Evaluating the Well-being of Adolescents in Andhra Pradesh, India: A Thorough Medical Investigation of Nutrition and Habits to Improve Youth Healthcare Provision

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Abstract:

The foundation towards a better adult life is established by the well-being of adolescents, which makes it an essential aspect of the health of the community. Among the most populated countries in the entire globe, India has a sizable youthful population. Teenagers in India encounter an array of intricate health problems, with dietary habits and way of life constituting significant factors.

This comprehensive clinical study aims to assess the health status of adolescents in Andhra Pradesh, India, with a specific focus on their diet and lifestyle. The research seeks to enhance youth health services by conducting a thorough medical investigation of the nutrition choices and habits prevalent among adolescents in the region. By evaluating their well-being, this study endeavors to identify potential areas of improvement in healthcare provision for the youth population. The findings from this research will contribute to the development of targeted interventions and strategies to promote better health outcomes among adolescents in Andhra Pradesh. In an effort to enhance health care tailored to the specific needs of adolescents, the present piece examines and evaluates the impact of dietary and lifestyle choices on adolescent health in Andhra Pradesh, India. It also proposes feasible enhancement approaches. For this research study adolescents in the age group of 13 to 17 were selected from different schools in Vijayawada. Total 175, out of which 54.3% were boys and 45.7%

were girls. The results represent that 68% decides their menu by themselves, majority not doing regular physical activity, and taking only one serving of vegetables, almost eating outside food daily, though 29% of the participants were in the overweight grade 44% were able to maintain the healthy weight but experiencing Anxiety and headaches frequently.

Keywords: Adolescence, Eating Habits, life style , physical activity, Health and Nutrition

Introduction:

Adolescence is a crucial period of development marked by significant physical, cognitive, and emotional changes. During this time, individuals experience rapid growth and maturation (Oliveira et al., 2023). These changes makes adolescence critical period for optimal health outcomes. Nevertheless, it is very much important to note that this is the time if not managed well adolescents may prone to several health problems which may become chronic in the later stages. The major impact of unhealthy lifestyle are often rooted in urbanization and modernization (Sahoo, Krushnapriya, et al.2018)

The primary culprit for the health issues in the adolescence are unhealthy eating habits and sedentary lifestyle. The lifestyle disorders may contribute long – term consequences on health especially leading to the development of chronic diseases such as obesity, diabetes, and cardiovascular diseases.

Impact of unhealthy eating habits on Adolescent health:

The improper dietary habits mainly the consumption of high dense calorie processed foods and sweet beverages, insufficient intake of fruits and vegetables and excessive intake of fatty foods can have harmful effects on adolescent health. (Voráčová et al., 2015). These diet regime may lead to nutrient deficiencies, weight gain and risk of chronic diseases. Moreover these unhealthy eating habits may lead to have a negative impact on mental health and cognitive function in adolescents. The research indicates that the most urban adolescents in Andhra Pradesh state consume nutritionally deficient diets, with less focus on fruits and vegetables and overconsumption of high – calorie dense foods which are poor in micronutrients. (Rathi et al., 2018).

Current state of adolescent health in Andhra Pradesh:

The major havoc behind the health of adolescents is the rapid increase of fast-food addition. The streets and every nook and corner of Andhra Pradesh are lined with tempting

junk food options. These foods are luring younger ones into a never-ending cycle of unhealthy food choices and consumption. Schools and college canteens are flooded with unhealthy foods and sugary drinks.

Another major setback is lack of physical activity, and increasing sedentary life. (Shuvo & Biswas, 2023). The technological advancements has led students to adopt sedentary life style, screen time has increased drastically leading to prolonged sitting, these behaviours will contribute to the rising rates of obesity and chronic diseases among adolescents. Along with the obesity micronutrient deficiencies leading to Anaemia in young adolescents, hormonal imbalances increasing PCOS and infertility rates as well.

Rationale of the Study:

Teen's health is a key determinant of nations future well – being, and youth face a unique health challenge that demands immediate need and attention. The prevalence of non – communicable diseases among the teens is on the way to rise due to the shift in the dietary patterns and lifestyle changes, along with that social and cultural factor influencing the adolescent's health behaviours call for an in-depth examination of the determinants and of their choices.

