

A Study on Attitude of Gym Members Towards Commercial Supplements

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Abstract

Commercial supplements are dietary supplements that are manufactured products intended to supplement one's diet in the form of pills, capsules, tablets, powder or liquids. This paper is aimed to assess the attitude, use, reason and impact of commercial supplements among gym members. Today's youth especially who are going to gym are focused more on appearance and looks due to which prevalence of supplements among them is more. The data were collected using a questionnaire cum interview. A total of 220 respondents belonging to the early adulthood period (19-30 years old age group) were considered for the present study. The method of data collection is based on primary data. The sampling technique used was purposive sampling technique. In the survey it is found that majority of the respondents were consuming commercial supplements among which majority were male respondents, for purpose like maintaining fitness, gaining muscle and losing body fat. More of positive impact was experienced by them than negative impacts. Thus, the study concludes that the respondents had more of positive attitude towards the supplements because negative impacts take time to show up.

Keywords: Commercial Supplements, Early Adulthood Period, Gym.

Introduction

The consumption of commercial supplements has become popular among youths going to gym, mostly for maintaining fitness, gaining muscles, losing body fat, sports/athletic/dance training, etc.

Commercial supplements are dietary supplements that are manufactured products intended to supplement one's diet in the form of pills, capsules, tablets, powder or liquids. It provides nutrients either extracted from natural sources or that are synthetic. Under Dietary Supplement Health and Education Act (DSHEA), the responsibility of approving dietary supplements shifted from government to manufacturer. According to various surveys worldwide, the supplement industries are growing with time.

The supplements originally came into existence for athletes and sportspersons. Presently, commercial supplements can be classified into dietary and workout supplements. Dietary supplements include multi-vitamins, multi-minerals, fibres, phyto-nutrients, etc. and workout supplements include whey protein, creatine, BCAA's, glutamine, sports food, etc. Dietary supplements show slow results and are meant to fulfill dietary requirements whereas workout supplements show fast results and are meant to fulfill goal specific workout requirements.

The commercial supplements also has its bright and dark sides. The benefits are seen very fast but it also leads to negative impacts which take time to show symptoms. Short-term impacts include vomiting, bloating, sleep disruptions, headache, etc. while long-term impacts include kidney and liver malfunctioning, cardiovascular problems, gastrointestinal problems, etc.

Most importantly the selection of commercial supplements should be done very precisely under proper guidance of dietician, keeping in mind the requirement in the body, age, gender, BMI, etc.

Purpose of the Study

The purpose of this research study is to investigate the attitude of gym members of early adulthood period towards commercial supplements by identifying the issues faced by them due to the consumption of these supplements. It will also look over the probable reasons for consumption and discover the use of different types of supplements used by the members who are in early adulthood period.

Early adulthood period existing from 19 to 30 years of age, is characterized by full physical growth although hormonal changes, gaining muscles and body fat keeps taking place. The habits established in this phase, affects the health of an individual in later stages of life. The use of commercial supplements by the gym members of this age group can have effect in their later life. Thus, it is important to know their behaviour and attitude towards the use of commercial supplements and its prevalence among them.

Problem of the Study

The problem of this research study is that people today are blinded as well as guided by the trends and highly influenced by social media. They are recklessly following gym trends and consuming commercial supplements. The majority users are that of early adulthood period and this is a concerned issue. Since these supplements are not approved by the U.S. Food and Drug Administration (FDA), the information on these products are found to be sometimes mislabelled. The use of these commercial supplements by early adults imposes health risks at later stages of life. These health risks include gastrointestinal problems, impairment of fluid balance, tooth decay, cardiac diseases, liver damages, raised blood urea or creatine, muscle damage and other related health issues.

Also, people lack information, specifically factual information, regarding these supplements. They focus on instant results and increased output produced, ignoring the impact of it. Some of the factors that are contributing to its use are increased unreliable sources of information, peer pressure, maintaining ideal body weight and urge to be at par with the trending groups of society among the gym members during the phase of early adulthood.

Objectives

The main objectives of this study are :

- To determine the usage of different types of commercial supplements by gym members.
- To find out the reasons behind consumption of commercial supplements among gym members
- To identify the impact of commercial supplements on the gym members.

Hypothesis

- The energy drinks are common types of commercial supplements used by gym members.

Research Methodology

The present study was an attempt to find out the attitude, uses, purpose and impact of commercial supplements among gym members.

An appropriate methodology was carefully planned and followed meticulously to achieve goal of the study. It has been discussed in the following sub-heads -

Research Design - Descriptive & explanatory design was adopted for the research study.

