

Patterns, Perceptions, and Practices: An Empirical Investigation of Supplement Use

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ABSTRACT

This study investigates the awareness, attitudes, and consumption patterns of dietary supplements among Indian youth aged 18–30 across Rajasthan and Maharashtra. Based on responses from 578 participants, findings reveal high awareness but limited knowledge of supplement safety, regulation, and dosage. Social media, peers, and influencers emerged as key motivators, overshadowing professional medical advice. Protein, multivitamin, and herbal supplements were most commonly used. Despite positive perceptions of benefits, misuse and misinformation remain prevalent. The study emphasizes the need for stricter regulation, educational initiatives, and ethical digital marketing to promote informed and responsible supplement use.

Keywords: Dietary Supplements, Indian Youth, Awareness, Consumption Patterns, Social Media Influence, Nutraceuticals, Health Education, Regulation, Wellness Behavior

Introduction

The global surge in health consciousness, driven by both the wellness movement and the digital health economy, has significantly influenced the use of dietary supplements among young adults. Particularly in India, the intersection of increased urbanization, exposure to Western health trends, and the booming nutraceutical market has made dietary supplements more accessible than ever before (Dwyer, Coates, & Smith, 2018). Young individuals, especially those between the ages of 18 to 30, are among the most active consumers, often viewing supplements as essential components of a healthy and aspirational lifestyle (Bailey et al., 2013).

While the dietary supplement industry promises health benefits ranging from immunity enhancement to muscle development, there

remains an alarming gap between perception and informed use. The Indian market is flooded with both regulated and unregulated products, and the lack of stringent awareness mechanisms exposes young consumers to both overconsumption and misuse (Kaur & Walia, 2017). The growing popularity of influencers, social media marketing, and gym culture further complicates this behavioral landscape, often prioritizing aesthetics and performance over scientific validation (Sharma & Gopalkrishnan, 2022).

Empirical evidence suggests that while awareness levels are high, the depth of knowledge regarding appropriate use, possible side effects, interactions with medications, and regulatory oversight is worryingly low (Gupta & Jain, 2020; Goyal & Bhattacharya, 2021). This

study seeks to bridge this knowledge gap by investigating patterns of consumption, perceptions shaped by societal and digital factors, and actual practices among Indian youth. The research is grounded in primary data collected from 578 respondents across Rajasthan and Maharashtra using both digital (Google Forms) and physical surveys.

The objective is not only to quantify trends but also to understand the underlying drivers of dietary supplement use and identify key policy and educational interventions that can promote safe, informed, and responsible health behaviors.

Literature Review

Global Trends in Dietary Supplement Use

The global market for dietary supplements was valued at over USD 150 billion in 2021 and is expected to grow steadily due to rising health awareness (Grand View Research, 2022). In the United States, surveys indicate that more than 50% of adults use at least one dietary supplement daily (Bailey et al., 2013). The trend is equally significant among youth populations, with motivations ranging from muscle building and weight control to perceived immunity boosts.

Youth Consumption Patterns in India

In India, rapid lifestyle changes and fitness awareness have led to increased dietary supplement consumption among the youth (Gupta & Jain, 2020). Urbanization, peer influence, gym culture, and social media are central factors shaping these behaviors. According to Goyal and Bhattacharya (2021), more than 60% of young Indians surveyed admitted to taking supplements without consulting a healthcare professional.

Awareness and Knowledge Gaps

Studies consistently show that while many youth are aware of supplements, their knowledge about ingredients, interactions, and potential side effects is often limited (Agarwal & Goel, 2016; Kaur & Walia, 2017). Rathi and Sharma (2018) emphasized that adolescents' perceptions are often shaped by anecdotal experiences and advertising rather than scientific facts.

Attitudinal and Motivational Drivers

Attitudes toward supplements are influenced by societal standards of beauty, masculinity, fitness, and performance. Peer recommendations and influencer marketing have made supplement use appear as a social norm (Dickinson et al., 2014). The emotional appeal of fast results contributes to impulsive or habitual consumption without critical evaluation.

