

Assessment of Nutritional Status and Stress Among Adolescent Girls**Kamala Kanta Mishra¹, Alok Kumar², Neera Kumari³**¹Tutor, Department of Physiology, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India²Tutor, Department of Physiology, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India³Assistant Professor, Department of Physiology, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India

Received: 15-05-2023 / Revised: 13-06-2023 / Accepted: 10-07-2023

Corresponding author: - Alok Kumar

Conflict of interest: Nil

Abstract**Background:** Adolescence, the transitional period between childhood and adulthood, plays an essential role in human existence. It has been stated that adolescence is a developmental stage characterised by challenges, tensions, and uncertainties that can cause stress and diminish adolescents' future hopes.**Methodology:** Out of 170 females aged 10 to 19, 153 volunteered to participate in the study. They were evaluated on a seven-point scale containing 35 items that are divided into five categories: Physiological, Emotional, Social, Examination, and Behavioural Stress.**Findings:** The results showed that the food habits and dietary patterns of the participants had no effect on their stress levels. In general, meal-skippers had a higher mean stress score than those who did not skip meals. Frequent intake of fast foods in general ($F = 2.409^*$), exam-related stress ($F = 2.753^*$), and behaviour ($F = 2.735^*$) were found to differ significantly among participants who consumed fast foods at various frequencies (Rarely, Monthly, Fortnightly, Weekly, Once in 2 days, and Daily). Non-consumers of fast food had significantly lower stress levels than those who consumed fast food. On average, those who consume fast food once every two days and on a daily basis have greater stress levels. There were also significant differences in the mean stress scores between those who skipped meals and those who did not.**Conclusion:** There is a need to develop effective strategies for implementing traditional health-promoting yoga programmes in order to promote physical and psychological health and stress management among adolescents, with a particular focus on females.**Keywords:** Nutritional status, Underweight, Overweight, Nutrient deficiencies, Adolescent girls.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

According to Gopalan (1989), "adolescence" refers to a highly anabolic growth phase that is mediated by normal mechanisms and is characterised by exceptional growth velocities [1]. This is a significant, difficult, and fascinating time in a person's life. Adolescence is referred to as a phase of "Stress and Strom" by Stanley Hall [2]. The interval between childhood and adulthood is known as adolescence. During this time, people develop their adult identities, advance towards physical and psychological maturity, and achieve economic independence.

Early postnatal stressors can have a significant impact on a person's life and raise their chance of developing psychiatric illnesses in the future. According to Miguel Clemente et al and the Sultan Qaboos University, psychological disorders such as depression, anxiety, and stress are more common in female teenagers. A cross-sectional study by Miguel Clemente et al of sample female

adolescents in an Islamic nation revealed a negatively significant relationship ($r = -0.68$) between stress and psychological well-being.

Teenagers' health is getting more and more concerned with the topic of adolescent stress. Finding their own quiet space to unwind and recovering with family and friends, adolescents prioritised the now or the future, according to Marie Wilson's (2016) research.

Methods

The yoga summer programme conducted by a local private school drew close to 170 females (aged 10 to 19). 153 of these people offered their time to study. They underwent a nutritional assessment that included anthropometry (body mass index (BMI), waist, hip, and waist-hip ratio measurements), physiological indices (%body fat, basal metabolic rate (BMR), arterial blood pressure (systolic and diastolic pressure), pulse rate, and frequency of food

intake), among other things. using the Students' Stress Rating Scale, and "Stress Level."

Height was measured using a stadiometer closest to 0.5cm, and weight was measured using a weighing machine closer to 0.5kg (WHO/FAO, 2003). Waist and hip circumferences were measured using fibreglass tape, BMR and percent body fat (%BF) were measured using an Omron device.

Results

Table 1: Demographic Profile of the Participants

Category		Frequency	Percent
Age	10-12 years	4	1.96
	13-15 years	93	61.44
	16-18 years	49	32.68
	>18 years	7	3.92
	Total	153	100.00
Food Habit	Vegetarian	7	3.92
	Lacto vegetarian	24	9.80
	Ova-vegetarian	4	1.96
	Lacto-Ova vegetarian	23	13.73
	Non vegetarian	105	70.59
	Total	153	100.00
Meal Pattern	2 meals	11	6.54
	3 meals	93	61.44
	4 meals	40	26.80
	5 meals	9	5.22
	Total	153	100.00

Stress level of the Participants as per Stress Factors Students' Stress Rating Scale (SSRS) developed and validated by Balamurugan and Kumaran (2008) was used to find out the stress level of the participants. The data collected was subjected to ANOVA (One-way) and PostHoc test -Tukey and the details of the analysis are exhibited in this section. Physiological Stress Physiological stress was not found among the majority of the participants (41.95%) in general. However, the next majority of the participants were found to be exposed to stress rarely (28.40%).

Discussion

Adolescence is an intense anabolic period when requirements for all nutrients increases. This period is very crucial since these are formative years in the life of an individual when major physical, psychological and behavioural changes take place [3]. In the present study 34% of adolescent girls were underweight and 12% were found at high risk of overweight and obesity. Most of the girls in the study area were having normal BMI 54%. This variation is due to adequate knowledge and awareness regarding nutritional health, because majority of the girls were school going. The extent of undernutrition was slightly lower 34% in our study in comparison to 36.4% of under nutrition reported by Mukhopadhyaya A et al [4]. The correlation between nutritional status and

Table 1 reveals the Demographic profile of the participants who volunteered to participate in the study.

The majority of the girls who participated in the residential summer camp were from the age group of 13-15 years (61.44%) followed by 16-18 years (32.68%).

demographic characters are similar to the study done by Ashok T.K et al [5]. Improving the general health and nutrition of the girl child, increasing the age of marriage and subsequent child bearing along with timely and quality ante-natal care reduces the incidence of anemia, LBW babies and premature deliveries [6].

Hence there is a need for discouraging the teenage pregnancy, educating the girls on health and nutrition and prepare them for the ideal age of marriage.

Conclusion

It can be concluded that effective strategies to initiate traditional health promotive yoga programmes from early adolescence helps to promote physical and psychological well-being and stress management for the adolescents with special reference to girls.

References

1. Gopalan C. Growth of affluent Indian girls during Adolescence. Nutrition foundation of India. 1989; 8.
2. Stanley GH. Adolescence 1&2. New York. D Appleton Co. 1988.
3. Patil SN, Wasnik V, Wadke R. Health problems amongst adolescent girls in rural areas of

- Ratnagiri district of Maharashtra. Indian J of clinical and diagnostic research. 2009; (3):1784-1790.
4. Mukhopadhyay A, Bhadra M, Bose K. Anthropometric assessment of nutritional status of adolescents of Kolkata, West Bengal. J. Hum Ecol. 2005; 18(3):213-216.
 5. Ashok TK. Nutritional status of adolescent girls in rural Tamilnadu. Nat. J, Res Com. Med. 2012; (1):01-60.
 6. Saxena P, Salhan S, Chattopadhyay B, Kohli MPS, Nandan D, Adhish SV et al. Obstetric and pernatal outcome of teenage and older Primi-gravida-A restorspetive analysis. Health and population: Perspective and issues. 2010; 33(1):16-22