Sampling Method- Purposive sampling technique was adopted for the present study as it is an intentional selection of informants based on their ability to elucidate a specific theme, concept, or phenomenon.

Area of the Study- Early adult gym members aged between 19 to 30 year old going to commercial gym in South-Western area of Patna were selected for the study.

Area name

- Boring Road
- Raja Bajar
- Khagaul Danapur
- Anishabad
- Beur Jail Road

Sample Size- A sample of 220 gym members were selected purposively for the study. Out of the total 151 males and 69 females were selected as sub-sample.

Research Tool -For the purpose of study, questionnaire was prepared for in depth interview and to obtain information from the respondent's own experiences related to consumption of commercial supplements.

Procedure of Data Collection – As stated earlier, formal contact was made with key person or in-charge of commercial gyms and permission was obtained from them. After that, gym members were selected as samples by using purposive sampling technique. Initially the investigator established rapport with the sampled subjects. The purpose of the interview was explained to each subject. The questionnaire cum interview method was used for collecting the information from respondents.

Pilot Study and Pre-Testing of the Questionnaire - In order to address the issue, the questionnaire was pre-assessed with 20-25 respondents involved in the actual study area. The pilot study pointed out some of the components which required slight modifications, these minor changes were suitably incorporated before final print of the questionnaire was done for the purpose of present study.

Coding of Responses –After completion of data collection, the numerical codes were decided and distributed for every specific responses.

Scoring –In this process, all coded relevant information provided by the respondents were transferred in a master chart which formed the basis for statistical analysis and it gave an overall picture of respondent’s score. Thus, the coded responses were used for further statistical analysis.

Data Analysis- The data was analysed using descriptive statistics i.e.tabulation and frequency distribution method. The percentage was used to find out the uses, prevalence and impact of consumption of commercial supplements. After that, editing of the results was finished, the result tables were prepared and the findings were interpreted.

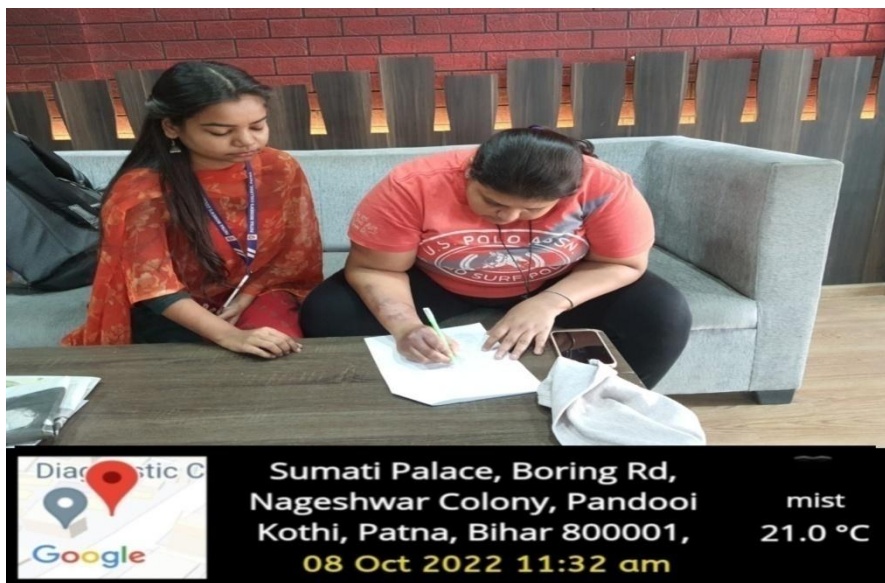


Plate 1.1 Collecting information from respondent
Area – Boring Road



Plate 1.2 Collecting information from respondent
Area-Anishabad



Plate 1.3 Collecting information from respondent
Area-Beur Jail Road



Plate 1.4 Collecting information from respondent
Area-Raja Bajar



Plate 1.5 Collecting information from respondent
Area- Khagaul Danapur

Results and Discussion

This section highlights the results of the study and the findings are arranged in the following sections:

Section 1	Results on Demographic characteristics of samples
Section 2	Results on gym history of the respondents
Section 3	Results on identification of uses of commercial supplements among gym members
Section 4	Results on purpose behind consuming commercial supplements among gym members
Section 5	Results on identification of impacts (positive and negative) of consuming commercial supplements among gym members