Regulatory and Educational Gaps

India's regulatory framework, governed by FSSAI and AYUSH, lacks comprehensive enforcement mechanisms. Many products in the market are poorly labeled, with ambiguous health claims (Dwyer et al., 2018). Furthermore, health education curricula in schools and colleges rarely cover nutrition or supplement literacy, leaving youth to rely on social media or peers.

Gendered and Cultural Influences

Research also reveals gendered patterns in supplement consumption. While males often use protein supplements for muscle gain, females are more likely to use weight-loss supplements and skin-improvement products (Sharma & Gopalkrishnan, 2022). Cultural beliefs in Ayurvedic or herbal remedies further normalize supplement use, blurring the lines between food, supplement, and medicine.

Summary of Reviewed Literature

This review lays the foundation for an empirical study that examines how these documented

states: Rajasthan and Maharashtra. The sample includes 578 respondents, with data collected using a non-probability purposive sampling

Study	Focus Area	Key Findings
Bailey et al. (2013)	US Youth Supplement Use	High usage, low regulation, peer influence prominent
Gupta & Jain (2020)	Indian Gym-goers	Peer-driven, trainer influence, minimal doctor consultation
Kaur & Walia (2017)	North India Medical Students	High awareness but poor knowledge of side effects
Goyal & Bhattacharya (2021)	Urban Indian Youth Behavior	Supplement usage influenced by digital media and marketing
Sharma & Gopalkrishnan (2022)	Social Media and Influencers	Social platforms are dominant sources of supplement decisions

trends manifest among youth in India, specifically focusing on the regions of Rajasthan and Maharashtra.

Methodology

Research Design

This study follows a quantitative descriptive research design to examine the awareness, knowledge, and usage patterns of dietary supplements among youth. The aim was to empirically identify behavioral trends and test hypotheses related to dietary supplement consumption across different demographic groups.

Population and Sample

The target population comprises young individuals aged 18–30 years from two Indian

technique to ensure representation from both urban and semi-urban regions.

Data Collection Tools and Techniques

A structured questionnaire was designed and validated through expert review and pilot testing. It contained both closed-ended and Likert-scale questions categorized under the following sections:

Demographic Profile

- Awareness and Sources of Information
- Knowledge of Supplement Safety and Regulation
- Attitudinal Factors and Motivations
- Consumption Behavior and Practices

Data was collected using Google Forms (online mode) and printed physical questionnaires distributed at academic institutions and fitness centers.

Reliability and Validity

Cronbach's alpha was calculated for Likert-scale sections to assess internal consistency. A reliability coefficient of $\alpha = 0.86$ was obtained, indicating high reliability. Content validity was established through consultation with domain experts in public health and nutrition.

Data Analysis Techniques

Data was analyzed using Microsoft Excel and SPSS. The following statistical tools were used:

- Descriptive Statistics (Mean, Frequency, Percentage)
- Cross-tabulation and Graphical Analysis
- Independent Samples t-Test
- One-Way ANOVA
- Correlation Analysis

Research Objectives

1. To assess the level of awareness and knowledge about dietary supplements among Indian youth.
2. To explore attitudes and motivations driving supplement use.
3. To examine usage patterns and influential factors such as gender, age, education, and social media.
4. To test hypotheses related to the relationship between awareness, knowledge, and consumption practices.

Hypotheses

- H1: There is a significant difference in knowledge scores between dietary supplement users and non-users.
- H2: There is a significant relationship between attitudes (perceived benefits and risks) and actual consumption.
- H3: Awareness level significantly predicts the likelihood of dietary supplement use.

This robust methodological framework ensures the study's findings are generalizable, reliable, and useful for both academic discourse and public health interventions.

Data Analysis and Interpretation

This section presents a detailed analysis of the data collected from 578 respondents through structured questionnaires. The responses are grouped into demographics, awareness, knowledge, attitudes, and consumption practices. The data was analyzed using SPSS and Excel.

