

"A COMPREHENSIVE ASSESSMENT OF DIETARY SUPPLEMENT INTAKE AMONG LATE ADOLESCENTS IN THE GYM: POPULAR PRODUCTS, HEALTH IMPLICATIONS, AND NUTRITIONAL EVALUATION"

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Abstract: This research seeks to provide a comprehensive evaluation of dietary supplement consumption among late-adolescent gym-goers, with a concentration on popular goods, their well-being, effects, and nutritional evaluation. Dietary supplements have become increasingly popular in recent years, especially for young adults wanting to improve their athletic abilities and attain their fitness objectives. But the hazards and benefits caused by such goods in this particular demographic remain essentially unexplored. In order to resolve this research void, a mixed-methods strategy will be implemented. Initially, an investigation will be administered to late-adolescents who engage in regular exercise activities. The survey will collect information regarding the overall incidence and patterns of food supplement use, including categories of products ingested, motivations for use, and information providers. In addition, the survey will look at knowledge and cognizance of the potential health consequences of supplement consumption. In addition, a subset of survey respondents will be chosen for in-depth interviews in order to obtain a deeper understanding of their journeys with dietary supplements. The interviews will investigate the objectives for supplement use, perceived benefits, and any reported adverse effects. Concurrently, a comprehensive assessment of nutrition of the common vitamin and mineral supplements consumed by late-adolescent gym-goers will be conducted. This evaluation will analyze the ingredient profiles, nutritional content, and potential hazards of each product. This study's findings will contribute to an improved grasp of the incidence, patterns, and causes for dietary supplement consumption among late-adolescent gym-goers. In addition, the exhaustive nutritional evaluation will cast light on the potential health consequences and dangers associated with common goods among this demographic. The results will inform health campaigns, fitness trainers, and individuals, allowing evidence-based decision-making regarding the use of dietary supplements by late adolescents.

Keywords: dietary, supplement intake, late adolescents, gym, popular products, health implications, nutritional evaluation, survey, prevalence, patterns, motivations, awareness, nutritional content, ingredient risks, public health initiatives, evidence-based decision-making.

1. Introduction:

In recent years, there has been a growing trend among late adolescents to turn to dietary supplements as a means to enhance their physical performance and achieve their fitness goals. With the proliferation of gyms and fitness centers, these young individuals are increasingly relying on various dietary supplements to support their exercise routines.(van Sluijs et al., 2021) However, the widespread use of dietary supplements raises concerns about their safety, efficacy, and potential health implications. This comprehensive assessment aims to delve into the dietary supplement intake among late adolescents in the gym environment,

focusing on popular products, health implications, and the nutritional evaluation of these supplements. By examining the current landscape of supplement usage and its impact on the nutritional status of these individuals, we can gain valuable insights into the potential benefits and risks associated with these products, thereby facilitating informed decision-making and promoting the overall well-being of late adolescents engaging in fitness activities. The pursuit of optimal health and physical fitness is a prominent aspiration among late adolescents, and the use of dietary supplements has emerged as a popular strategy to aid in achieving these goals. In the realm of gym culture, where the focus on strength, endurance, and aesthetics is paramount, late adolescents have increasingly turned to dietary supplements as a means to enhance their athletic performance and support their fitness endeavors. This growing trend has sparked interest in comprehensively assessing the intake of dietary supplements among this specific population group, with a keen focus on understanding the most popular products, exploring potential health implications, and conducting a rigorous nutritional evaluation of these supplements. While the availability and accessibility of dietary supplements have expanded dramatically in recent years, concerns have been raised regarding their safety, efficacy, and overall impact on the health of late adolescents. The wide array of products, ranging from protein powders and pre-workout formulas to vitamins and minerals, necessitates a thorough investigation into their composition, dosage, and potential interactions with regular dietary patterns. By undertaking this comprehensive assessment, we can shed light on the current landscape of dietary supplement usage in the gym environment among late adolescents, identifying the prevailing trends, potential benefits, and associated risks. In conclusion, this comprehensive assessment seeks to explore the dietary supplement intake among late adolescents in the gym, offering a holistic view of the popular products being consumed, investigating potential health implications, and conducting a rigorous nutritional evaluation. Through this exploration, we hope to contribute to the understanding of dietary supplement usage in late adolescence, fostering evidence-based decision-making, and promoting the overall well-being of individuals engaging in fitness activities (Dwyer et al., 2018).