Section 1

Results on Demographic characteristics of samples

Table 1.1:- Demographic Data

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Age Group						
19-22	59	39.07	20	28.98	79	35.91
23-26	45	29.80	21	30.43	66	30
27-30	47	31.12	28	40.57	75	34.09
Academic Qualification						
Matriculate	6	3.97	2	2.89	8	3.63
Intermediate	22	14.56	9	13.04	31	14.09
Bachelors	85	56.29	41	59.42	126	57.27
Masters	33	21.85	13	18.84	46	20.90
Ph.D.	1	0.66	0	0	1	0.45
Others	4	2.64	4	05.79	8	3.63
Designation						
Student	59	39.07	28	40.57	87	39.54
Employed	56	37.08	14	20.28	70	31.81
Self-Employed	27	17.88	11	15.94	38	17.27
Not-Employed	1	0.66	8	11.59	9	4.09
Professional	5	3.31	1	1.44	6	2.72
Others	4	2.64	5	7.24	9	4.09
Marital Status						
Yes	29	19.20	27	39.13	56	25.45
No	122	80.79	42	60.86	164	74.5
BMI						

Under-Weight	15	9.93	4	5.79	19	8.63
Normal	100	66.22	35	50.72	135	61.36
Overweight	33	21.85	27	39.13	60	27.27
Don't Know	5	3.31	3	4.34	8	3.63
Smoking Status						
Yes	33	21.85	2	2.89	35	15.91
No	118	78.14	67	97.01	185	84.1
Health Issues Before Joining Gym						
Yes	12	7.94	18	26.08	30	13.6
No	139	92.05	51	73.91	190	86.4

Section 2

Results on gym history of the respondents

Table 2.1:- Purpose Behind Joining Gym

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Lose Body Fat	37	24.5	52	75.36	89	40.45
Gain Muscle	70	46.35	9	13.04	79	35.90
Maintain Fitness	77	50.99	36	52.71	113	51.36
Dance Training	3	1.98	6	8.69	9	4.09
Sports/ Athletic Training	23	15.23	3	4.34	26	11.81
Improve Physical Condition	40	26.41	13	18.84	53	24.09
Following Trends	5	3.31	3	4.34	8	3.63
Others	4	2.64	2	2.89	6	2.72