The present research will address the gaps in the current literature by providing evidence – based insights into the relationship between diet and lifestyle in the Indian context. By clear cut understanding of these associations, health and policy makers can develop targeted interventions to improve the health and wellness services offered to the youth, ensuring better health outcomes and healthier future for the nation.

 In order to improve the adolescent health in Andhra Pradesh is necessary to conduct a comprehensive clinical analysis of diet and lifestyle factors which are the primary contributors to these issues.

Aim of the study:

The present study aims to analyze the specific unhealthy eating habits and sedentary behaviour patterns among adolescents in Andhra Pradesh as well as any underlying factors that contribute to the problem.

Materials and Methods:

Literature Review:

A systematic research search was conducted in relevant databases such as PubMed, Google Scholar, and Indian academic repositories, by using appropriate keywords related to

the adolescent health, lifestyle, physical activity, eating habits in India. The studies published between 2010 and the present were included and data extraction was performed to synthesize the key findings.

Quantitative Analysis:

The structured questionnaire consisting of sixteen questions was designed based on validated instruments used in similar studies. The data was collected through face – to – face interviews, to all the participants the purpose of the study was explained consent was taken from the school management and students and parents.

The entire questionnaire was divided into 4 sections

1.   Demographic information

2.   Diet and Nutrition

3.   Physical activity

4.   Influencing Factors

Statistical analysis was done by using SPSS to identify the association between diet, lifestyle and health outcomes.

Results and Discussion:

There are many factors which will influence the health of teenagers. The major factors include diet, physical activity, sleep patterns, mental health, and social media usage. The major role in teens health is diet. A well balanced and nutritious diet provides essential nutrients that supports the growth and development , boost immunity and maintain optimal body weight . And also the regular physical activity is another important factor in maintaining good health in teenagers. Engaging in regular physical activity will lead to improved cardiovascular health, and maintains a healthy weight , bones and muscles and also enhance the mental well – being. (Sampasa-Kanyinga et al., 2021)
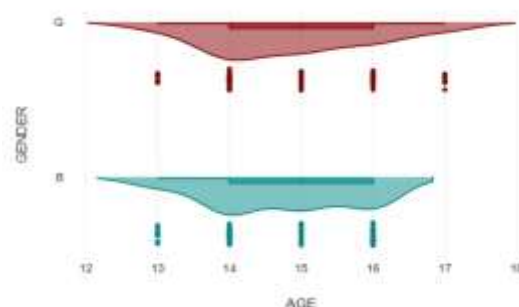
The present study results explore the facts check of health and wellness status of the teens participated.

GENDER	Age of Adolescents					Grand Total	PERCENTAGE
	13yrs	14 yrs	15 yrs	16 yrs	17 yrs		
BOYS	9	32	27	27	0	95	54.3

GIRLS	6	29	22	16	7	80	45.7
Grand Total	15	61	49	43	7	175	

Table no 1: Age and gender wise distribution of the participants

Figure 1: Showing the Age & Gender

The number of enrolled participants includes 54.3% boys, and 45.7% were girls. In the age group of 13 total 15 participants, in the age group of 14 total 61 participants, 49 participants were in the age group of 15, and 43 participants, and 7 were in the age group of 16 and 17 were consequently.

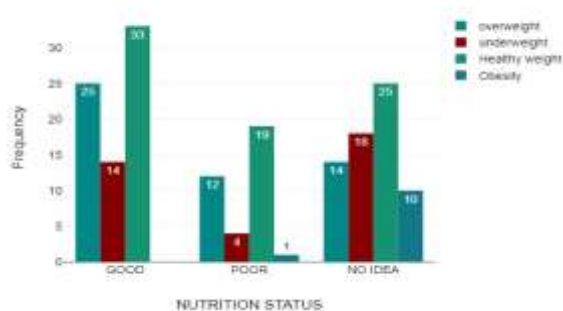**Figure 2: Showing the Nutritional Status of Adolescents**