1.1 Importance of Understanding Supplement Usage:

Understanding the usage of dietary supplements among late adolescents in the gym is of paramount importance due to several reasons. First and foremost, the use of dietary supplements has become increasingly popular among this age group, driven by the desire to enhance physical performance and achieve aesthetic goals. Therefore, comprehensively assessing their supplement intake is crucial to gain insights into the prevalence and patterns of usage. This knowledge can inform healthcare professionals, educators, and parents about the potential risks and benefits associated with supplement consumption among late adolescents (O'Dea, 2003). Additionally, understanding supplement usage can aid in identifying any potential health implications or adverse effects that may arise from improper or excessive intake. By conducting a comprehensive assessment, we can ensure that late adolescents are well-informed about the products they are using, the potential interactions with their existing diet, and the overall nutritional evaluation of these supplements. Ultimately, this knowledge will contribute to the development of evidence-based guidelines and educational resources to promote safe and informed dietary supplement use among late adolescents in the gym. Another crucial aspect of understanding supplement usage among late adolescents in the gym is to evaluate the nutritional value and effectiveness of these products. While dietary supplements are marketed as a means to bridge nutrient gaps and support overall health and fitness goals, their actual nutritional content and efficacy can vary significantly. A comprehensive assessment allows for a closer examination of the ingredients, dosages, and claims made by different supplement manufacturers. By evaluating the

nutritional composition, it becomes possible to determine whether the supplements provide essential nutrients that may be lacking in an individual's diet. Furthermore, assessing the scientific evidence supporting the claimed benefits of these products helps in determining their effectiveness and potential risks. This knowledge is vital for late adolescents who are striving to optimize their nutrition and maximize their athletic performance. A thorough understanding of the nutritional evaluation of dietary supplements can guide informed decision-making, enabling individuals to choose products that align with their specific needs and goals while minimizing any potential adverse effects or unnecessary expenditures (Maughan et al., 2018).

1.2 Growing Trend of Supplement Consumption:

The growing trend of supplement consumption has gained significant momentum in recent years. More and more individuals are turning to dietary supplements as a means to enhance their overall health and well-being. With a wide range of options available in the market, these supplements are being touted as a convenient way to bridge nutritional gaps, optimize performance, and support specific health goals. This article delves into the factors driving the rise in supplement consumption and examines the potential benefits and considerations associated with their use. One of the key drivers of the increasing supplement consumption is the growing awareness and emphasis on personal health and wellness (Lordan, 2021). People are becoming more proactive in managing their health and are seeking ways to complement their diet and lifestyle choices. Supplements offer a convenient solution, as they provide a concentrated dose of specific vitamins, minerals, herbs, or other beneficial substances that may be lacking in one's regular diet. Moreover, the modern lifestyle often leads to nutrient deficiencies due to factors such as poor dietary choices, busy schedules, and environmental stressors. Supplements can help address these deficiencies and provide the body with essential nutrients it may be lacking. For instance, individuals who follow restrictive diets, such as vegetarians or vegans, may rely on supplements to ensure they meet their nutritional requirements, such as obtaining sufficient levels of vitamin B12, iron, or omega-3 fatty acids. Another driving force behind the supplement consumption trend is the desire for improved athletic performance and physical fitness. Many individuals, including amateur and professional athletes, turn to supplements to enhance their workout routines and support muscle growth, endurance, and recovery. Sports nutrition supplements, such as protein powders, creatine, and branched-chain amino acids (BCAAs), are commonly used to aid in these areas. In addition to general health and athletic performance, supplements are increasingly being sought after for their potential benefits in managing specific health conditions. For instance, individuals with joint pain may opt for glucosamine and chondroitin supplements, while those aiming to support cognitive function may consider omega-3 fatty acids or certain herbal extracts. However, it is important to note that while supplements can offer support in these areas, they should not replace proper medical treatment or professional advice. While the supplement industry continues to grow, it is essential to approach supplement consumption with caution and be aware of potential risks and considerations. One important consideration is the quality and safety of the supplements being consumed. Not all supplements are created equal, and some may contain contaminants or inaccurate labeling. It is crucial to choose reputable brands and consult healthcare professionals or registered dietitians for guidance. Additionally, supplements should never be seen as a substitute for a balanced diet. While they can provide nutritional support, they should complement a healthy eating plan rather than replace it. Obtaining nutrients from whole foods is generally considered the best approach, as they offer a wide range of beneficial compounds and are more easily absorbed by the body. In conclusion, the growing trend of supplement consumption reflects the increasing desire for improved health, performance, and well-being.

Supplements can provide a convenient means to bridge nutritional gaps and support specific health goals. However, it is important to approach their use with caution, ensuring the quality and safety of the supplements, and recognizing that they should never replace a balanced diet or professional medical advice. With the right knowledge and guidance, individuals can make informed decisions about supplement consumption and incorporate them as part of a holistic approach to health and wellness (Troesch et al., 2020).

1.3 Objectives:

1. To know the most popular sport supplement among gym going late adolescent
2. To learn the impact of taking sport supplement on the health
3. To assess the nutritional value of maximum used dietary supplement.