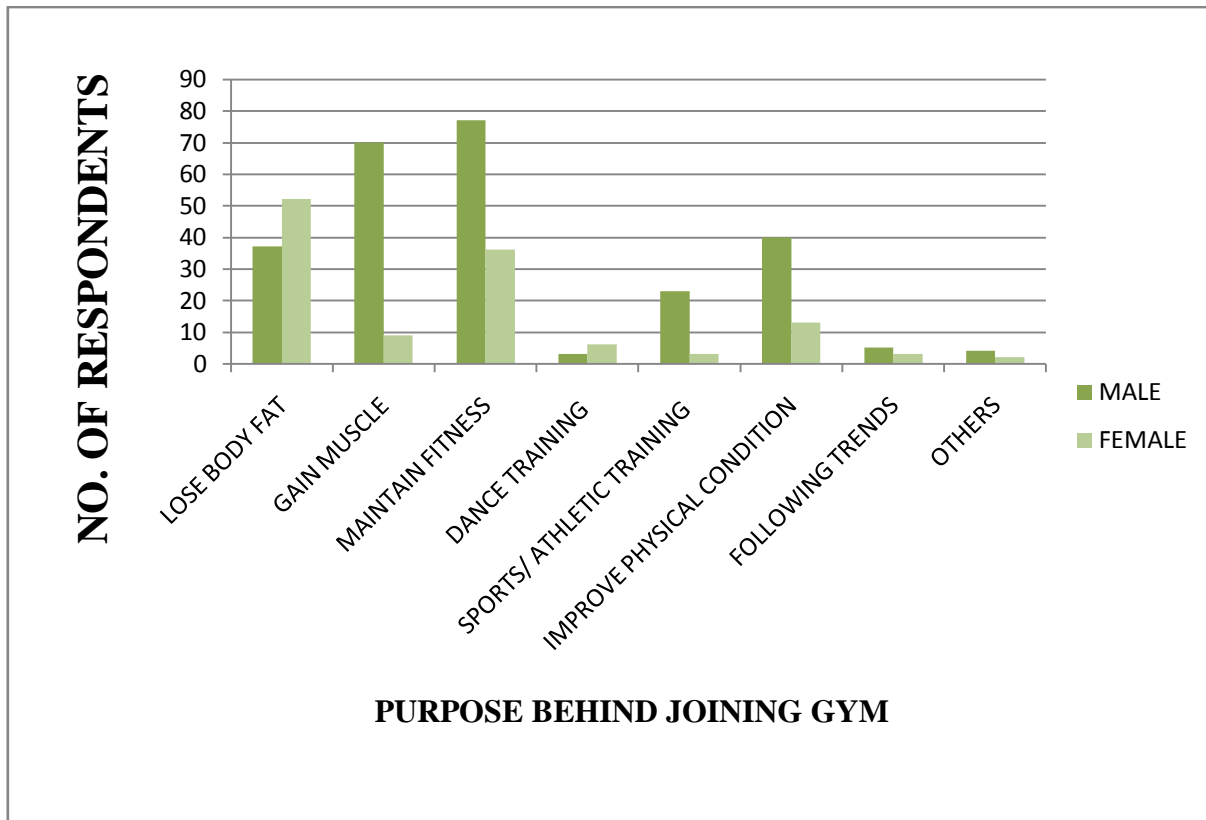


Fig 2.1:- Purpose Behind Joining Gym

Interpretation: This figure shows that almost half of the population (51.36%) joined the gym to maintain fitness out of which 77 were male and 36 were female. Majority (50.99%) of the male respondents joined the gym to maintain fitness while in females majority (75.36%) joined the gym to lose body fat.

Table 2.2:- Kinds of Training

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Cardio Training	60	39.73	38	55.07	98	44.54
Weight Training	132	87.41	26	37.68	158	71.81
Fat Loss Training	31	20.52	39	56.52	70	31.81
Yoga	20	13.24	31	44.29	51	23.18
Zumba	22	14.56	37	53.62	59	26.81
Others	9	5.96	1	1.44	10	4.54

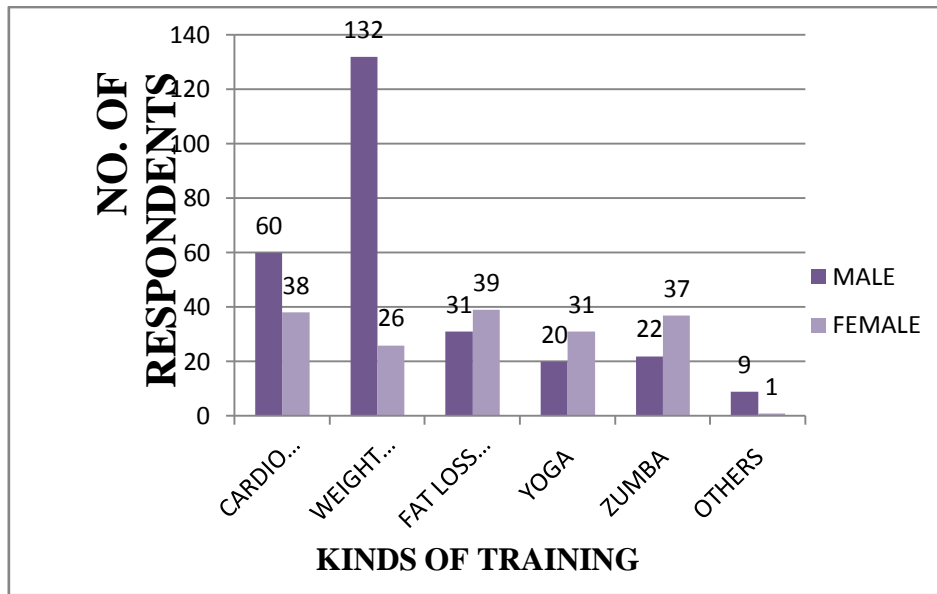


Fig 2.2:- Kinds of Training

Interpretation: This figure depicts that a very large number of respondents (158) carried out weight training in their sessions out of which 87.41 per cent were male and 37.68% were female. Although a majority (56.52%) of female carried out fat loss training.

