

A Descriptive Study to Assess Knowledge and Practices Regarding Energy Drink Consumption among Adolescents in Selected Junior Colleges of Pune City

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ABSTRACT

Energy drinks are commercially available beverages containing caffeine, sugar, taurine, guarana, and other stimulants that are widely consumed by adolescents. Adolescence is a crucial developmental period during which lifestyle habits are formed, making this population particularly vulnerable to the potential adverse effects of energy drink consumption. Despite their increasing availability and aggressive marketing, adolescents often lack adequate awareness regarding the ingredients and health risks associated with these beverages.

The present study aimed to assess the level of knowledge and practices regarding energy drink consumption among adolescents in selected junior colleges of Pune City and to determine the association between knowledge, practices, and selected demographic variables. A quantitative, non-experimental descriptive research design was adopted. The study was conducted among 262 adolescents aged 16–18 years who were selected using a simple random sampling technique. Data were collected using a self-structured questionnaire consisting of demographic variables, knowledge-related questions, and practice-based items. Descriptive and inferential statistics were used for data analysis.

The findings revealed that 56.5% of adolescents had moderate knowledge, 40.1% had poor knowledge, and only 3.4% demonstrated good knowledge regarding energy drinks. All participants (100%) exhibited healthy practices related to energy drink consumption. Statistical analysis showed no significant association between knowledge and variables such as age, gender, standard of study, and father's education. However, monthly family income showed a statistically significant association with knowledge levels.

The study concludes that although adolescents demonstrated healthy practices, their knowledge regarding energy drinks remained inadequate. The findings highlight the need for structured health education programmes focusing on the ingredients, recommended intake, and potential health risks of energy drinks to promote informed and safe behavioural choices among adolescents.

Keywords: Energy drinks, Adolescents, Knowledge, Practices, Junior college students

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INTRODUCTION

Energy drinks are commercially marketed beverages formulated to enhance alertness and energy through high caffeine content, sugar, and other stimulants such as taurine and guarana. [1–3]

Adolescence is a critical phase of physical, psychological, and social development during which dietary habits and lifestyle behaviours are established. Excessive consumption of energy drinks during this stage may lead to adverse health effects, including palpitations, sleep disturbances, anxiety, gastrointestinal discomfort, and potential caffeine dependence. [3,4]

In India, especially in urban areas, energy drink consumption among college-going adolescents is increasing. However, there is limited empirical evidence regarding adolescents' knowledge and consumption practices related to energy drinks. Many adolescents perceive energy drinks as harmless or beneficial for academic performance and physical endurance, which may place them at risk of adverse health outcomes. [5,6]

Therefore, assessing adolescents' knowledge and practices related to energy drink consumption is

essential for identifying gaps in awareness and guiding preventive health education. Such assessment can support targeted health education and early preventive interventions among adolescents. [1,6]

Need of Tthe Study

The increasing availability and aggressive marketing of energy drinks have led to a rise in their consumption among adolescents, a population particularly sensitive to the effects of caffeine and sugar. Adolescents' consumption behavior is influenced by peer pressure, academic stress, lifestyle patterns, and socioeconomic factors. [4,7]

Despite international evidence highlighting the adverse effects of excessive energy drink consumption, Indian data—especially among adolescents—remain limited. Many adolescents hold misconceptions that energy drinks provide sustained energy and improve health or academic performance. Such beliefs may encourage unsafe consumption patterns. [5,8]

Assessing adolescents' knowledge and practices regarding energy drink consumption will help

identify existing knowledge gaps and behavioral patterns. The findings can be utilised to develop targeted health education programmes, promote healthy beverage choices, and prevent adverse health outcomes. [1,9]

Aim of the Study

To assess the knowledge and practices regarding energy drink consumption among adolescents in selected junior colleges of Pune City.

Objectives

1. To assess the level of knowledge regarding energy drinks among adolescents.
2. To identify the practices related to energy drink consumption among adolescents.
3. To find the association between knowledge, practices, and selected demographic variables.

