

Perception and Consumption of Processed and Packaged Dairy Products amongst Young Adults

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Abstract

Background: Dairy has long been a significant component of the Indian diet, providing crucial nutrients. Processed and packaged dairy goods contribute substantially to the increased consumption of such foods among consumers. **Objective:** To assess the frequency of consumption and perception of young adults for the processed and packaged dairy products. **Methodology:** Descriptive cross-sectional design was adopted where young adults (n=100) from Delhi NCR in age range of 18-26 years were assessed for consumption patterns and perception of dairy products namely lassi/chaach, plain dahi/yogurt, milk-based ice cream/kulfi/milk lolly, flavored yogurt/ flavored dahi). The data was collected utilizing a self-structured questionnaire, encompassing questions of sociodemographic details, frequency of consumption, and perception regarding health beliefs. Data was analysed by descriptive statistics. **Results:** Majority (73%) of the subjects were pursuing graduation and had budget of Rs 5000/- for additional expenses. For frequency of consumption 41% of subjects consumed processed and packaged dairy products on daily basis. Majority (43% and 36% respectively) were found to be satisfied for consumption of lassi/chaach, plain yogurt/dahi and flavored yogurt/ flavored. Taste and smell were found to be predominant factor for selection of dairy product. For factors that influence purchase decision and dairy product selection, $\chi^2 = 146.67$ ($p < 0.005$). Majority perceived dairy products to be healthy. **Conclusion:** The research found that dairy products are widely consumed and are perceived to be beneficial for overall health.

Keywords: Dairy products, consumer, perception, processed, packaged

Introduction

The dietary choices that we make reflects not only our taste preferences but also our awareness about the products that are available in the market. Dairy products play a crucial role in strengthening nutritional security of the mankind. Dairy industry has long been a keystone of human nutrition not only providing flavors intrinsic to our diet but also providing vital nutrients. Milk and milk products are one of the most commonly consumed food groups. With rise in

health consciousness and dietary preferences dairy market provides plethora of varieties in its ever-growing sector. Patel et al. (2025) highlights that global milk production in 2023 reached to 964 million tons, growing 2.1% despite various challenges. Globally India remains the largest producer of milk. Dairy sector contributes about 5% to GDP and supports 70 million farmers thus becomes vital to Indian economy. Dairy industry has become more consumer oriented by implementing innovative practices. Consumer increased

demand for value added products has lead to phenomenal demand and supply promotions (Khamkar, 2014). Traditional dairy products are frequently consumed and consumers are also showing increased interest in value added products like flavored milk drinks and yogurts, this was revealed by work of Rybowska and Gromowska (2022).

In India specifically for vegetarian population milk and milk products are the major protein source. They are appreciated by consumers for nutritional and health benefits. Jakubowska et al. (2024), milk products have various bioactive compounds that help in maintaining bodily functions. Dairy products provide essential nutrients which are difficult to get from low-dairy or dairy-free diets. Dairy products are one of the good dietary sources of calcium, have high absorptive rate, good availability in market, and relatively low cost, this makes the regular consumption of dairy products reasonable. They provide more protein, calcium, magnesium, potassium, zinc, and phosphorus per calorie (Rozenberg et al., 2015). Linoleic acid is present in milk in conjugated form which has anti-atherosclerotic, antioxidant and anti-carcinogenic effects, which is found to prevent obesity and type two diabetes and also work in immune function (Bauman et al., 2006; Collomb et al., 2006). Milk protein can stimulate insulin-like growth factor-1 (IGF-1), essential for longitudinal bone growth and bone mass achievement in young children, thus reducing the risk of stunting in them. During adolescence low milk consumption, particularly by girls, may contribute to suboptimal calcium, magnesium, iodine intake, and other important nutrients (Givens, 2020).

The increased consumption of dairy products has several implications food and nutrition security (Kumar et al., 2014). Regular consumption of dairy products is associated with lower risk of several health-related chronic conditions like osteoporosis, type 2 diabetes and cardiovascular diseases (Mandal et al., 2020). Research indicates that milk advantage may extend beyond its impact on bone health, pointing to a potential involvement in the prevention of chronic degenerative diseases. Presence of saturated fatty acids in milk is usually considered a negative factor: overall research indicates little impact of milk consumption on body weight and obesity, but significant benefits on cardiovascular risk factors may account for the lower rates of cardiovascular disease seen in high milk consumers. In addition to fat content, the synergistic effects of protein components (including bioactive peptides), monounsaturated fatty acids, calcium, and antioxidants

may be responsible for number of mechanisms that would improve cardio metabolic health and combat cancer and neurodegenerative diseases (Grosso, 2017).