Table 2.3:- Follow Specific Diet

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Yes	82	54.3	49	7.01	131	59.5
No	42	27.81	11	15.94	53	24.1
Sometimes	27	17.88	9	13.04	36	16.36

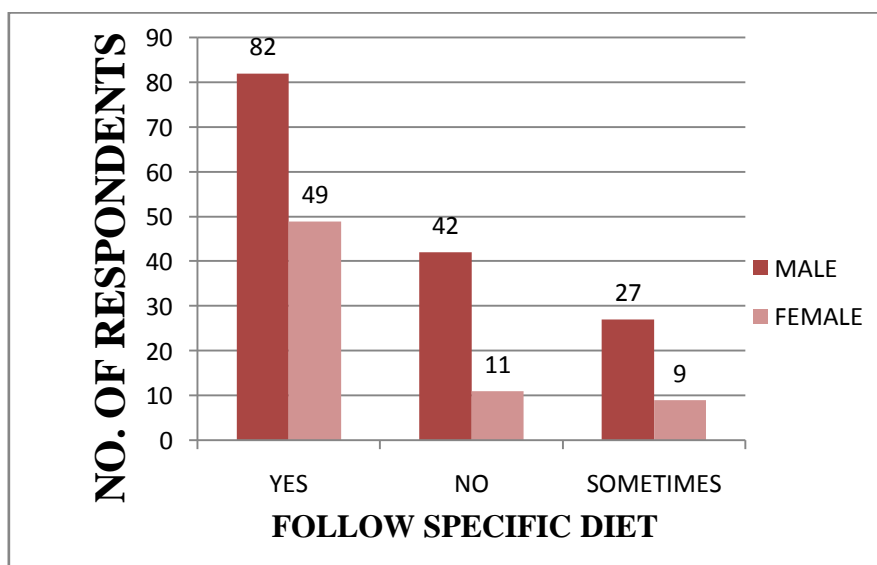


Fig 2.3:- Follow Specific Diet

Interpretation: The figure shows that 131(59.5%) respondents followed some kind of specific diet which included 82 male respondents and 49 female respondents. Significantly small proportion (16.36%) of the population followed the diet sometimes according to the need.

Section 3

Results on identification of uses of commercial supplements among gym members

Table 3.1:- Sources of Information

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Social Media	43	28.47	22	31.8	65	29.55
Internet	42	27.81	12	17.39	54	24.54
Advertisement	8	5.29	5	7.24	13	5.90
Family Members	4	2.64	1	1.44	5	2.27
Health Professionals	20	13.24	4	5.79	24	10.90
Gym Trainer	39	25.82	23	33.33	62	28.18
Magazine/ Newspaper	6	3.97	1	1.44	7	3.18
Friends/ Peer Group	20	13.24	9	13.04	29	13.18
Nutritional Company	13	8.6	0	0	13	5.90
Others	2	1.32	0	0	2	0.90

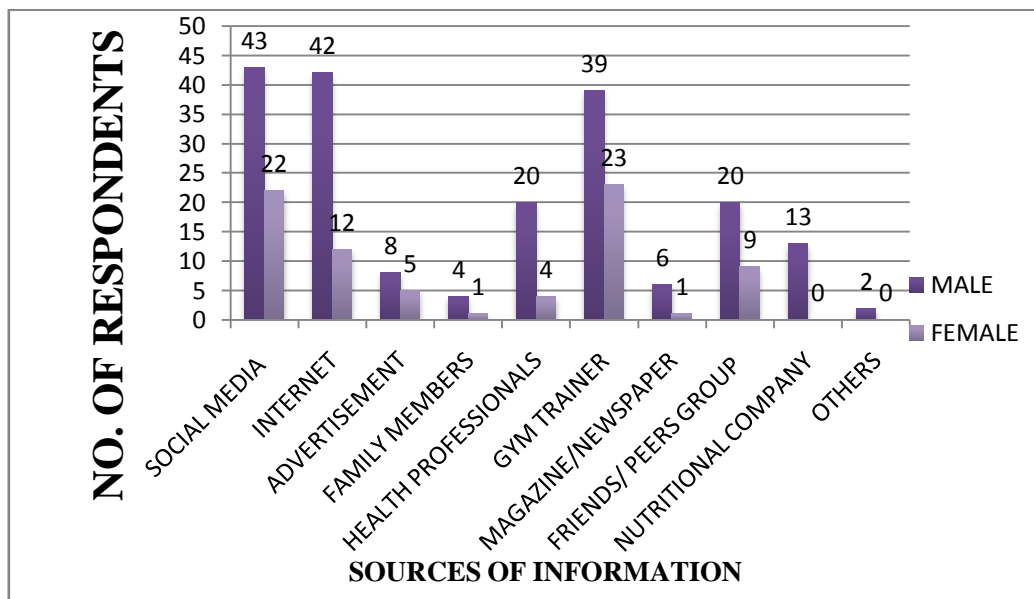


Fig 3.1:- Sources of Information

Interpretation: Fig 3.1 clearly depicts that majority of the respondents (29.55%) came to know about nutritional supplements through social media followed very closely by gym trainers (28.18%) and internet (24.54%).