RESEARCH METHODOLOGY

The present study adopted a quantitative, non-experimental descriptive research design to assess knowledge and practices regarding energy drink consumption among adolescents. The study was conducted among 262 adolescents aged 16–18 years from selected junior colleges in Pune City. Participants were selected using a simple random sampling technique. Data were collected using a self-structured questionnaire consisting of demographic variables, knowledge-related questions, and a practice-related checklist.

The reliability of the tool was established using the test–retest method, with a Karl Pearson correlation coefficient of $r = 0.80$. A pilot study was conducted among 27 adolescents to assess the feasibility and practicality of the study, and the methodology was found to be suitable for the main study. Data were analyzed using descriptive statistics (frequency and percentage) and inferential statistics (chi-square test).

RESULTS

Table 1. Distribution of adolescents according to selected demographic characteristics (n = 262)

Variable	Category	n (%)
Age (years)	16	46 (17.6%)
	17	140 (53.4%)
	18	76 (29.0%)
Gender	Female	102 (38.9%)
	Male	160 (61.1%)
Class (Standard)	11th	80 (30.5%)
	12th	182 (69.5%)
Type of College	Private	262 (100%)
Father's Education	Illiterate	30 (11.5%)
	Primary	36 (13.7%)
	Secondary	90 (34.4%)
	Higher Secondary	61 (23.3%)

Variable	Category	n (%)
Monthly Income (₹)	Graduate+	45 (17.2%)
	<10,000	10 (3.8%)
	10,001–25,000	97 (37.0%)
	25,001–40,000	108 (41.2%)
	>40,000	47 (17.9%)

The data presented in Table 1 show that, among the 262 adolescents, the majority, **140 (53.4%)**, were aged 17 years, followed by **76 (29.0%)** aged 18 years and **46 (17.6%)** aged 16 years. Regarding gender, **160 (61.1%)** participants were male, while **102 (38.9%)** were female. With respect to educational standard, the majority, **182 (69.5%)**, were studying in the 12th standard, whereas **80 (30.5%)** were studying in the 11th standard.

All **262 (100%)** participants were enrolled in private junior colleges. Regarding fathers' educational qualifications, the largest proportion, **90 (34.4%)**, had completed secondary education, followed by **61 (23.3%)** with higher secondary education, **45 (17.2%)** with graduate or higher education, **36 (13.7%)** with primary education, and **30 (11.5%)** who were illiterate.

In terms of monthly family income, **108 (41.2%)** participants belonged to families earning ₹25,001–40,000 per month, followed by **97 (37.0%)** earning ₹10,001–25,000, **47 (17.9%)** earning more than ₹40,000, and **10 (3.8%)** earning less than ₹10,000 per month. Overall, the sample predominantly comprised 17-year-old male adolescents studying in the 12th standard and belonging to middle-income families.

Table 2. Association between selected demographic variables and knowledge level regarding energy drinks (n = 262)

Demographic Variable	χ^2	df	p-value	Result
Age	7.69	4	0.1036	NS
Gender	0.0757	2	0.9628	NS
Standard	1.56	2	0.4589	NS
Type of College	—	—	—	Not applicable
Father's Education	5.80	8	0.6695	NS
Monthly Income	68.90	6	0.000	Significant

Table 2 shows that the association between demographic variables and knowledge scores revealed that **age** ($\chi^2 = 7.69$, $p = 0.1036$), **gender** ($\chi^2 = 0.0757$, $p = 0.9628$), **standard of study** ($\chi^2 = 1.56$, $p = 0.4589$), and **father's education** ($\chi^2 = 5.80$, $p = 0.6695$) were **not significantly** associated with knowledge scores. **Type of college** was not applicable because all participants belonged to private colleges.