The escalating demand for dairy commodities is gravely impacted by the assortment of processed and packaged dairy goods that have inundated the market owing to technological advancements. With techniques like pasteurization and preservation, these dairy products are now easily accessible to the masses. The factors that influence the purchase patterns of customers include price, taste and aroma, packaging, and quality. Furthermore, the attitudinal aspect of consumers, which encompasses their beliefs regarding the health benefits of these products, plays a pivotal role in their decision-making process. Understanding consumer satisfaction is a crucial area for any sector. It helps in identifying the key drivers by the companies and providing a better and informed product to the consumers. India is the largest producer and consumer of dairy, globally. Thus, emphasizing the importance of consumer preferences and consumption of dairy products becomes very crucial. With the assorted availability of dairy products in Indian market based on FSSAI Compendium on Food Safety and Standards (Food Products Standards and Food Additives) Regulation (2011), dairy product categorization like lassi/chaach, plain dahi/yogurt, milk based ice cream/kulfi/milk lolly, and flavored yogurt/dahi, this study aimed to identify the key factors that influence consumers in their choice and consumption of specific dairy products, as well as their frequency of consumption. Additionally understanding their health beliefs and attitudes toward processed and packaged dairy products with variability in their nutritional value is of paramount importance.

Objectives:

- To assess the frequency of consumption of processed and packaged dairy products among consumers.
- To analyze the perception of consumers for processed and packaged dairy products available in market

Methodology

Research Design: A descriptive cross sectional research design was employed to examine the perception and consumption patterns of the young adults for processed and packaged dairy products.

Locale: The study was conducted in Delhi-NCR region.

Sampling Design: Non probability sampling- purposive sampling was adopted. Subjects (n=100) aged between 18 and 26 years, comprising of both male and female participated in the work with prior consent.

Tools and Technique: A self-structured questionnaire was constructed. It comprised of sections pertaining to socio demographic details, frequency of consumption and perception of the various listed processed and packaged dairy products as per FSSAI dairy product categorization. For satisfaction statements 5-point Likert scale was applied ranging from very satisfied to very dissatisfied. Factors influencing consumption and avoidance were included. Pretesting of the tool was done to remove any ambiguity. The questionnaire was administered on one-on-one basis in a formal setting. Rapport building was done and subjects were informed about the objectives of the study.

Data Analysis and Statistical Analysis: To decipher the data analysis was done by the means of frequency, percentage and Chi-Square.

Results and Discussion

Sociodemographic details: For assessing the frequency of consumption and perception of consumer regarding processed and packaged dairy products subjects (n=100) participated in the study. With respect to the educational qualification majority (73%) were undergraduate, followed by 26% graduates. The subjects mainly (85%) comprised of students. Age range varied from 18-26 years, consisting of both employed (15%) and unemployed (85%) respondents. As majority participants were students, they had monthly budget of Rs 5000/- for additional expenses. The data indicates higher representation of young adults pursuing graduation.

Table 1: Sociodemographic Details of the Subjects

Parameters		Percentage
Educational Qualification	Till 12th grade or below	0
	Undergraduate	73
	Graduate	26
	Postgraduate	1
Occupation	Employed for wages/salary	10
	Self-employed	5
	Student	85
	Other	0

Monthly Income	Below Rs. 5,000	85
	Rs. 5,000-Rs. 20,000	13
	Rs. 20,000-Rs. 50,000	2
	Rs.50,000 or more	0

Frequency of consumption: For the frequency of consumption of processed and packaged dairy products (table 2) it was found that majority (41%) of the subjects consumed them on daily basis, followed by 35% who consumed these dairy products thrice a week, for once a week there were 20% of the respondents and very few (4%) only consumed once a week. For the type of dairy product consumed majority (47%) reported to have consumed all the listed dairy products and also 18% of the subjects have tried other available dairy products also, this makes it imperative that India is famous for consumption of dairy products amongst the young adults. Further on investigating the frequency of consumption of selected packaged and processed dairy products (table 3) amongst all listed products on daily basis it was plain dahi/ yogurt being preferred by the majority (21%), for thrice a week also it was the preferred product. Lassi/chaach were preferred once a week by majority (42%), Milk-based ice cream/kulfi/milk lolly (47%) for once a week and for flavored yogurt it was once a month (40%).

Świąder et al. (2022) presented that dairy consumption habits of Taiwanese and Polish students. Among Taiwanese students, 60% reported consuming dairy products several times a week, while 14% consumed dairy daily. In contrast, 39% of Polish students declared consuming dairy products daily and 43% consumed them several times a week. This shows that consumption of dairy items is almost high across various countries. The most commonly consumed dairy products as per survey of Rybowska and Gromowska (2022) was butter which was being consumed daily followed by cheese. Yogurt, UHT milk consumption was 2-3 times a week. As per the recommendations given by National Nutritional Guidelines adults need to consume three servings of milk and dairy products 100 ml each every day. Milk and curd are consumed daily by half of India adults. Three quarter were consuming at least once a week. With respect to urban and rural setting, consumption was reported to be higher in urban India (Suresh, 2025). With rapid urbanization and increase in employment opportunities the demand for different milk products is increasing (Kumar et al., 2014). Introducing new variants attracts consumers (Sirisha et al., 2023).

