# "A Cross-sectional study on Knowledge & Attitude of Undergraduate, Adolescent girls regarding Diet & Body Image", Jammu and Kashmir

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**Abstract: The adolescence offers a unique opportunity for health promotion because it is a formative stage. For a healthy life nutrition is also an important factor. Adolescence is a critical period marked by rapid physical, emotional, and psychological changes. Body image and dietary habits formed during this phase can significantly influence long-term health outcomes.[1] The primary aim of this study was to assess the knowledge & attitude of adolescent girls regarding diet & body image and find out the correlation between knowledge and attitude levels. Materials & Method: 100 undergraduate adolescent girls 'belonging to the age group (15-21 Yrs.) from a degree college were enrolled using a simple random technique. The tools used for data collection were structured knowledge questionnaire and attitude scale. Data analysis, both descriptive & inferential statistics were performed. Results: The findings of study revealed that the mean knowledge score was 13.2 ± 3.4 (out of 20), and the mean attitude score was 42.5 ± 6.8 (out of 60). A moderate positive correlation (r = 0.46, p < 0.01) was found between knowledge and attitude scores. Conclusion: Students with higher knowledge tended to have more positive attitudes toward healthy diet and body image. Key words: Knowledge, Attitude, Diet, Body image, Adolescent girls, College, Growth and Development, Correlation study.**

## INTRODUCTION

Adolescent refers to long traditional period involving physical, psychological, cognitive & social transformation. one in every five people in the world is an adolescent.[2] It is the period which can shape up healthy behavior in adolescents. Because it is the time to prepare adolescent girls for nutritional demands of pregnancy & lactation. The nutritional status and development of adolescent girls are related to their nutritional requirement, dietary intake, dietary practices, cultural practices, body image satisfaction & meal patterns.[3] The total nutritional requirement for adolescent girl is 2200 caloric of energy (25% fat, 40-60 gm. Protein, 1200 gm. Calcium, 12-15 mg. Iron etc). Diet of Indian adolescent girls are inadequate both in term of quality & quantity. They mainly consume cereal based food, but deficient in legumes, animal food & green leafy vegetables. Harmful dietary practices including dieting & body image dissatisfaction are factors influencing this behavior.[4] The dynamic perception of one's physical appearance, sensations, and movements is known as body image. It is influenced by perception, emotion, and bodily sensations. It is also dynamic and subject to change depending on the surroundings, mood, and bodily experiences. Modified meal patterns, shifting food consumption, and body weight concerns are the three main factors influencing food intake. Girls in adolescence often perceive themselves as fatty than they really are and start dieting. The negative body image of adolescent girls leads to excessive dieting, which can cause delayed growth and development. Extreme food intake reduction and rapid weight loss can have negative consequences like subsequent weight re-gain, lowered metabolism, eating disorders, depression, reduced sex drive, fatigue, irritability, fainting, sinus problems, rashes, acidosis, constipation, seizures and malnutrition. Although, most of the attitudes and behavior related to nutrition go unnoticed, they can bear significant psychological and medical risks.[5] Body image dissatisfaction and poor dietary habits are increasingly prevalent among adolescent girls, often influenced by media, peer pressure, and cultural norms.[6,7] A cross-sectional study conducted in Sikkim, observed that girls from families with higher economic status are about two times more likely to report dissatisfaction with their body image and they go for dieting.[8] Another survey revealed that a high percentage of college adolescent girls consider themselves as overweight or obese, despite having BMI in a normal range. Dieting was

practiced by 43% and 32 % were avoiding weight gain, despite 78 % having a healthy BMI. These Adolescents classify themselves as overweight or obese (27 %) while only 11 % were actually in these categories.[9] Furthermore, Studies have shown that sociocultural factors, including peer and parental influence, play a significant role in shaping body image perceptions.[10,11] Moreover, disordered eating behaviors often emerge during adolescence, with long-term implications for physical and mental health.[10,11]

## OBJECTIVES

1. To assess the knowledge and attitude of undergraduate adolescent girls regarding diet and body image.
2. To find out the correlation between knowledge and attitude of undergraduate adolescent girls regarding diet and body image.