However, **monthly family income** ($\chi^2 = 68.90$, $p = 0.000$) showed a **highly significant association** with knowledge scores, indicating that adolescents' knowledge varied according to their family income. Figure 1. Distribution according to practice level
The figure shows that, among the **262 adolescents**, **262 (100%)** demonstrated **healthy practices** regarding energy drink consumption, while **none (0%)** demonstrated unhealthy practices. This indicates that all participants reported practices categorised as healthy according to the study's practice assessment checklist. Thus, although a considerable proportion of adolescents had poor or moderate knowledge regarding energy drinks, their reported practices were favourable.

DISCUSSION

The present study assessed knowledge and practices regarding energy drink consumption among 262 adolescents aged 16–18 years in selected junior colleges of Pune City. The findings showed that 56.5% of adolescents had moderate knowledge, 40.1% had poor knowledge, and only 3.4% had good knowledge regarding energy drinks. These findings indicate an important knowledge gap regarding the ingredients, recommended intake, and potential health effects of energy drinks, despite their increasing availability and popularity among young people.

The findings are comparable with those of Hossain et al. (2025), who conducted a cross-sectional study among 226 undergraduate medical students in New Delhi. In their study, 59.7% of consumers were aware of the ingredients of energy drinks and 60.4% were aware of their harmful effects, indicating that a substantial proportion of young people still lacked complete knowledge regarding these beverages.[10] The similarity with the present study supports the need for systematic health education, although direct comparison should be made cautiously because the participants and knowledge-assessment tools differed. Hossain et al. also reported that 62% of participants consumed energy drinks and that gender and year of study were significantly associated with several knowledge-related variables.[10]

In the present study, all 262 adolescents (100%) demonstrated healthy practices regarding energy drink consumption. This finding is favourable but should be interpreted cautiously because practice was assessed using the study-specific checklist and may have been influenced by self-reporting, social desirability, parental supervision, or institutional restrictions. The contrast between moderate-to-poor knowledge and apparently healthy practices suggests that favourable behaviour may not necessarily reflect adequate understanding of health risks.

The present study further found a highly significant association between monthly family income and knowledge level ($\chi^2 = 68.90$, $p < 0.001$), whereas age, gender, standard of study, and father's education

were not significantly associated with knowledge. This finding suggests that socioeconomic circumstances may influence adolescents' access to information and health resources. Therefore, structured health education in junior colleges, with emphasis on caffeine content, ingredients, adverse effects, and safe beverage choices, is recommended. Interestingly, all participants demonstrated healthy practices. This may be attributed to parental supervision, institutional restrictions, fear of side effects, and limited purchasing capacity. This contrasts with findings from Western studies, which report higher consumption rates among adolescents. The significant association between monthly income and knowledge suggests that socioeconomic status may influence access to health information and awareness. Adolescents from higher-income families may have better exposure to educational resources and parental guidance.

CONCLUSION

The present study concludes that adolescents in selected junior colleges of Pune City had predominantly moderate knowledge regarding energy drink consumption. Among the 262 participants, 56.5% demonstrated moderate knowledge, 40.1% had poor knowledge, and only 3.4% had good knowledge, indicating considerable gaps in understanding the ingredients, recommended intake, and potential health effects of energy drinks. Despite the knowledge gaps, all participants (100%) demonstrated healthy practices regarding energy drink consumption. However, the difference between knowledge and practice highlights the need to strengthen adolescents' understanding of the potential risks associated with energy drinks so that healthy practices can be sustained through informed choices.

A highly significant association was found between monthly family income and knowledge level ($\chi^2 = 68.90$, $p < 0.001$), while no significant association was observed with age, gender, standard of study, or father's education. These findings emphasized the importance of accessible and structured health education for adolescents across different socioeconomic backgrounds.

Nurses, teachers, and other health professionals should incorporate evidence-based education regarding caffeine, ingredients, adverse effects, and healthier beverage choices into adolescent health. Future studies with larger and more diverse samples, validated tools, and longitudinal designs are recommended to assess knowledge and actual consumption behavior and to evaluate the effectiveness of educational interventions.

Conflict of Interest: The authors declare no conflict of interest.

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