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Knowledge and use of dietary supplements in gym going respondent of Lucknow, Uttar Pradesh

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Abstract

The knowledge and use of dietary supplements served as the foundation for this investigation. A manufactured product known as a dietary supplement can be taken in the form of a pill, capsule, tablet, powder, or liquid to supplement one's diet. In the current environment, the consumption of dietary supplements is rising at a faster rate. In total, 100 gym members from two gyms in Lucknow participated in this study. Out of 100 respondents from the gym, two genders are chosen. In the demographic information gathered through an online survey, men made up the majority of gym respondents (70%) compared to women (30%). The majority of respondents are students in the 19–24 age range, are not married, and have low family incomes (less than \$25,000 when compared to other supplements, the majority of gym responders preferred protein bars and protein powder, while fish oil and minerals were seen as the least likely supplements. The poll also inquired about the individuals who frequented the gym's lifestyle and health. The majority of respondents have decent personal health status, while just a small number have exceptional health status, or between 5% and 10% of respondents have bad health status. The majority of respondents lacked any chronic illness. A small percentage of responders, 30%, smoke regularly. The nutritional status of the respondents varies, with 40% of them falling into the healthy weight group, 20% falling into the overweight category, 25% falling into the obese category, and just 15% falling into the underweight category. Only 27.30% of respondents used gym supplements, and the majority (72.70%) did not, meaning that the majority of respondents did not use supplements. The majority of responders reported experiencing headaches and other adverse effects after using the workout supplements, which is the cause of this. A small percentage of responders, 30%, smoke regularly. The nutritional status of the responders varies, with (40%) falling into the healthy weight range and (20%) falling into the overweight range. The main reason that respondents went to the gym was to lose weight because the majority of them were obese and most of them went every day. 45% of the respondents consumed supplements daily, 18.2% consumed them at the time of exercise, and the remaining respondents consumed supplements on a weekly or monthly basis.

Keywords: Dietary supplements, BCAA, Creatine, Protein bar, Gym

Introduction

Dietary supplements are any goods that include more than one dietary nutrient constituent and are intended to augment the recommended diet. In the current environment, the consumption of dietary supplements is rising at a faster rate. Dietary supplements (DSs) are commercially accessible goods that gym goers or sportsmen use as a complement to their regular diet. Dietary supplements are now being used at a startlingly increased rate. A survey indicates that the market for dietary supplements is expanding in India. The nutraceuticals market is worth \$1.8 billion in 2015. They are projected to grow to 5.2 billion people by 2022. Supplements in the form of the Dietary Supplement Health and Education Act of 1994 (DSHEA).

Indians tend to priorities healthy food and attractive appearance. Being physically appealing has grown to be highly valued and important in people's lives. As a result, the majority of people are signing up for gyms or fitness clubs. The rise in obesity, growing interest in physical fitness, and sedentary lifestyle are factors contributing to the expansion of gyms. In addition, many athletes visit the gym to boost their performance, increase their agility, lower their risk of injury, and achieve better health outcomes. The increase in non-communicable diseases is the cause of the expansion of dietary supplements. According to a World Health Organisation report (WHO, 2014) [19], there are primarily four categories of NCDs: diabetes, cancer, cardiovascular disease, and respiratory illness using supplements while working out in the gym.

There are many justifications for consuming dietary supplements, but the most frequently cited ones are health promotion and disease prevention. Other justifications include weight loss, immune system support, disease prevention, and meeting the unique nutritional needs of intense physical activity. All nutritional supplements are hard to come by and are advertised primarily to customers who are weight lifters, body builders, athletes, or sportsmen. They utilise them as a product to replace meals, boost weight gain, encourage weight reduction, develop lean muscles, burn fat, and enhance performance in terms of strength, size, and size. However, protein, carbohydrates, and creatine were the supplements that were most frequently bought. The kind of supplement used is dependent. Similar to how a coin has two sides, many dietary supplements have advantages and disadvantages as well as short- and long-term side effects. Numerous health issues like headaches, cramping in the muscles, intestinal issues, etc. are among the short-term negative effects. On the other hand, long-term side effects include gout, renal failure, kidney stones, and cardiovascular issues.