Table 3.2:- Consuming Supplements

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Yes	88	58.27	33	47.28	121	55
No	63	41.72	36	52.17	99	45

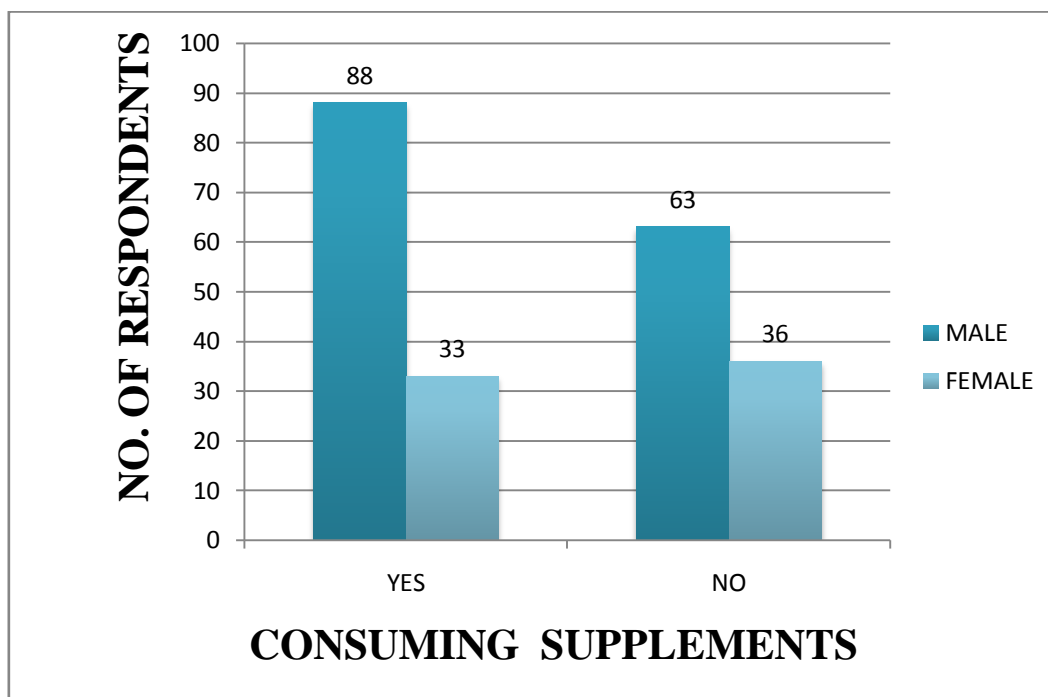


Fig 3.2:- Consuming Supplements

Interpretation: According to fig 3.2, 55 per cent of the total respondents were consuming supplements and 45% were not consuming supplements. Comparatively, more male respondents were supplement consumers.

Table 3.3:- Dietary Supplement Consumption

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Multi-Vitamins	58	38.44	29	42.02	87	39.54
Multi-Minerals	14	9.27	15	21.73	29	13.18
Calcium & Magnesium	27	17.88	15	21.73	42	19.09
Vitamin A	7	4.63	5	7.24	12	5.45
Vitamin B	8	5.29	9	13.04	17	7.72

Complex						
Vitamin C	16	10.59	10	14.49	26	11.81
Vitamin D	27	17.88	30	18.84	40	18.18
Vitamin E	14	9.27	6	8.69	20	9.09
Irons	15	9.93	7	10.14	22	10
Fibres	19	12.58	8	11.59	27	12.27
Plant Protein	12	7.94	4	5.79	16	7.27
Phyto-Nutrients	1	0.66	1	1.44	2	0.90