Demographic Profile

Out of 578 respondents:

- **Gender:** 304 (52.6%) were female, 263 (45.5%) were male, and 11 (1.9%) identified as other.
- **Age Group:** 250 (43.3%) were aged 22–25, followed by 217 (37.5%) aged 18–21, and 111 (19.2%) aged 26–30.
- **Location:** Respondents were from Rajasthan and Maharashtra, with a mix of urban and semi-urban residents.

Awareness of Dietary Supplements

A majority (83.4%) of respondents were aware of dietary supplements. The top sources of awareness were:

- Social Media: 72.6%

- Friends/Peers: 63.8%
- Fitness Trainers: 45.2%

Knowledge Assessment

Respondents were assessed on their understanding of:

- Side effects
- Recommended dosages
- Regulatory certifications (e.g., FSSAI)
- Natural vs. synthetic ingredients

Only 38% demonstrated strong knowledge (scoring above 7 out of 10). Users had slightly higher mean scores than non-users (5.3 vs. 5.1).

Consumption Patterns

Out of 578 respondents, 317 (54.8%) reported using dietary supplements. Among them:

- Protein supplements were most common (60.1%)
- Multivitamins followed at 51.3%
- A significant number used herbal supplements and weight loss products

The top reasons for usage included muscle gain, general wellness, and peer influence.

Inferential Analysis

- **Hypothesis 1:** t-test showed no significant difference between users and non-users in knowledge scores ($p > 0.05$).

Table 1: Group Distribution and Knowledge Score Summary

Group	Mean Knowledge Score	Standard Deviation	Sample Size (N)
Users	5.3	1.2	317
Non-Users	5.1	1.3	261

Table 2: Independent Samples t-Test Results

Test Statistic	Value
t-statistic	0.815
Degrees of Freedom (df)	576
p-value (two-tailed)	0.4168
Significance Level (α)	0.05
Result	Not Significant

Hypothesis 2: Positive correlation found between perceived benefits and usage frequency ($r = 0.38$, $p < 0.01$).

Hypothesis 3: There is no significant difference in knowledge levels based on the source of recommendation.

Table 3: Frequency of Use vs. Knowledge Score Summary

Frequency of Use	Mean Knowledge Score	Standard Deviation	Sample Size (N)
Rarely	5.0	1.1	178
Occasionally	5.3	1.2	139
Frequently	5.4	1.3	93
Very Frequently	5.5	1.4	55

Table 4: One-Way ANOVA Test Results

Test Statistic	Value
F-statistic	2.461
Degrees of Freedom	(3, 461)
p-value	0.0621
Significance Level (α)	0.05
Result	Not Significant

These findings suggest that while awareness is high, deep knowledge and responsible practices are inconsistent.

Findings and Discussion

Summary of Key Findings

- Youth have high exposure to dietary supplements but rely heavily on informal sources like peers and influencers.
- Knowledge is moderate and unevenly distributed, often not supported by consultation with healthcare professionals.
- Usage is more prevalent among those aged 22–25 and among gym-goers.
- Gender plays a role: males prefer muscle gain supplements; females tend toward wellness and beauty-related products.
- Influencers and peer groups significantly shape attitudes and decision-making.

Interpretation of Results

The findings echo prior studies (Gupta & Jain, 2020; Goyal & Bhattacharya, 2021), confirming that Indian youth are at risk of misuse due to partial knowledge and unverified information. This supports the need for comprehensive health education at the college level, digital literacy on supplement claims, and active regulatory enforcement of marketing practices.

Contribution to Literature

This study validates the global KAP (Knowledge-Attitudes-Practices) framework in the Indian context. By mapping real behaviors to attitudinal and demographic factors, it fills a critical empirical gap in the understanding of dietary supplement usage among Indian youth.

Conclusion and Future Research

Conclusion

This empirical investigation provides a comprehensive understanding of the patterns, perceptions, and practices surrounding dietary

supplement use among youth in India. Based on responses from 578 individuals across Rajasthan and Maharashtra, the study reveals a high level of awareness of dietary supplements, largely driven by digital platforms and peer networks. However, this awareness is not consistently translated into adequate knowledge or safe consumption behaviors.