## HYPOTHESIS

(tested at 0.05 level of significance).

$H_1$: There is a significant positive relationship between knowledge and attitude of adolescent girls regarding diet and body image.

## METHODOLOGY

A non-experimental, cross sectional research design was adopted to assess the knowledge the attitude of adolescent girls regarding diet & body image. A total sample of 100 adolescent girls belonging to the age group 17-21 years from a degree college in Jammu, Jammu and Kashmir were enrolled, using a simple random sampling procedure. The data was collected using Demographic Performa, Structured Knowledge Questionnaire and Attitude Scale to assess the knowledge & attitude levels of adolescent girls. Data was collected for a period of one month from October 01 to 31st, 2018. The Descriptive statistics was used to examine the sample characteristics and Inferential statistics such as Pearsons's Coefficient of correlation (r) was used to determine the relationship between the research variables.

Tool for Data Collection

Tool A: Demographic Performa.

Tool B: Structured Knowledge Questionnaire with 20 multiple-choice questions.

Tool C: Attitude Scale, 15 Likert-scale items (score range: 15–75).

Data Analysis

Data was analysed using SPSS v22. Both Descriptive statistics like Mean, SD, frequency, percentage and Inferential statistics such as Pearson's correlation coefficient were analysed.

Limitation of study

The study was limited to 100 samples.

The study was limited to a specific geographical area of Jammu.

The study was limited to the age group of 17-21 years.

Self-reported data may be subject to bias.

## RESULT

## DESCRIPTIVE STATISTICS

### Section I: Description of Sample Characteristics

Table 01: Frequency & percentage distribution of demographic variables of adolescent girls.

| Sl. No. | Demographic Variables | Frequency | Percentage (%) |
|---|---|---|---|
| 01 | Age | | |
| | 17-18 Yrs. | 28 | 28% |
| | 19-20 Yrs. | 52 | 52% |
| | 21 Yrs. | 20 | 20% |
| 02 | Religion | | |
| | Hindu | 38 | 38% |
| | Muslim | 42 | 42% |
| | Others | 20 | 20% |
| 03 | Residence | | |
| | Rural | 40 | 40% |

| | | | |
|---|---|---|---|
| | Urban | 60 | 60% |
| 04 | Family income | | |
| | < ₹10,000 | 35 | 35% |
| | ₹10,001-20,000 | 45 | 45% |
| | > ₹20,000 | 20 | 20% |
| 05 | Stream of Education | | |
| | Science/B.Sc. | 41 | 41% |
| | Arts/B.A. | 28 | 28% |
| | Commerce/B.Com. | 31 | 31% |
| 06 | Dietary Pattern | | |
| | Vegetarian | 19 | 19% |
| | Non-vegetarian | 81 | 81% |
| 07 | BMI Category | | |
| | Underweight (<18.5) | 22 | 22% |
| | Normal (18.5–24.9) | 58 | 58% |
| | Overweight (25–29.9) | 15 | 15% |
| | Obese (≥30) | 5 | 5% |
| 08 | Mother's Education | | |
| | Elementary | 18 | 18% |
| | Up to secondary school | 50 | 50% |
| | Graduate and above | 32 | 32% |
| 09 | Father's Education | | |
| | Up to secondary school | 40 | 40% |
| | Graduate and above | 60 | 60% |
| 10 | Media Exposure | | |
| | < 01 hr. | 20 | 20% |
| | 1-2 hrs. | 45 | 45% |
| | > 02 hrs. | 35 | 35% |

Interpretation: Majority of participants belonged to the normal BMI category, but 20% were either overweight or obese, relevant for body image concerns. Media exposure was high among 80% of participants, which may influence body image perceptions and dietary behaviors. Most mothers had secondary education or less, which may affect nutritional guidance at home. The educational stream distribution allows for subgroup analysis, especially between science and non-science students regarding health literacy.