Beta-alanine

The liver makes the amino acid beta-alanine, which is also present in meat, fish, and poultry. This supplement has been demonstrated to boost exercise performance when dosed at 4-6g/day for 2-4 weeks, especially for high-intensity activity lasting 1-4 minutes, such high-intensity interval training (HIIT) or brief sprints. Additionally, it has been demonstrated to lessen neuromuscular fatigue, especially in older persons. Caffeine is a stimulant that is often included in pre-workout supplements, because it has been demonstrated to improve athletic performance for short-term, high-intensity exercise and endurance-based activities, caffeine, a stimulant, is frequently included in pre-workout supplements. The International Olympic Committee advises high performance athletes to eat 3-6mg of caffeine per kilogram of body weight one hour before workout. Although caffeine powder is marketed separately as a pre-workout supplement, the FDA has warned against using it since even very tiny doses could result in unintentional overdose.

Creatine is a naturally occurring substance created by the body from amino acids and contained in skeletal muscle. It can be gotten via red meat and shellfish. It aids in the body's production of adenosine triphosphate (ATP), which powers muscles. Popular exercise supplements like creatine are marketed to improve athletic performance, particularly for weight training. In order to enhance muscle creatine stores, the International Society of Sports Nutrition advises taking an initial dose of 5g of creatine monohydrate four times day for 5-7 days. Once muscle creatine reserves are fully saturated, stocks can be maintained by taking 3-5 g/day.

Carbohydrate Muscle recovery depends on replenishing glycogen stores after a workout with adequate carbohydrate intake, and starting the following workout with enough muscle glycogen has been demonstrated to improve exercise performance. It is advised to ingest 6-12 g of carbs per kilogram of body weight each day after exercise to completely replenish muscle glycogen stores.

L-citrulline or citrulline malate are two supplement forms for citrulline, a non-essential amino acid that is produced by the body and taken from dietary sources. The difference between the two is that the former contains only citrulline, whilst the latter contains citrulline as a starting ingredient and is combined with malic acid, which aids in supplying energy. Citrulline malate hasn't been thoroughly investigated to see if

it offers the same benefits as L-citrulline, even though some research suggests that it has health advantages. Watermelon, cucumber, legumes, meats, and nuts are examples of foods that naturally produce citrulline. Because it has been discovered to increase blood flow and protein synthesis, which in turn activates the signals in the body involved in muscle building, L-citrulline has grown in popularity among athletes.

Objective

1. To study the dietary pattern, physical inactivity among the population found in gym.
2. To study the dietary supplement used among the gym personality accruing to different demographic characteristic.
3. To study the different types of gym supplements used by the respondent.

Material and Methods

Research method: A cross-sectional method, Observation test.

Locale of the study: The experiment was carried out in Campus Gym of the library building, BBAU, Lucknow and Fitness Hub, Gym at the Raebareli road.

Period of the study: August 2022-May 2023.

Criteria of the study: Study was carried out through survey in the Google forms.

Sample: Athletes of gym.

Sampling Technique: The selection of sample will be done on the basis of random sampling.

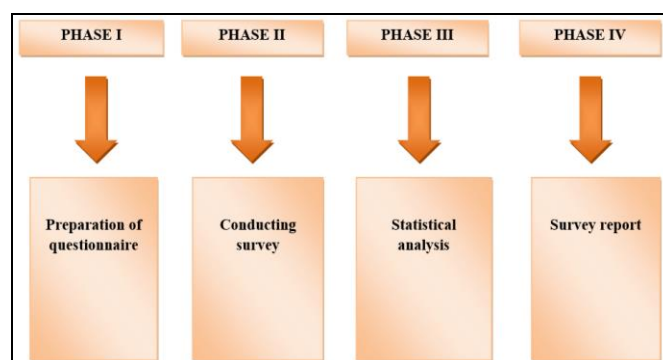
Statistical Analysis: Data were analyzed by using the IBM SPSS Statistics 20 software

Participants and procedure: The questionnaire was prepared in Google form. People were emailed, WhatsApp, an invitation to complete an online survey invites connect to join the questionnaire was circulated in social media apps like WhatsApp. The study goal was to see the knowledge about the dietary supplements among the number of participants of gym that fill this survey form. The survey was conducted in English language.

Demographics: Participants were asked to self-report their name, age, gender, e-mail, address, phone number, qualification, living arrangements and family income.

Lifestyle pattern: Participants were asked a variety of questions related to their lifestyle like their eating pattern, physical activities, health status, type of supplements they consume, side effects of the supplements, purpose of going gym and which supplement they consume currently.