Table no 2: Questionnaire and their results

	Frequency	Percentage (%)
1. Concerned about eating habits		
Yes	110	62.86
No	65	37.14
2. Who decides Menu		
My self	119	68

Family members	56	32
3. Will you take breakfast regularly		
No	111	63.43
Yes	64	36.57
4. Carry lunch box		
Yes	116	66.29
No	59	33.71
5. What will you take during Snack time		
Chips	48	27.43
Samosa	37	21.14
Juice	35	20
Chips, samosa	26	14.86
Milk shake	11	6.29
Biscuits	9	5.14
Cool drinki	5	2.86
Chips, Cool drink	4	2.29
6. Nutritional status		
Good	72	41.14
No Idea	67	38.29
Poor	36	20.57
7. Frequency of eating outside food		
Almost daily	81	46.29
Twice in a week	52	29.71
Once in a week	41	23.43
Very rare	1	0.57%
8. What you eat outside		
Biryani	46	26.29
Burger	41	23.43
Pizza, Burger	39	22.29
Pizza	21	12

Samosa	15	8.57
Roti, curry	13	7.43
9. Regularly physical activity		
No	113	64.57
Yes	62	35.43
10. Servings of veg/green		
2	77	44
1	76	43.43
3	22	12.57
11. Consume daily fruits		
No	101	57.71
Yes	74	42.29
12. Do you pay attention healthy food choices		
Sometime	66	37.71
No	59	33.71
Yes	50	28.57
13. Do you have any of the following		
Headache, Anxiety	67	38.29
Weakness	43	24.57
Irritability, exam fear	38	21.71
No problem	18	10.29
Stress	9	5.14
14. BMI Grade		
Healthy weight	77	44
Overweight	51	29.14
Underweight	36	20.57
Obesity	11	6.29
15. What factors do you think influence your dietary choices		
Peer influence	72	41.14
Media and advertising	50	28.57

Family preference	24	13.71
Cultural practices	15	8.57
Availability of healthy food options	14	8
16. Factors influencing physical activity		
School workload	49	28
Lack of interest/motivation, school workload	34	19.43
Lack of time, school workload	33	18.86
All of the above	26	14.86
Access to sports	25	14.29
Lack of time	5	2.86
Lack of interest/motivation	2	1.14
Lack of interest/motivation	1	0.57

Table No 3: Gender vs Age and influence of dietary choices

| Null hypotheses	Alternative hypotheses
There is no significant difference between the groups of the independent variable GENDER in relation to the dependent variable AGE.	There is a significant difference between the groups of the independent variable GENDER in relation to the dependent variable AGE.
There is no significant difference between the groups of the independent variable What factors do you think influence your dietary choices in relation to the dependent variable AGE.	There is a significant difference between the groups of the independent variable What factors do you think influence your dietary choices in relation to the dependent variable AGE.
There is no significant interaction between the two variables GENDER and What factors you think influence your dietary choices in relation to the dependent variable AGE.	There is a significant interaction between the two variables GENDER and What factors do you think influence your dietary choices in relation to the dependent variable AGE.

Table 4: Mean & Standard Deviation on Influence of Dietary Choices

GENDER	What factors do you think influence your dietary choices	n	Mean	Std. Deviation
Boys	Peer influence	45	14.89	0.93
	Family preference	13	14.08	1.04
	Media and advertising	26	14.96	0.92
	Cultural practices	3	15	1
	Availability of healthy food options	8	14.38	0.92
Girls	Peer influence	27	14.96	0.94
	Family preference	11	14.27	0.9
	Media and advertising	24	14.88	1.08
	Cultural practices	12	15	1.35
	Availability of healthy food options	6	15.17	1.6

Table No 5: Influencing factor on Dietary Choice

What factors do you think influence your dietary choices	Type III Sum of Squares	df	Mean Squares	F	p	Eta$_p^2$
	0.48	1	0.48	0.46	.499	0
Boys	12.02	4	3.01	2.9	.023	0.07
Girls	2.09	4	0.52	0.5	.733	0.01
Error	170.81	165	1.04			