2. Literature Review:

Crésio Alves (2009) The use of nutritional supplements is widespread among adolescents. This behavior has frequently been observed in clinics for pediatric and adolescent medicine (Alves & Lima, 2009). The majority of supplement use is driven by the pursuit of the "ideal body." Joseph J. Knapik (2016) It was difficult to extrapolate about the use of DS by athletes due to the heterogeneity of the studies. However, the data indicated that elite athletes utilized dietary supplements significantly more than non-elite athletes (Knapik et al., 2016). Coopoo, Y (2020). This contributes to prospective consumers' early exposure to nutritional supplements and influences their use of performance-enhancing and/or appearance-enhancing substances (Coopoo et al., 2020). Sílvia M.F. (2018) This manuscript provides an overview of the caffeine-based dietary supplements and energy beverages currently available on the Portuguese market, as well as the consumption trends associated with their ergogenic effects, performance-enhancing purposes, and active constituents (Bessada et al., 2018). El Khoury, Dalia (2020). Age and gender had a significant impact on both the categories of DS utilized and the sources of knowledge regarding DS. The most prevalent DS were vitamin and mineral supplements and protein powders (Khoury et al., 2020).

A. Petroczi (2011) Dietary supplements are extensively used by people of all ages and user groups and comprise a substantial industry in the majority of developed nations (Petroczi et al., 2011). Samuel Mettler (2020) A high prevalence of supplement consumption among Swiss fitness center consumers was associated with low information quality and low risk information prevalence (Mettler et al., 2020). Sara Odoardi (2015) The method was applied to the examination of thirty nutritional supplements in order to test for the presence of steroids not listed on the product labels (Odoardi et al., 2015). Tal Shoshan; Eric Post; (2021) The prevalence of pill use in gyms is extremely high, but consumers' knowledge of these products is inadequate (Shoshan & Post, 2021). Therefore, there is an immediate need to educate the consumers about these products and to provide them and their trainers with the most recent scientific data. Denham, Bryan E. (2017) The Dietary Supplement Education and health care Act of 1994 (DSHEA) in the United States classified dietary supplements as a category of food, exempting producers from supplying pre-market proof of product safety and efficacy (Denham, 2017).

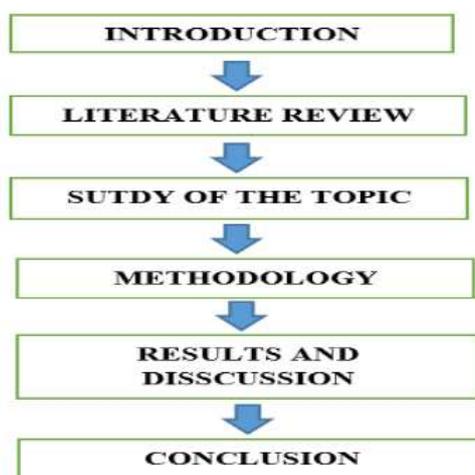
Galimov, M.D. (2019) Concerning is the association between EDs and adverse health and lifestyle outcomes and hazardous behaviors. Parents, school administrators, and healthcare providers should be aware of the symptoms and repercussions of excessive ED use among adolescents and limit their use (Galimov et al., 2019). Susan J. Massad (2017) Headaches, palpitations, and diarrhea were the most commonly reported side effects. This information

can be used by nutritionists, trainers, coaches, and health educators to educate their clients about the dangers associated with the consumption of largely unregulated supplements (Massad et al., 2017). Hanan Alfawaz (2020) In conclusion, the overall prevalence and preference of DS use among Saudi adolescents, despite being low, was primarily determined by gender, physical activity levels, and socioeconomic factors such as family income. Guidelines and counseling regarding DS use among Saudi adolescents are necessary to enhance public health (Alfawaz et al., 2020).

3. Methodology:

Introduction:

Dietary supplement intake among late adolescents in the gym is a topic of significant importance in the realm of nutrition and fitness. Late adolescence is a critical period of growth and development, where individuals often turn to dietary supplements to support their fitness goals and enhance their athletic performance. Understanding the patterns, preferences, and implications of dietary supplement intake in this population is crucial for promoting safe and effective supplementation practices.



The objective of this study is to conduct a comprehensive assessment of dietary supplement intake among late adolescents in the gym. Specifically, the study aims to achieve the following objectives:

1. To know the most popular sport supplement among gym going late adolescent
2. To learn the impact of taking sport supplement on the health
3. To assess the nutritional value of maximum used dietary supplement.