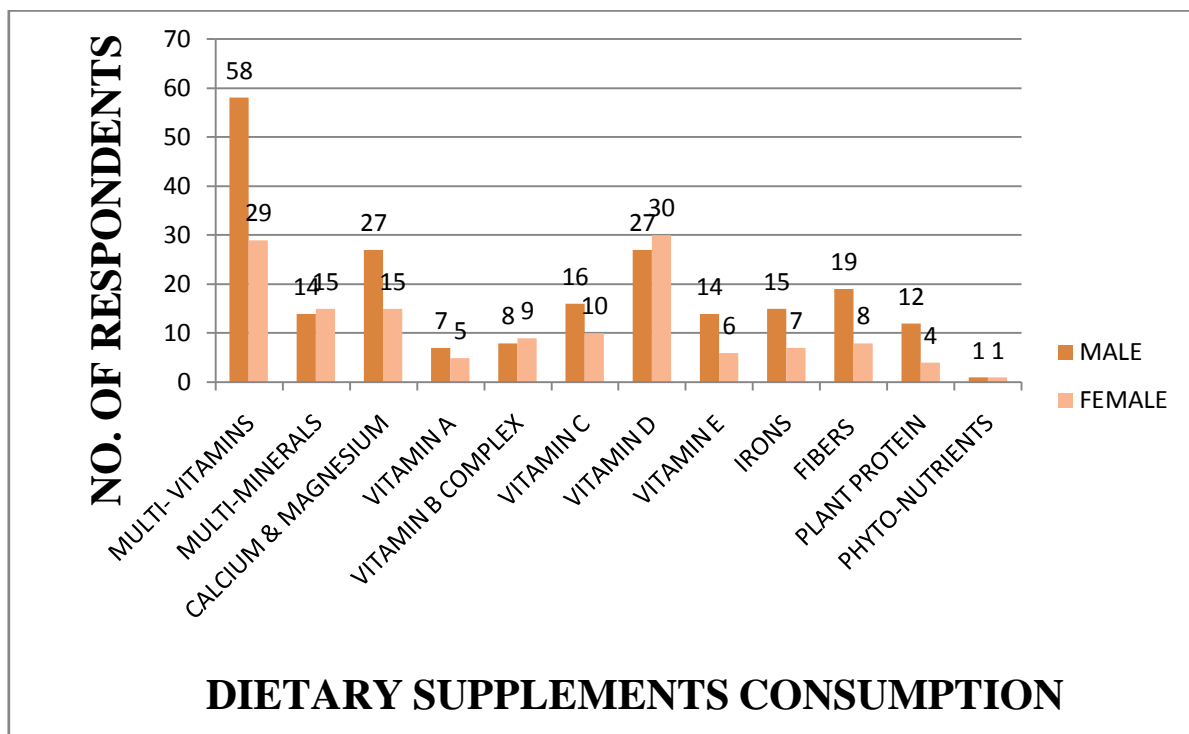


Fig 3.3:- Dietary Supplements Consumption

Interpretation: Fig 3.3 concludes that multi-vitamins was the most consumed dietary supplements among male consumers being 58(38.44%) and female consumers being 29(42.02%). While least consumed dietary supplement is isphyto-nutrients with 1 consumer from both male and female population.

Table 3.4:- Workout Supplements Consumption

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Whey-Protein	66	43.7	19	27.53	85	38.63
BCAA	18	11.92	3	4.34	21	9.54
Mass	5	3.31	1	1.44	6	2.72

Gainers						
Creatine	18	11.90	0	0	18	8.18
Energy Drinks	34	22.51	22	31.88	56	25.45
Energy Bars	14	9.27	9	13.04	23	10.45
Fat Burner	6	3.97	5	7.24	11	5
Glutamine	5	3.31	0	0	5	2.27
Nitrox	1	0.66	0	0	1	0.45
Others	2	1.32	0	0	2	0.90