Figure 3: Mediation Analysis showing the Influence of Dietary Choices
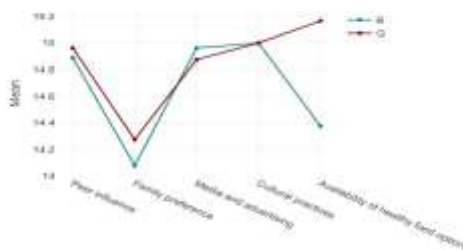
The mediation analysis was conducted to identify the relationship between the factors influencing physical activity, Age and BMI

Independent variable = Age

Dependent variable = BMI

Moderator = Factors influencing physical activity

Table No 6: Total effect of X on Y

Effect	SE	t	p
-0.09	0.13	-0.66	.508

The "SE" (standard error) of the coefficient is 0.13, which indicates the uncertainty or variability associated with the estimated effect. A smaller SE indicates a more precise estimate, while a larger SE suggests greater uncertainty.

The "t" value represents the calculated t-statistic, which is obtained by dividing the coefficient (-0.09) by its standard error (0.13). In this case, the t-value is -0.66.

The "p" value, denoted as ".508", represents the probability of obtaining a t-value as extreme as the observed one (in absolute value) if the null hypothesis were true. In statistical hypothesis testing, a p-value below a certain significance level (usually 0.05) indicates that the effect is statistically significant, meaning we have evidence to reject the null hypothesis (that there is no effect) in favor of the alternative hypothesis (that there is an effect). Conversely, a p-value above the significance level suggests that the effect is not statistically significant, and we fail to reject the null hypothesis.

Given the data presented, the coefficient of -0.09 suggests a negative relationship between variable X and variable Y. However, the t-value of -0.66 and the associated p-value of 0.508 indicate that the observed effect is not statistically significant at the conventional significance level of 0.05.

Table No 7: Direct effect of X on Y

Effect	SE	t	p
-0.08	0.13	-0.63	.53

The "SE" (standard error) of the coefficient is 0.13, which indicates the uncertainty or variability associated with the estimated direct effect. A smaller SE suggests a more precise estimate, while a larger SE indicates greater uncertainty.

The "t" value represents the calculated t-statistic, which is obtained by dividing the coefficient (-0.08) by its standard error (0.13). In this case, the t-value is -0.63.

The "p" value, denoted as ".53", represents the probability of obtaining a t-value as extreme as the observed one (in absolute value) if the null hypothesis were true.In statistical hypothesis testing, a p-value below a certain significance level (usually 0.05) indicates that the effect is statistically significant, meaning we have evidence to reject the null hypothesis (that there is no direct effect) in favor of the alternative hypothesis (that there is a direct effect). Conversely, a p-value above the significance level suggests that the effect is not statistically significant, and we fail to reject the null hypothesis.

Given the data presented, the coefficient of -0.08 suggests a negative direct relationship between variable X and variable Y. However, the t-value of -0.63 and the associated p-value of 0.53 indicate that the observed direct effect is not statistically significant at the conventional significance level of 0.05.

Table No 8: Indirect effect of X on Y

Effect	SE	t	p
0	0.02	-0.3	.234

The "SE" (standard error) of the coefficient is 0.02, which indicates the uncertainty or variability associated with the estimated indirect effect. A smaller SE suggests a more precise estimate, while a larger SE indicates greater uncertainty.

The "t" value represents the calculated t-statistic, which is obtained by dividing the coefficient (0) by its standard error (0.02). In this case, the t-value is 0.3.

The "p" value, denoted as ".234", represents the probability of obtaining a t-value as extreme as the observed one (in absolute value) if the null hypothesis were true. In statistical hypothesis testing, a p-value below a certain significance level (usually 0.05) indicates that

the effect is statistically significant, meaning we have evidence to reject the null hypothesis (that there is no indirect effect) in favor of the alternative hypothesis (that there is an indirect effect). Conversely, a p-value above the significance level suggests that the effect is not statistically significant, and we fail to reject the null hypothesis.