Table 2: Frequency and Commonly Consumed Processed and Packaged Dairy Products

Parameters	Percentage (n=100)
Frequency of consumption	
Daily	41
Thrice a week	35
Once a week	20
Once a month	4
Never	0
Commonly consumed dairy products	
Lassi/Chaach	8
Plain Dahi/Yogurt	11
Milk-based Ice-Cream/Kulfi/Milk Lolly	12
Flavored Yogurt/Dahi	4
All four products	47
Other combinations of the products	18

Table 3: Frequency of Consumption (percentage) of Selected Packaged and Processed Dairy Products

	Daily	Thrice a week	Once a week	Once a month	Never
Lassi/Chaach	8	20	42	19	11
Plain Dahi/Yogurt	21	33	27	15	4
Milk-based Ice Cream/Kulfi/Milk Lolly	12	23	47	16	2
Flavored Yogurt/Flavored Dahi	5	3	31	40	15

Satisfaction level for consumed dairy products: For consumption of lassi/chaach, plain yogurt/dahi and flavoured yogurt/flavoured dahi majority (43% and 36% respectively) were found to be satisfied. Regarding milk-based ice cream/kulfi/milk lolly majority (54%) were very satisfied. Dissatisfaction was found to exist however it was a low percentage. On applying chi square test of independence for

relationship between dairy products and their satisfaction level statistically no significant relationship ($\chi^2=26.57$; $p=0.009$) was found, thus the null hypothesis was accepted, satisfaction level of the consumer was not found to be dependent on the dairy product category amongst the studied sample.

Similar to these findings Sirisha et al., 2023 study revealed that significant portion of participants expressed contentment with dairy products consumption and only a smaller percentage was dissatisfied. Satisfaction is a multidimensional aspect which involves various parameters on which consumer judges a product.

Table 4: Satisfaction Level of Consumers (percentage) for the Consumed Dairy products

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Chi-Square test (χ^2) (p value)
Lassi/Chaach	32	43	17	6	2	26.57 (0.009)
Plain Dahi/Yogurt	29	43	21	5	2	
Milk-based ice cream/Kulfi/Milk Lolly	54	35	8	2	1	
Flavored Yogurt/Flavored Dahi	30	36	25	7	2	

$p > 0.05$: Significant

Factors influencing consumption of dairy products: Result presented in the table 5 showcases various factors which were considered by consumers as promoting factors for the consumption of dairy products which included price, good taste/smell, packaging, nutritional value, recommendation by dietician and other considerations. Amongst these for lassi/chaach and plain dahi/yogurt majority (34% and 57%) considered it to be its nutritional benefits as their reason for consumption. When choosing milk-based ice-cream/kulfi/milk lolly and flavored yogurt/flavored dahi majority (76% and 52%) consider it to be good taste/smell as the primary reason. On applying Chi square test of independence for dairy products and the factors that influencing purchase decision the value obtained was $\chi^2 = 146.67$ ($p < 0.005$), this rejects the null hypothesis thus there is a significant relationship, purchase intention differs for the dairy products. For type of dairy product and non favourable factor chi square ($\chi^2 = 109.8$; $p < 0.005$) findings statistically significant relationship was

found, thus the reason for dissatisfaction varies amongst the products types.

Tandle and Dubey (2025) work highlighted that consumers have positive attitude for dairy products where taste and quality are the most valued factor. Demand for value-added dairy products is seen to be increasing (Kumar et al., 2014) on the other hand demand for traditional dairy products like butter and ghee is declining. Rahnama and Rajabpour (2017) found that functional values, social values, emotional values, and epistemic values positively influence the selection of dairy products, while conditional values had no such impact. The study emphasized the significance of proper pricing for dairy products and found that the size of the place of inhabitation significantly affected the average importance of economic and socio- cultural factors. In the present work it is the nutritional benefit and taste and smell of the product which is dominating the consumers mindset for their consumption preference.