Flow chart



Result and Discussion

Table 4.1: Demographics data of the respondents

Demographics	Percentage (%)
Gender	
Male	70
Female	30
Age	
19-24 year	40
25-30 years	35
30 and above	25
Occupation	
Pre - high school student	5
High school student	5.5
High school graduate	15
Diploma	20
Bachelor's degree	45
Masters/PhD	9.5
What is the marital status	
Married	20
Unmarried	80
Family Income per month	
<25000	50
25000-35000	30
>40000	20

Table 4.1 shows the participant's demographic information. The participants' ages ranged from 18 to 30 years old. The age was divided into three categories in the table: 19-24 years, 25-30 years, and over 30 years. Participants who were men outnumbered those who were women. 30% of people were female, 70% were men. The majority of gym participants were pursuing graduate degrees. The majority of respondents, or 80% of them and 20% of them, were single. Since most of the respondents were students, the average family income for 50% of them was less than 25,000 thousand, 30% ranged between \$25,000 to \$35,000, and 20% were above 45,000 thousand.

Table 4.2: Different type of supplements used by the respondents

Supplements	Percentage (%)
Protein powder	20
BCAA	12.5
Multivitamins	1.5
Fish oil	-
Protein bar	32
Energy drink	10
Creatine	5.5
Carbohydrates	10
Minerals	2.5
Herbals	5.5
Others	-

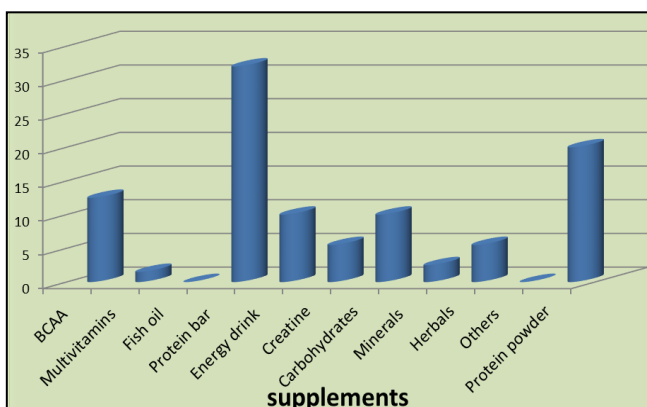


Fig 4.1: Types of supplements used by the gym respondents

The types of supplements that respondents liked are shown in Table 4.2 and Fig. 4.1. According to the survey results, protein energy bars are the most popular gym supplements, utilized by 32%, followed by protein powder (20%), BCAA (12.5%), energy drinks (10%), and carbs (10%). 5.5% of respondents used creatine, 5.5% used herbal supplements, just 2.5% used minerals, 1.5% used multivitamins, and none of the respondents used fish oil or any other dietary supplements. According to the poll, protein bars and protein powder were the most popular sports supplements.

Table 4.3: Health and life style characteristics of the gym respondents

Health and life style characteristics	Percentage (%)
Personal health status	
Poor	10
Fair	15
Good	60
Very good	10
Excellent	5
suffer from any chronic disease	
Yes	35
No	65
smoking habit	
Never	45
Current	30
Former	25
current nutritional status	
Underweight	15
Healthy weight	40
Overweight	20
Obese	25
engage in any physical activity	
< 1 month	25
1-6 month	30
> 6 month	45

The health and lifestyle traits of the gym respondents are shown in Table 4.3. The majority of responders (60%) have good personal health statuses, 10% have bad health statuses, 15% have fair health statuses, 10% have very good health statuses, and only 5% have exceptional health statuses. 35% of respondents reported having a chronic disease as a result of their sedentary lifestyle, whereas 65% reported having no such ailment. Some of the respondents also admitted to smoking, with 30% of them saying they still smoke, 25% saying they once did, and 45% saying they never do. The nutritional status of the respondents was good, with 40% of them at a healthy weight, 15% underweight, 20% overweight, and 25% obese.

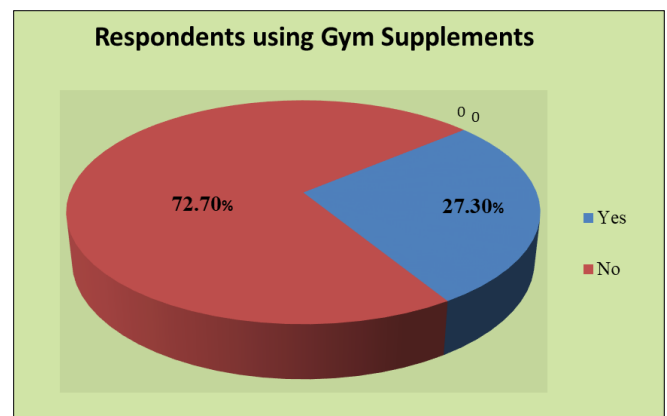


Fig 4.2: Percentage of the respondents using Gym supplements

This graph demonstrates that a large portion of the respondents weren't using the workout supplements. According to the survey, 27.30% of respondents were using gym supplements, while 72.70% of respondents said they didn't. As evidenced by this finding, respondents were more interested in whole foods than in these supplements.

