 1.1) with a significant P-Value taken as (0.005) with a respective number of four and six (P-Value = 0.000). No significant variation was observed among both groups in terms of hip, arm and wrist circumference along with BMI. However, significant higher waist circumference was reported non-dormitory females (P-Value < 0.03). Intake of protein was also high among non-dormitory females (P-Value < 0.001). Similarly, the amount of zinc, iron and calcium was also high among non-dormitory female students (P-Value < 0.001). Vitamin B1 & B2 was also high among non-dormitory females in comparison with dormitory females with respective P-Values of < 0.001 & 0.03. Detailed outcomes are given in the tabular and graphical data.

Table – I: Anthropometric variables (Mean and SD)

BMI & Circumference	Dormitory		Non-Dormitory		P-Value
	Mean	±SD	Mean	±SD	
BMI (kg/m ²)	21.7	2.7	22.3	3	0.093
Hip (cm)	95	5.8	96.2	8.6	0.174
Waist (cm)	71	6.2	72.8	8.8	0.038
Arm (cm)	25.5	2.4	25.9	2.2	0.131
Wrist (cm)	15.1	0.9	15.1	0.8	0.98

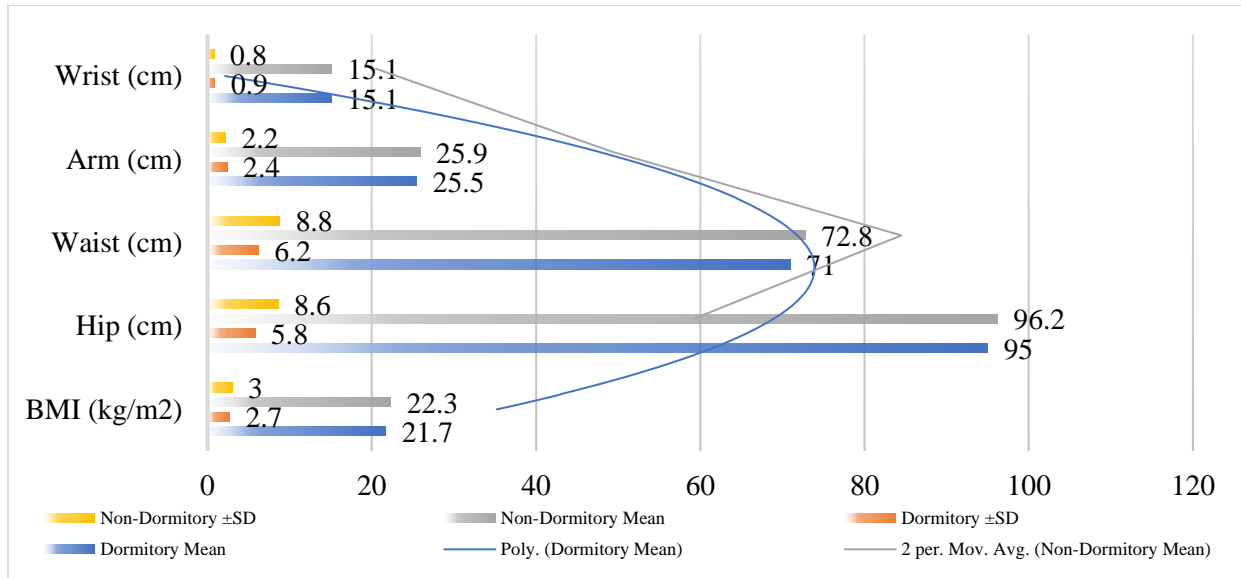
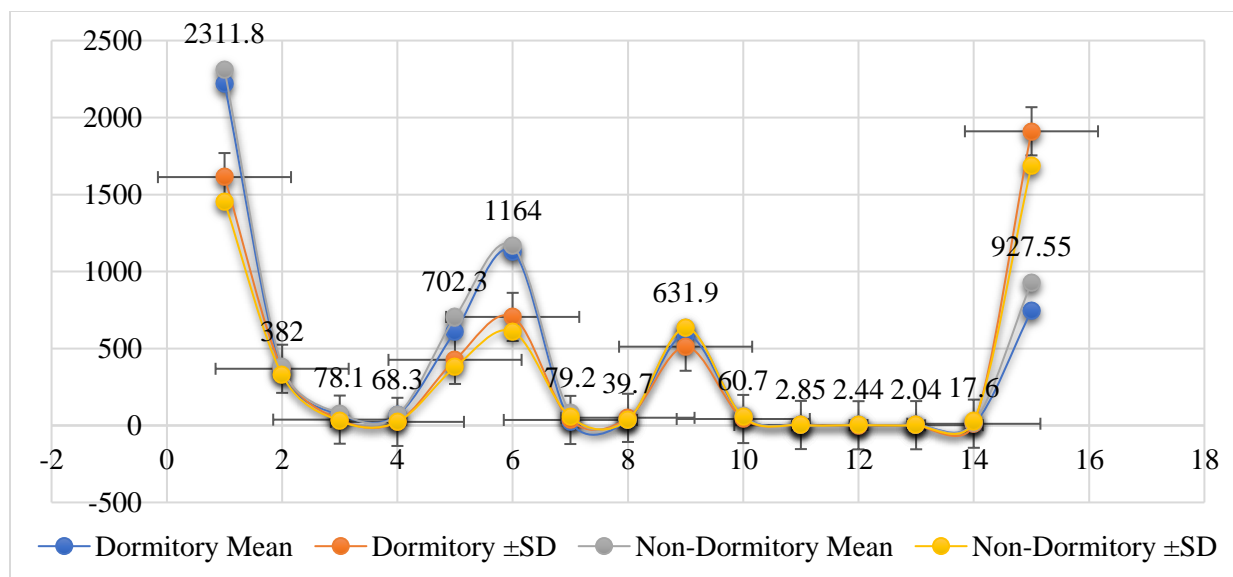