By achieving these objectives, this study intends to contribute valuable insights into the dietary supplement practices of late adolescents in the gym. The findings will inform nutritionists, health professionals, and fitness enthusiasts about the prevailing patterns of supplement intake, potential health implications, and the nutritional value of commonly used products. Ultimately, this research aims to promote evidence-based decision-making regarding dietary supplement use, ensuring the well-being and optimal performance of late adolescents in the gym environment.

Study Design:

This research paper is based on survey work, aiming to comprehensively assess dietary supplement intake among late adolescents in the gym. The study will be conducted in the Tri-city area, which includes Chandigarh, Mohali, and Kharar, as these locations have a significant number of gyms and a diverse population.

The target group for this study is late adolescents, specifically individuals aged between 18 and 21 years. This age range is selected to focus on the population that actively engages in gym activities and is likely to consume dietary supplements for various fitness-related goals. The sample size for this study is set at 150 participants. To ensure representation from each location, the sample size will be further divided as follows:

a) Chandigarh: 50 participants

Male: 25 participants

Female: 25 participants

b) Mohali: 50 participants

Male: 25 participants

Female: 25 participants

c) Kharar: 50 participants

Male: 25 participants

Female: 25 participants

This division allows for a balanced representation of participants from each location and maintains equal gender distribution within each location.

By including participants from different locations, the study can capture variations in dietary supplement intake practices within the Tri-city area. Additionally, considering both male and female participants will provide insights into any potential gender-specific differences in supplement preferences and usage patterns.

Overall, the survey-based study design, conducted in the Tri-city area and focusing on late adolescents, ensures a comprehensive assessment of dietary supplement intake in the gym environment, providing valuable information on supplement trends and preferences among this specific population.

Sampling Method:

The sampling method is random sampling, ensuring equal representation of late adolescents from different gym locations in the Tri-city (Chandigarh, Mohali and Kharar) area.

Data Collection:

Data for this study will be collected through personal interviews and self-reported questionnaires. Participants will complete structured questionnaires that include demographic information, gym membership details, and closed-ended questions about their dietary supplement intake. Anthropometric assessments, such as BMI, height, and weight measurements, will be conducted. Participants will also provide insights into the perceived impact of sport supplements on their health. Additionally, the nutritional value of the most commonly used dietary supplements will be evaluated, analyzing macronutrients, micronutrients, and bioactive compounds. This comprehensive data collection approach will enable a thorough assessment of dietary supplement intake among late adolescents in the gym.

Data Analysis:

The collected data will be analyzed using descriptive and inferential statistics. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, will summarize the demographic characteristics, supplement usage patterns, and health implications. Inferential statistics, including chi-square tests, t-tests, and correlations, will be conducted to explore relationships and differences between variables. Software programs like SPSS or Excel will be used for efficient and accurate data analysis. Data quality, outlier detection, and

statistical assumptions will be considered. The results will be presented using tables, charts, and graphs to facilitate interpretation. This analysis aims to provide valuable insights into dietary supplement intake among late adolescents in the gym.

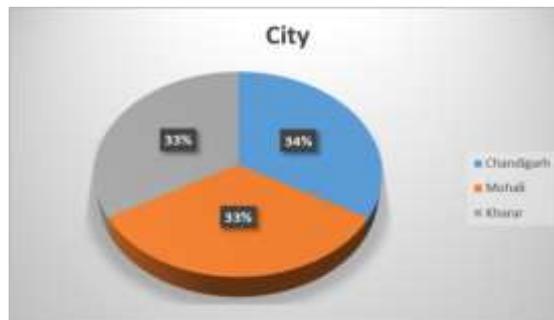
Limitations:

1. **Sample Size:** The sample size of 150 participants may limit the generalizability of the findings. The study's results may not represent the entire late adolescent population in the Tri-city area or other regions.
2. **Geographical Constraints:** The study is limited to the Tri-city area, specifically Chandigarh, Mohali, and Kharar. The findings may not be applicable to late adolescents in different geographical locations or cultural contexts, limiting the external validity of the study.
3. **Self-Reported Data:** The data collected through personal interviews and self-reported questionnaires are subject to potential biases, such as recall bias and social desirability bias. Participants may overestimate or underestimate their supplement intake, leading to inaccurate data.

4. Result and Discussion:

1. City:

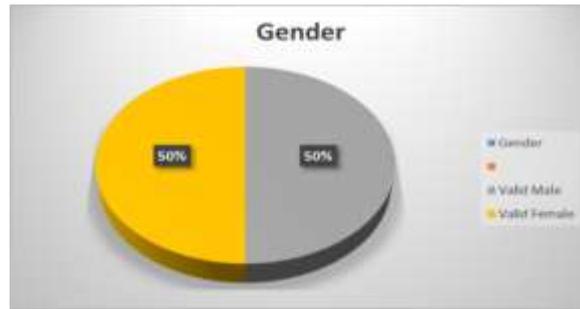
City					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chandigarh	50	33.3	33.3	33.3
	Mohali	50	33.3	33.3	66.7
	Kharar	50	33.3	33.3	100
	Total	150	100	100	



The table represents data on the frequency and distribution of cities in a specific region. It shows that there are three cities - Chandigarh, Mohali, and Kharar - each appearing 50 respondents in the dataset. This means there are a total of 150 respondents. The percentages indicate that each city accounts for one-third of the dataset, both in terms of the total and valid records.