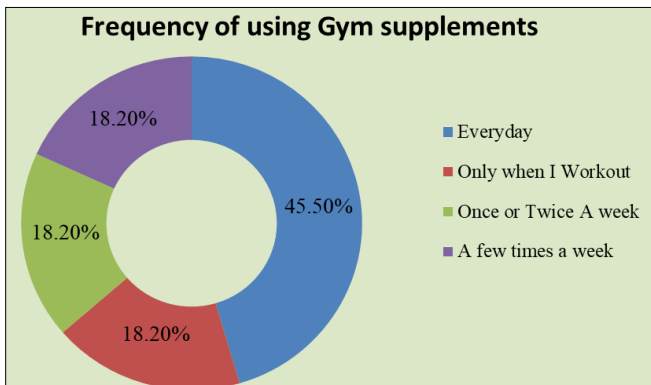


Fig 4.3: Frequency of using gym supplements among the gym respondents

This graph displays the frequency of supplement use by athletes. According to the survey, the majority of respondents regularly use supplements for the gym. 45.50% of respondents said they used gym supplements daily, 18.20% said they used them while they worked out, 18.20% said they used them once or twice a week, and 18.20% said they used them just sometimes. The findings indicate that respondents who routinely used gym supplements

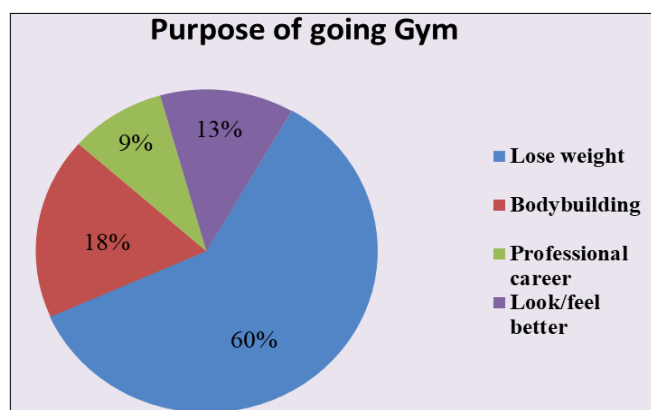


Fig 4.4: Purpose of going gym

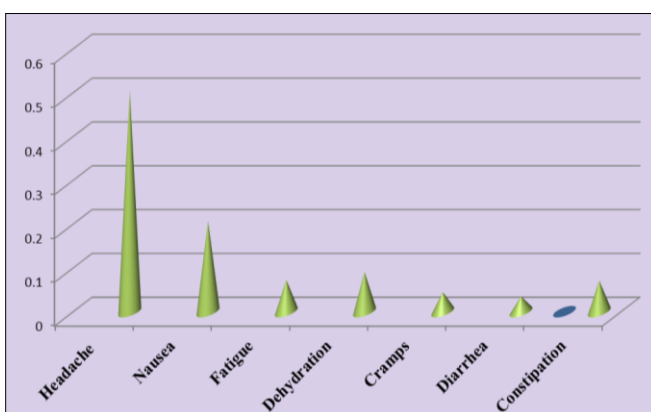


Fig 4.5: Side effects of using gym supplement

This graph displays the respondents' motivations for visiting the gym. According to the survey, the majority of respondents

went to the gym to lose weight. 60% of respondents said they attended to the gym to lose weight, 18% said they went for body building, 13% said they went for a professional career, and only 9% said they went to look or feel better. The findings indicate that respondents go to the gym primarily to lose weight, indicating that they must be obese and lead inactive lifestyles.

The negative impacts of utilising fitness supplements are displayed in this graph. According to the poll, the majority of respondents reported having headaches after taking these dietary supplements. Fifty-four percent of respondents reported having headaches, twenty percent reported nausea, seven percent reported exhaustion, nine percent reported being dehydrated, four percent reported cramps, three percent reported diarrhea, and seven percent reported constipation. The outcome demonstrates that using gym respondents has several drawbacks.

Conclusion

The purpose of the study was to learn how and why people use the supplements they are taking. In the current environment, the consumption of dietary supplements is rising at a faster rate. According to the survey, the majority of respondents are male and do not take supplements. Those survey participants who consume supplements like protein bars and protein powder report negative effects like headaches, constipation, and nausea. The majority of respondents were overweight, which is why they frequently visited the gym to lose weight and used the gym on a daily basis.

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