Section II: Distribution of Knowledge & Attitude Levels of Undergraduate, Adolescent Girls

Table 02: Frequency and percentage distribution, Mean, and SD of samples according to their knowledge level. (N=100)

| Knowledge Level | Score | Frequency | Percentage | Mean ±SD | Minimum | Maximum |
|---|---|---|---|---|---|---|
| Poor | 0-9 | 18 | 18 % | 13.2±3.4 | 05 | 20 |
| Moderate | 10-14 | 52 | 52% | | | |
| Good | 15-20 | 30 | 30% | | | |

Table 03: Frequency and percentage distribution, Mean, and SD of samples according to their Attitude level. (N=100)

| Attitude Level | Score | Frequency | Percentage | Mean ±SD | Minimum | Maximum |
|---|---|---|---|---|---|---|
| Negative | 15-34 | 22 | 22 % | 42.5±6.8 | 25 | 60 |
| Neutral | 35-49 | 48 | 48% | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Positive | 50-75 | 30 | 30% | | | |

INFERENTIAL STATISTICS

Section III: Subgroup Comparison of Knowledge Scores of Adolescent girls

Table 04: Mean SD and ANOVA (F) test value of knowledge scores by BMI Category. (N=100)

| BMI Category | n | Mean ± SD | F test Value | df | P value | Interpretation |
|---|---|---|---|---|---|---|
| Underweight (<18.5) | 22 | 12.1 ± 3.2 | 2.94* | (3,96) | 0.037 | Below average knowledge |
| Normal (18.5–24.9) | 58 | 13.8 ± 3.3 | | | | Highest average knowledge |
| Overweight (25–29.9) | 15 | 13.0 ± 3.5 | | | | Moderate knowledge |
| Obese (≥30) | 5 | 11.6 ± 2.9 | | | | Lowest knowledge scores |

*Significant at p<0.05; Interpretation: Significant difference in knowledge scores across BMI categories. Girls with normal BMI had significantly better knowledge about diet and body image, suggesting a link between awareness and healthy weight status.

Table 05: Mean SD and ANOVA (F) test value of knowledge scores by Media Exposure. (N=100)

| Media Exposure (daily) | n | Mean ± SD | F test Value | df | P value | Interpretation |
|---|---|---|---|---|---|---|
| <1 hours | 20 | 14.2 ± 3.1 | 3.88* | (2,97) | 0.024 | Highest knowledge scores |
| 1–2 hours | 45 | 13.4 ± 3.2 | | | | Moderate knowledge |
| >2 hours | 35 | 12.3 ± 3.6 | | | | Lowest knowledge scores |

*Significant at p<0.05; Interpretation: Significant difference in knowledge scores by media exposure categories. Excessive media exposure may correlate with misinformation or superficial understanding of diet and body image.

Table 06: Mean SD and ANOVA (F) test value of knowledge scores by Stream of Education. (N=100)

| Stream of Education | n | Mean ± SD | F test Value | df | P value | Interpretation |
|---|---|---|---|---|---|---|
| Arts | 40 | 12.6 ± 3.5 | 4.21* | (2,97) | 0.018 | Highest knowledge scores |
| Science | 35 | 14.1 ± 3.1 | | | | Moderate knowledge |
| Commerce | 25 | 13.0 ± 3.2 | | | | Lowest knowledge scores |

*Significant at p<0.05; Interpretation: Statistically significant difference in knowledge scores; Science students demonstrated significantly better knowledge, likely due to curriculum exposure to health and biology.