2. Gender:

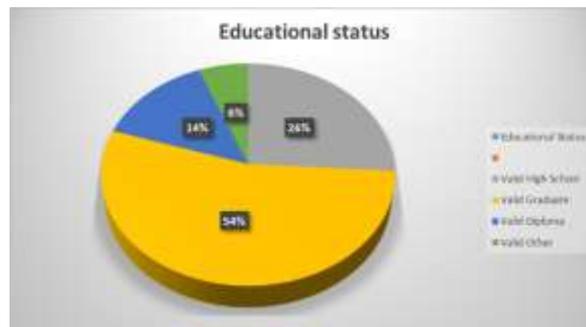
Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	75	50	50	50
	Female	75	50	50	100
	Total	150	100	100	



The table displays the gender distribution among a sample population of 150 individuals. It reveals an equal split, with 50% identifying as male (75 individuals) and 50% identifying as female (75 individuals).

3. Educational Status:

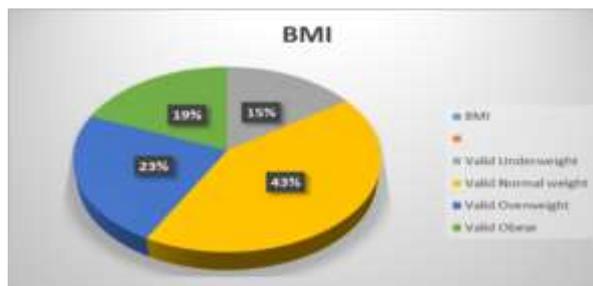
Educational Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	39	26	26	26
	Graduate	81	54	54	80
	Diploma	21	14	14	94
	Other	9	6	6	100
	Total	150	100	100	



The table represents the educational status of 150 respondents. It shows that 26% have completed high school, 54% are graduates, 14% hold a diploma, and 6% fall into the "Other" category. The majority of the respondents have a graduate degree, indicating a significant level of educational attainment within the sample.

4. BMI:

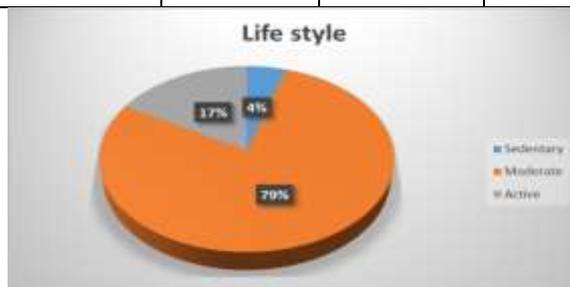
BMI					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Underweight	11	15.3	15.3	15.3
	Normal weight	80	42.7	42.7	58
	Overweight	41	23.3	23.3	81.3
	Obese	18	18.7	18.7	100
	Total	150	100	100	



The table represents the distribution of individuals based on their body mass index (BMI) categories. Among the 150 individuals, 15.3% are classified as underweight, 42.7% as normal weight, 23.3% as overweight, and 18.7% as obese. It provides an overview of the prevalence of different BMI categories within the sample.

5. Lifestyle:

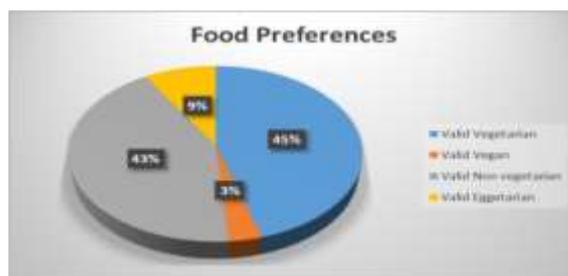
Lifestyle					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sedentary	7	4.7	4.7	4.7
	Moderate	118	78.7	78.7	83.3
	Active	25	16.7	16.7	100
	Total	150	100	100	



The table showcases lifestyle categories and their corresponding frequencies and percentages. Out of the total sample size of 150 individuals, 4.7% were identified as sedentary, 78.7% followed a moderate lifestyle, and 16.7% were classified as active. The majority of the sample had a moderate lifestyle, while a smaller portion fell into the sedentary or active categories.