Given the data presented, the coefficient of 0 suggests that there is no observed indirect effect of variable X on variable Y. The t-value of 0.3 and the associated p-value of 0.234 indicate that the observed indirect effect is not statistically significant at the conventional significance level of 0.05.

Table No 9: Meals per day and servings of veggies and green leafy vegetables

Null hypothesis	Alternative hypothesis
There is no difference between the 3 categories of the independent variable servings of vegg/green with respect to the dependent variable MEALS PER DAY.	There is a difference between the 3 categories of the independent variable servings of vegg/green with respect to the dependent variable MEALS PER DAY.

Analysis of variance

A one-factor analysis of variance has shown that there is no significant difference between the categorical variable servings of vegg/green and the variable MEALS PER DAY $F = 0.61$, $p = .544$ Thus, with the available data, the null hypothesis is not rejected.

MEALS PER DAY by servings of vegg/green
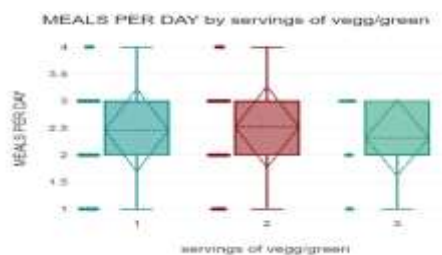
Discussion:

The primary focus should be on educating young individuals about making healthy choices. Raising awareness and providing essential information about nutrition play a crucial role. Additionally, creating an environment that offers easy access to nutritious food is essential. Transforming gaming areas into sports fields and encouraging youth to be more

active can have a positive impact. Utilizing positive peer pressure can also be beneficial, where friends influence each other to make healthier decisions.

To facilitate positive change, it is important to establish safe spaces for open discussions and provide support and encouragement. Mental health should not be ignored, and efforts to destigmatize mental health issues and offer counseling and therapy services are crucial to support the young population.

Conclusion:

In conclusion, a comprehensive analysis of diet and lifestyle is vital for enhancing adolescent health in Andhra Pradesh. Addressing key areas such as nutrition, physical activity, and mental well-being, along with implementing effective strategies, can significantly improve youth health services and contribute to a healthier future. Let us work together to make a positive difference in the lives of these young individuals during this phase of growth and exploration.

During adolescence, young individuals may experience confusion, peer pressure, lack of awareness, and a desire to fit in. Unfortunately, the consumption of endless junk and fast foods during this phase can lead to serious health issues like obesity, diabetes, and heart problems.

The current study identifies major health setbacks among adolescents, including excessive consumption of junk food, sedentary lifestyles, anxiety, and disregarding family input when deciding their diet. Furthermore, there is a concerning trend of insufficient intake of vegetables and fruits, leading to micronutrient deficiencies.

Despite being health-conscious due to peer pressure and media influence, teens still struggle with physical inactivity, which makes them more susceptible to obesity and related health disorders.

To improve the situation, it is essential to educate and empower young individuals to make healthier choices. Raising awareness about nutrition and promoting easy access to nutritious food is crucial. Encouraging physical activity and using positive peer influence can also contribute positively to their well-being.

Creating safe spaces for open discussions and providing support and counseling services are essential steps to address mental health issues. By tackling these challenges comprehensively, we can enhance the health and well-being of adolescents in Andhra Pradesh, paving the way for a healthier future. Let's join forces to make a positive impact on the lives of these young individuals.

Recommendations:

To bring about a transformation in youth health and wellness services, it is crucial to prioritize counseling and awareness sessions focused on health and wellness. Through education, we can foster a healthier community.

• Community-level support should be emphasized to create a conducive environment for promoting youth health.

• Junk foods should be prohibited on college and school premises to encourage healthier eating habits.

• Regular physical activity should be promoted to enhance overall well-being.

• Periodical health check-ups are essential to identify and address issues such as obesity and anemia.

• Ensuring access to healthy and nutritious food is vital for the well-being of the youth.

By implementing these measures, we can work towards improving the health and wellness of young individuals, fostering a healthier and more vibrant community.

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