Section IV: Subgroup Comparison of Attitude Scores of Adolescent girls

Table 07: Mean SD and ANOVA (F) test value of Attitude scores by BMI Category. (N=100)

| BMI Category | n | Mean ± SD | F test Value | df | P value | Interpretation |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Underweight (<18.5) | 22 | 39.8 ± 6.2 | 3.21* | (3,96) | 0.027 | Slightly lower attitude scores |
| Normal (18.5–24.9) | 58 | 43.7 ± 6.5 | | | | Highest average attitude score |
| Overweight (25–29.9) | 15 | 41.2 ± 7.1 | | | | Moderate attitude scores |
| Obese (≥30) | 5 | 37.6 ± 5.9 | | | | Lowest attitude scores |

*Significant at p<0.05; Interpretation: Significant difference in attitude scores across BMI categories.
Girls with normal BMI had significantly more positive attitudes toward diet and body image compared to underweight and obese peers.

Table 08: Mean SD and ANOVA (F) test value of Attitude scores by Media Exposure. (N=100)

| Media Exposure (daily) | n | Mean ± SD | F test Value | df | P value | Interpretation |
|---|---|---|---|---|---|---|
| <1 hours | 20 | 45.1 ± 6.0 | 4.12* | (2,97) | 0.019 | Most positive attitudes |
| 1–2 hours | 45 | 42.8 ± 6.7 | | | | Moderate attitudes |
| >2 hours | 35 | 40.3 ± 7.2 | | | | Lower attitude scores |

*Significant at p<0.05; Interpretation: Significant difference in attitude scores by media exposure. Higher media exposure is associated with more negative attitudes, possibly due to unrealistic beauty standards portrayed in media.

Table 09: Mean SD and ANOVA (F) test value of Attitude scores by Stream of Education. (N=100)

| Stream of Education | n | Mean ± SD | F test Value | df | P value | Interpretation |
|---|---|---|---|---|---|---|
| Arts | 40 | 41.1 ± 6.9 | 2.67 | (2,97) | 0.075 | Moderate attitude scores |
| Science | 35 | 44.3 ± 6.2 | | | | Most positive attitudes |
| Commerce | 25 | 41.9 ± 7.0 | | | | Slightly above average |

*Not Significant, p>0.05; Interpretation: Science students showed slightly more positive attitudes, possibly due to greater health literacy, but the difference was not statistically significant.

Section V: Correlation between Knowledge and Attitude levels.

Table 10: Pearson's Correlation between knowledge and attitude scores of undergraduate adolescent girls regarding diet and body image. (N=100)

| Variables | Pearson's r | p-value | Interpretation |
|---|---|---|---|
| Knowledge vs Attitude | 0.46** | < 0.01 | Moderate positive correlation |

** Significant at p<0.01 level. As knowledge about diet and body image increases, attitude becomes more positive.

## DISCUSSION

The study revealed that while most adolescent girls had moderate knowledge, their attitudes varied widely. The positive correlation suggests that improving knowledge may lead to healthier attitudes. These findings align with previous studies emphasizing the role of education in shaping body image perceptions and dietary behaviors.[12]

Peer influence and media exposure have been shown to contribute to body dissatisfaction and unhealthy

eating patterns.[13,14] School-based programs and peer-led initiatives have demonstrated success in promoting positive body image.[13]

## CONCLUSION

Adolescent girls in Rajouri exhibit moderate knowledge levels and mixed attitudes toward diet and body image. Educational interventions focusing on nutrition, self-esteem, and media literacy are recommended to promote healthier perspectives. The findings highlight the need for targeted educational interventions to improve awareness and foster healthy attitudes among adolescent girls regarding diet and body image.

## RECOMMENDATIONS

- The study can be replicated on a larger sample for generalization of findings
- A similar comparative study can be conducted among male and female adolescents.
- A quasi-experimental study can be performed using teaching strategies such as structured teaching programme or self-instructional modules.
- Integrating body image and nutrition education into college health programs and curriculum.
- Conducting workshops involving dietitians and psychologists.
- Promoting peer led awareness campaigns and health education programmes.

## ETHICAL IMPLICATIONS

After obtaining Formal permissions from the authorities concerned, an informed consent was obtained from the study participants. The researchers ensured full confidentiality during the conduct of the research.

## CONFLICTS OF INTEREST

Nil

## BUDGET

Self, no funding received.

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