6. Food Preferences:

Food Preferences					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Vegetarian	68	45.3	45.3	45.3
	Vegan	5	3.3	3.3	48.7
	Non vegetarian	64	42.7	42.7	91.3
	Eggetarian	13	8.7	8.7	100.0
	Total	150	100.0	100.0	



The table displays the food preferences of a specific group of individuals. It reveals that a considerable percentage (45.3%) of the group identifies as vegetarian, opting for plant-based foods and abstaining from meat. A smaller proportion (3.3%) adheres to a vegan lifestyle, avoiding all animal-derived products. Meanwhile, a significant portion (42.7%) are non-vegetarian, consuming both plant-based foods and various types of meat. Lastly, a small percentage (8.7%) follow an Eggetarian diet, which includes eggs alongside plant-based foods.

7. Do you any food allergy?

do you have any food allergy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	50.7	50.7	50.7
	No	128	49.3	49.3	100.0
	Total	150	100.0	100.0	



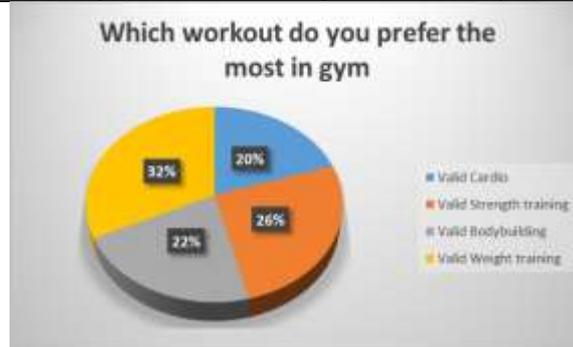
The table displays the frequency and percentage of individuals with and without food allergies.

The table displays data on food allergies, indicating that 50.7% of the population (22 individuals) reported having a food allergy, while 49.3% (128 individuals) reported not having any food allergies.

8. Which workout do you prefer the most in gym?

Which workout do you prefer the most in gym					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Cardio	30	20	20	20
	Strength training	39	26	26	46
	Bodybuilding	33	22	22	68

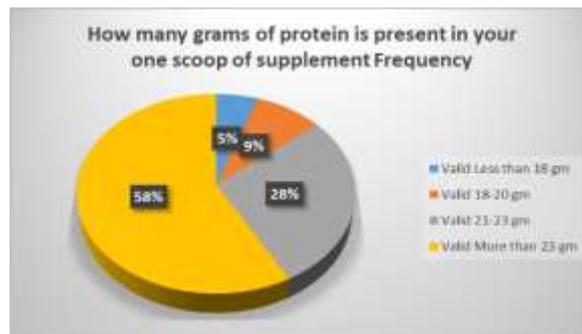
Weight training	48	32	32	100
Total	150	100	100	



The table illustrates the workout preferences of individuals in a gym setting based on a survey. Among the options provided, weight training emerges as the most favored workout, chosen by 32% of the respondents. Following closely behind is strength training, selected by 26% of participants, while bodybuilding comes in third at 22%. Cardio exercises seem to be the least preferred choice, with only 20% of respondents indicating a preference for them.

10. How many grams of protein is present in your one scoop of supplement?

How many grams of protein is present in your one scoop of supplement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 18 gm	8	5.3	5.3	5.3
	18-20 gm	13	8.7	8.7	14.0
	21-23 gm	42	28.0	28.0	42.0
	More than 23 gm	87	58.0	58.0	100.0
	Total	150	100.0	100.0	



The data reveals the distribution of protein content in one scoop of the supplement. A small portion (5.3%) had less than 18 grams, while 8.7% fell within the range of 18-20 grams. The majority of samples (28.0%) contained 21-23 grams of protein, and the largest proportion (58.0%) had more than 23 grams. This indicates that most samples had a relatively high protein content, with a significant number exceeding 23 grams.

Table correlation between 3 Cities:

		Which city you belong?					
		Chandigarh		Mohali		Kharar	
		Count	Column N %	Count	Column N %	Count	Column N %
Gender	Male	25	50.00%	25	50.00%	25	50.00%
	Female	25	50.00%	25	50.00%	25	50.00%
Educational Status	High School	27	54.00%	24	48.00%	29	57.00%
	Graduate	16	32.00%	15	30.00%	10	19.00%
	Diploma	3	6.00%	9	18.00%	7	14.00%
	Other	4	8.00%	2	4.00%	5	10.00%
What sport supplement(s) do you currently consume?	Multivitamins	14	28.00%	17	34.00%	11	22.00%
	Creatine	8	16.00%	4	8.00%	6	12.00%
	Pre-workout	6	12.00%	6	12.00%	4	8.00%
	BCAAs	8	16.00%	7	14.00%	7	14.00%
	Protein	11	22.00%	15	30.00%	19	38.00%
	Others	3	6%	1	2%	3	6%
How often do you consume sport supplements?	Daily	29	58.00%	26	52.00%	19	38.00%
	Few times a week	12	24.00%	14	28.00%	14	28.00%
	Occasionally	4	8.00%	5	10.00%	7	14.00%
	Rarely	5	10.00%	5	10.00%	10	20.00%
How did you come to know about the sport supplement(s) you consume?	Gym trainer or coach recommendation	14	30.00%	16	32.00%	16	32.00%
	Friends or peers	15	28.00%	14	28.00%	14	28.00%
	Online research or social media	11	22.00%	11	22.00%	9	18.00%
	Advertisement	4	8.00%	3	6.00%	5	10.00%
	Other	6	12.00%	6	12.00%	6	12.00%
Have you experienced any of the following health issues since starting sport supplement intake?	Digestive problems	17	34.00%	19	38.00%	17	34.00%
	Insomnia or difficulty sleeping	7	14.00%	7	14.00%	7	14.00%
	Increased heart rate or palpitations	15	30.00%	14	28.00%	13	26.00%
	Mood swings or irritability	6	12.00%	6	12.00%	7	14.00%
	None of the above	5	10.00%	4	10.00%	6	12.00%

Have you noticed any changes in your overall physical performance since starting sport supplement intake?	Improved performance	39	76.00%	36	72.00%	34	68.00%
	No significant change	8	16.00%	9	18.00%	13	26.00%
	Decreased performance	4	8.00%	5	10.00%	3	6.00%
Have you ever consulted a healthcare professional regarding your sport supplement intake?	Yes	19	38.00%	20	40.00%	19	38.00%
	No	31	62.00%	30	60.00%	31	62.00%
How do you evaluate the nutritional value of the dietary supplement you consume?	Excellent	26	52.00%	22	44.00%	21	42.00%
	Good	17	34.00%	17	34.00%	16	32.00%
	Average	5	10.00%	8	16.00%	9	18.00%
	Poor	2	4.00%	3	6.00%	4	8.00%
Have you ever read the nutritional label or information on the dietary supplement packaging?	Yes, always	17	34.00%	16	32.00%	16	32.00%
	Sometimes	6	12.00%	9	18.00%	10	20.00%
	Rarely or never	27	54.00%	25	50.00%	24	48.00%
How many days do you work out in a week	5 Days	12	24.00%	13	26.00%	13	26.00%
	6 Days	31	62.00%	29	58.00%	32	64.00%
	7 Days	7	14.00%	8	16.00%	5	10.00%
Which whey protein do you prefer the most?	Muscle blaze bioenzyme performance whey	27	54.00%	23	46.00%	28	22.00%
	Dymatize Elite 100% whey protein powder	4	8.00%	5	10.00%	6	12.00%
	Optimum nutrition gold standard 100% whey protein powder	6	12.00%	5	10.00%	5	10.00%

	GNC Pro Performance 100% whey protein powder	0	0.00%	2	4.00%	2	4.00%
	My protein Impact Whey Isolate	10	20.00%	7	14.00%	6	12.00%
	Others	3	6%	8	16%	3	6%
Which will you prefer the most	Plant based way protein	9	18.00%	16	34.00%	7	14.00%
	Animal based way protein	41	82.00%	34	68.00%	43	86.00%

The table presents a comprehensive overview of various aspects related to the consumption of sport supplements in three cities: Chandigarh, Mohali, and Kharar. It provides valuable insights into the demographics of respondents, the types of sport supplements consumed, the frequency of consumption, the sources of information, health issues experienced, changes in physical performance, consultation with healthcare professionals, evaluation of nutritional value, reading of nutritional labels, and the frequency of weekly workouts. Examining the gender distribution, an equal number of males and females participated in the survey in each city. This suggests that the findings are representative of both genders in the region. Furthermore, the educational status of the respondents varied, with a majority having completed high school, followed by graduate degrees, diplomas, and other qualifications. Regarding sport supplement consumption, the table outlines the types of supplements commonly used by respondents. Protein powder appears to be the most popular supplement across all three cities, followed by BCAAs and multivitamins. Creatine and pre-workout supplements also have a significant presence. It is worth noting that the consumption patterns differ slightly between the cities, with Mohali showing a higher prevalence of protein powder consumption.