Amongst the non-favorable factors for frequency of consumption of dairy products, for all the products majority of subjects had no issues in their consumption preference, however a small percentage (15% and 12%) believed that lassi/chaach and plain dahi/yogurt is not fresh. For milk-based ice-cream/kulfi/milk lolly, 23% of reported the product to be unhealthy. Flavored yogurt/flavored Dahi 37% of the participants believed it to be costly which became unfavorable factor for its consumption. Income sharply affects the dairy consumption, the consumption is found to be rising steadily amongst wealthy group (Suresh, 2025). As per Ministry of Statistics and Programme Implementation (2024); Household Consumption Expenditure Survey (2023-24) on an average individual spends Around Rs 400 per month on milk and dairy products. Brahma et al., 2024 study based in Assam revealed that vegetarian households allocated more of their budget to powder milk, sweets and ice cream and non- vegetarian households spent more on curd, paneer and other dairy products. With time Indian households' expenditure on dairy is seen to be increasing. In the current findings few consumers only had concern of price and majority faced no difficulty in consuming dairy products. In country like India consumption of dairy products remain high mainly due to nutritional benefits and new value addition varieties.

Table 5: Factors Influencing Consumption (percentage) of

Processed and Packaged Dairy Products

Factors Promoting							Chi- Square test (χ^2) (p value)
	Reasonable price	Tastes/ Smells good	Attractive packaging	Nutritional benefit	Dietician recommended	Other factors	146.67 (0.001)
Lassi/Chaach	25	32	1	34	1	7	
Plain Dahi/ Yogurt	14	21	1	57	3	4	
Milk-based ice cream/ Kulfi/Milk Lolly	11	76	5	1	0	7	
Flavored Yogurt/Flavored Dahi	9	52	10	10	3	16	
Non favorable factors							109.8 (0.001)
	High cost	Tastes/ Smells poor	Consider Un-healthy	Not fresh	Dietary restrictions	Have no problem with the product	
Lassi/Chaach	5	11	2	15	2	65	
Plain Dahi/ Yogurt	6	6	4	12	2	70	
Milk-based ice cream/ Kulfi/Milk Lolly	6	1	23	5	3	62	
Flavored Yogurt/Flavored Dahi	32	5	8	8	2	45	

$p < 0.05$: Significant

Perception of consumers for dairy products: Table 6 highlights the perception of consumers regarding various statement related to dairy products purchase and consumption. For the statement that purchasing habits of these dairy products are often influenced by promotions majority (48%) agreed with it. For health-related benefit statement, dairy product consumption helps to prevent cardiovascular disease, & other condition and dairy product consumption helps in the intake of vitamin D, phosphorus & calcium for bone development majority was found to be in agreement. For proposing negative statement of being harmful to gut health majority disagreed to it highlighting that the consumers were aware of the positive role of dairy and its products in promoting health. With statement on regular consumption of dairy products leads to weight gain, majority (31%) neither agreed nor disagreed. Main factors influencing consumer choice for dairy products selection was health benefits, positive feedback, competitive pricing.

Similar to the present findings, study on consumers of Poland by Jakubowska et al., 2024 revealed that majority of consumers recognize health benefits of milk and milk products primarily being for bone health, immune function enhancement and improved digestion. There is growing openness amongst consumers for trying innovative dairy products which emphasizes on health focused approach (Rybowska & Gromowska, 2022). Kumar and Babu (2014) listed factors that influencing consumer buying behaviour for dairy products where factors like packaging, cost, availability, product quality, taste, brand were the major determinants. It also stated that promotional offers also play a role.

Table 6: Perception of Consumers for Dairy Products (percentage response)

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Purchasing habits of these dairy products are often influenced by promotions.	16	48	19	15	2
Dairy product consumption helps to prevent cardiovascular disease, & other condition	15	45	31	8	1
Dairy product consumption helps in the intake of vitamin D, phosphorus & calcium for bone development.	38	50	12	0	0
Dairy products are bad for your gut.	2	10	24	40	24
Regular consumption of dairy products leads to weight gain.	8	29	31	22	9

Conclusion

The study enhanced the understanding of young adult consumer perspectives for consumption of processed and packaged dairy products in Delhi NCR, India. Research revealed that young adults consumed the dairy products primarily daily followed by thrice a week and have tried all of the products listed in the survey. Product wise majorly the frequency of consumption was found to be thrice a week which reflects that dairy products are being given importance in one's diet. Additionally, participants expressed satisfaction with their consumption experience for all the processed and packaged dairy products. Taste and smell was found as one of the main factors for choosing these dairy products, followed by nutritional benefits for items like lassi/chaach and plain dahi/yogurt. However, concerns about freshness and high

prices were mentioned as unfavorable factors affecting consumption. For majority promotional factors played a role in purchase of the dairy products. Attitude responses indicate that beliefs in health benefits, such as high vitamin D and calcium intake from consuming dairy products, remain strong among consumers. These findings have significant implications on policy makers. The significance of the dairy sector in India is of paramount importance, where millions of people livelihood is sustained via agricultural economy.

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