Table – II: Intake of Nutrients (Mean and SD)

Nutritional Parameters	Dormitory		Non-Dormitory		P-Value
	Mean	\pm SD	Mean	\pm SD	
Energy	2220	1613	2311.8	1455.3	0.602
Carbohydrate	353.1	368.2	382	329	0.237
Protein	70.1	37.9	78.1	29.5	0.001
Lipid	68.3	23.3	68.3	23.3	0.574
Calcium	611.3	426.1	702.3	377.8	0.001
Phosphorus	1130.8	705.1	1164	610	0.164
Iron	25.4	35.8	79.2	54.8	0.001
Zinc	36.3	49.4	39.7	37.6	0.003
Vit – A	590.3	511.6	631.9	634.3	0.255
Vit – C	58.1	42	60.7	54.6	0.934
Vit – B1	2.49	3.11	2.85	2.8	0.01
Vit – B2	1.73	1.23	2.44	1.83	0.03
Vit – B6	1.93	1.76	2.04	1.5	0.116
Vit – B12	9.06	11.44	17.6	28.05	0.175
Folic Acid	745.34	1910.83	927.55	1686.3	0.114



DISCUSSION:

Intake of protein was low among students living in dormitories than non-dormitory females. Other research works report that an average intake of protein was high among non-dormitory students than dormitory students [12]. The low consumption of the protein by dormitory students is due to the low protein diet selection by the students.

The low average intake of calcium among students is possibly due to reduced dairy intake dietary patterns. Previous studies also report reduced calcium intake as students do not consider milk, yoghurt and related dairy products as a part of their regular diet plan due to multiple reasons probably being expensive or need a bit more effort to be made available [13]. We reported a reduced iron intake among dormitory students than non-dormitory female students which are the same as reported in other studies [14, 15]. Tarighat reported a sufficient iron intake among students which is also same as reported by Khammarnia; the prominent reason behind iron adequacy was regular beef intake by students [12, 16].

The intake of zinc was also low among dormitory students than non-dormitory students which are the same as reported in various other research studies with a non-significant difference of zinc intake among both groups [17]. Few previous studies also report an inadequate intake of zinc among females even with a regular meat intake [18]. The possible reason behind may associate it with the higher intakes of unground cereals which carries high values of phytate and fibre; moreover, it also effectively reduces the absorption of zinc. The increased average intake of protein, iron and calcium among non-dormitory female students than

dormitory students show an inadequate nutrient (dairy, fruits and vegetables) intake by dormitory residents. These students depend on the diet plan selected by the universities. Moreover, Vitamin B-1 and B-2 were high among non-dormitory females which is because of inadequate intake of nutrition among dormitory students.

CONCLUSION:

The residential status of the students affected food type and nutrients' intake amount. There is a great influence of food intake with a change of location and eating habits of the dormitories. Outcomes indicate that non-dormitory group's nutritional status was better than dormitory female students; therefore, it suggests for a change in the modification and improvement of the nutritional intake of dormitories in order to sort out nutritional issues.

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