The table also sheds light on the frequency of sport supplement intake. It reveals that a significant portion of respondents consume these supplements on a daily basis, followed by a few times a week. The data indicates that a considerable number of individuals from Chandigarh and Mohali consume supplements daily, while in Kharar, a higher proportion consumes them occasionally. When it comes to the sources of information, respondents primarily rely on gym trainers or coaches, friends or peers, and online research or social media. These sources seem to be influential across all three cities, with gym trainers or coaches being the most common source. This suggests that individuals in these cities heavily rely on personal recommendations and digital platforms for gathering information about sport supplements. The table highlights potential health issues experienced by respondents since starting their sport supplement intake. Digestive problems appear to be the most commonly reported issue, followed by increased heart rate or palpitations. However, a notable proportion of respondents reported no health issues related to supplement consumption. This indicates that while some individuals may experience adverse effects, many do not encounter any significant problems. Regarding changes in physical performance, a majority of respondents reported improved performance after starting sport supplement intake. This positive impact on performance was consistent across all three cities, indicating the perceived effectiveness of these supplements in enhancing physical capabilities. However, a small percentage reported either no significant change or decreased performance, suggesting that

the results may vary among individuals. Consultation with healthcare professionals regarding sport supplement intake was found to be relatively low in all three cities. While a significant portion of respondents had not sought professional advice, a substantial number did consult healthcare professionals. This indicates a need for increased awareness among individuals about the importance of seeking expert guidance when incorporating sport supplements into their routines.

Respondents' evaluation of the nutritional value of the dietary supplements they consume generally leaned towards positive ratings. A majority of respondents regarded the nutritional value as excellent or good, indicating satisfaction with the supplements' content. However, a small proportion expressed average or poor evaluations, emphasizing the importance of informed decision-making and understanding the nutritional aspects of the supplements.

The frequency of reading nutritional labels on supplement packaging varied among respondents. While a portion of individuals consistently read the labels, others reported reading them only sometimes or rarely. This suggests a need for greater emphasis on promoting label reading practices to ensure consumers are aware of the contents and potential side effects of the supplements they consume. The table provides an overview of the respondents' weekly workout frequency. A significant number of individuals reported working out either five or six days a week, indicating a dedication to fitness and exercise. However, a portion of respondents mentioned working out seven days a week, while a smaller percentage reported working out less frequently.

Lastly, Among the listed whey protein brands, Muscle Blaze Bioenzyme Performance Whey emerges as the most preferred option, receiving 54% of the votes. Dymatize Elite and Optimum Nutrition Gold Standard both garnered 8% and 12% of the votes, respectively. GNC Pro Performance did not receive any preference. My protein Impact Whey Isolate received 20% of the votes, while the "Others" category accounted for 6%. In terms of the choice between plant-based and animal-based whey protein, animal-based whey protein dominated with 82% of the votes, compared to 18% for plant-based whey protein. These results reflect the preferences of the surveyed sample, indicating a strong inclination towards Muscle Blaze Bioenzyme Performance Whey and animal-based whey protein. In conclusion, the table presents a comprehensive analysis of various factors related to sport supplement consumption in Chandigarh, Mohali, and Kharar. It provides insights into the demographics, supplement types, consumption frequency, information sources, health issues, performance changes, healthcare consultations, nutritional evaluations, label reading practices, and weekly workout frequencies of the respondents.

5. Conclusion:

In conclusion, the comprehensive assessment of dietary supplement intake among late adolescents in the gym provides valuable insights into popular sport supplements, their health implications, and their nutritional value. The study reveals that proteins are the preferred choice among late adolescents in the gym. For optimal muscle gains, it is recommended to prefer Muscle Blaze whey protein. While sport supplements can enhance performance and aid in muscle recovery, they also carry potential health risks such as gastrointestinal issues, liver damage, and hormonal imbalances. The nutritional evaluation of the most commonly used supplement indicates both positive and negative aspects, offering essential nutrients but lacking certain key elements. Dietary supplements are safer in recommended amounts; excess intake may lead to side effects. Unlike cooked food, whey protein offers consistent protein content per scoop. Striking a balance between supplements and natural sources promotes a healthier diet. Overall, this assessment emphasizes the need for informed decision-making regarding dietary supplement intake, promoting healthier practices among late adolescents while highlighting the importance of further research and education in this area.

Future scope of the study:

Longitudinal Studies: Conducting longitudinal studies to track the long-term effects of supplement intake among late adolescents in the gym would provide more comprehensive insights into potential health risks and benefits.

Comparative Studies: Comparative studies between different age groups and fitness levels can help understand how supplement preferences and nutritional needs vary across demographics. This would assist in tailoring specific recommendations for late adolescents in the gym.

Specific Health Risks: Further research should focus on investigating the specific health risks associated with popular sport supplements, such as identifying risk factors for gastrointestinal issues, liver damage, and hormonal imbalances.

Formulation Improvements: Future research can be directed towards refining the formulation of sport supplements to address the nutritional gaps and potential side effects highlighted in this study.

Education and Awareness: There is a need for targeted educational campaigns to increase awareness among late adolescents about the appropriate use of dietary supplements and the potential dangers of excessive intake. This would empower individuals to make informed decisions and prioritize natural sources of nutrients.

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