The findings suggest that while youth increasingly view dietary supplements as part of their wellness and performance routines, this behavior is often guided by informal sources such as influencers, gym trainers, and online advertisements. Critical knowledge gaps remain, especially concerning dosage, safety, side effects, and regulatory oversight.

Despite the high usage of protein supplements, multivitamins, and herbal products, the absence of professional guidance highlights the need for structured health education. Moreover, although attitudinal beliefs (e.g., perceived benefits) positively correlate with usage, they do not always align with rational, informed decision-making.

Implications

The research underscores the urgent need for:

- Integrating supplement literacy into academic curricula and wellness programs
- Stronger regulation and transparent labeling by authorities such as FSSAI
- Digital media monitoring to ensure ethical marketing
- Educational campaigns targeting both users and non-users about responsible consumption

Limitations

- The study uses purposive sampling and may not be generalizable to all youth populations across India

- Self-reported data may be subject to response bias
- Cross-sectional nature of the study prevents causal inferences

Directions for Future Research

1. Longitudinal studies to assess the long-term health impacts of supplement use among youth
2. Comparative studies between rural and urban youth populations
3. Qualitative research to understand psychological and emotional drivers of supplement dependency
4. Focused research on the role of influencers and gym trainers in shaping youth behavior

By illuminating the current dynamics of supplement usage, this study lays the groundwork for future interventions that balance public health safety with individual wellness aspirations.

References

- Agarwal, R., & Goel, S. (2016). Knowledge, attitude, and practice regarding dietary supplements among college students in Delhi. *International Journal of Community Medicine and Public Health*, 3(11), 3217–3221. <https://doi.org/10.18203/2394-6040.ijcmph.2016.3939>
- Bailey, R. L., Gahche, J. J., Miller, P. E., Thomas, P. R., & Dwyer, J. T. (2013). Why US adults use dietary supplements. *JAMA Internal Medicine*, 173(5), 355–361. <https://doi.org/10.1001/jama.intern.2013.2299>
- Chowdhury, A., Majumdar, S., & Ghosh, R. (2020). Source of dietary supplement information among Indian adolescents: A cross-sectional study. *Indian Journal of Health Sciences and Biomedical Research*, 13(2), 125–130.
- Dickinson, A., MacKay, D., & Wong, A. (2014). Consumer usage and reasons for using dietary supplements: Report of a series of surveys. *Journal of the American College of Nutrition*, 33(2), 176–182. <https://doi.org/10.1080/07315724.2013.875423>
- Dwyer, J. T., Coates, P. M., & Smith, M. J. (2018). Dietary supplements: Regulatory challenges and research resources. *Nutrients*, 10(1), 41. <https://doi.org/10.3390/nu10010041>
- Goyal, A., & Bhattacharya, S. (2021). Awareness and usage patterns of nutritional supplements among youth: An Indian perspective. *Journal of Public Health Research and Development*, 12(3), 543–550.
- Gupta, N., & Jain, P. (2020). Understanding the dietary supplement use among Indian gym-going youth: A cross-sectional study. *Asian Journal of Sports Medicine*, 11(3), e103630. <https://doi.org/10.5812/asjms.103630>
- Kaur, J., & Walia, I. (2017). Awareness, attitude and practices related to dietary supplements among students of a medical university in North India. *Indian Journal of Clinical Practice*, 28(4), 350–355.
- Rathi, N., & Sharma, S. (2018). Dietary supplement consumption and health perception among Indian adolescents. *International Journal of Adolescence and Youth*, 23(3), 276–286. <https://doi.org/10.1080/02673843.2017.1354312>
- Sharma, R., & Gopalkrishnan, P. (2022). Influence of social media marketing on dietary supplement use among college youth: A content analysis. *Indian Journal of Health and Wellbeing*, 13(1), 27–33.