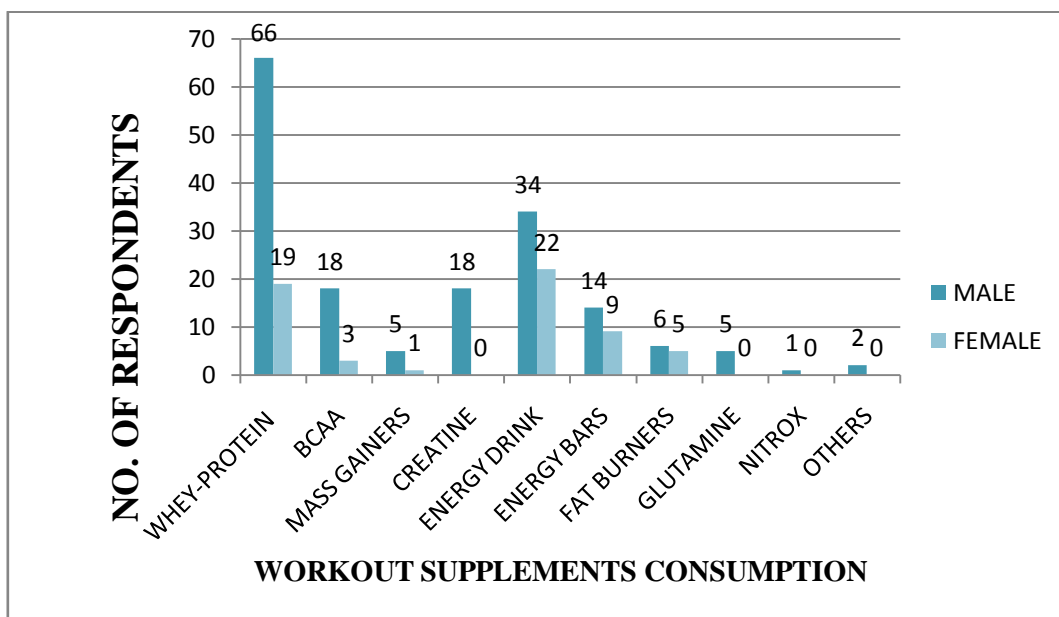


Fig 3.4:- Workout Supplements Consumption

Interpretation: Fig 3.4 clearly depicts that whey protein was the most consumed workout supplement by the population with 43.7% male consumers and 27.53% female consumers. Whey protein was followed by energy drink (24.45%). Also, majority of female respondents (31.88%) consumed energy drink.

Section 4

Results on purpose behind consuming commercial supplements among gym members

Table 4.1:- Reason for Consumption

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Boost Energy	27	17.18	15	27.73	42	19.09
Reduce Body Fat	21	13.9	23	33.33	44	20

Enhance Athletic Performance	14	9.27	3	4.34	17	7.72
Health Benefit	39	25.22	26	37.68	65	29.54
Muscle Gain	45	22.8	6	8.69	51	23.18
Following Trend	3	1.98	0	0	3	1.36
Enhance Endurance	11	7.28	6	8.69	17	7.72
Others	2	1.32	0	0	2	0.90

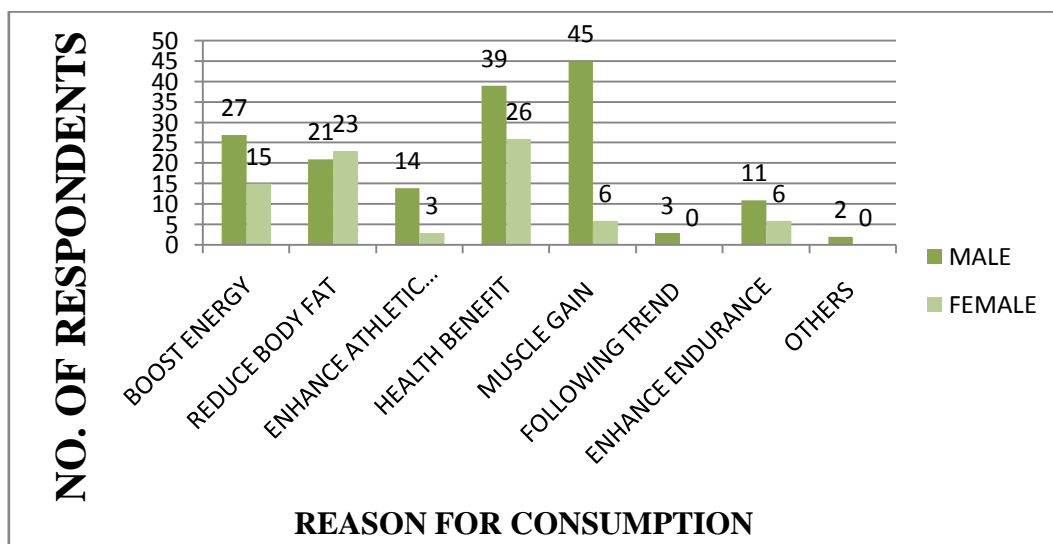


Fig 4.1:- Reason for Consumption

Interpretation: This figure reveals that most of the respondents started using commercial supplements for health benefits (29.54%), muscle gain (23.18%), reduce body fat (20%) and boost energy (19.09%). Health benefits was the major reason for supplement consumption among male (25.22%) while reducing body fat was the major reason among females(33.33%).

Section 5

Results on identification of impacts (positive and negative) of consuming commercial supplements among gym members

Table 5.1:- Short-Term Problems Faced

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Bloating	4	2.64	0	0	4	1.81
Acne	1	0.66	1	1.44	2	0.90

Indigestion	0	0	0	0	0	0
Diarrhoea	0	0	0	0	0	0
Vomiting	0	0	1	1.44	1	0.45
Sleep Disruptions	3	1.98	0	0	3	1.36
Other	0	0	0	0	0	0

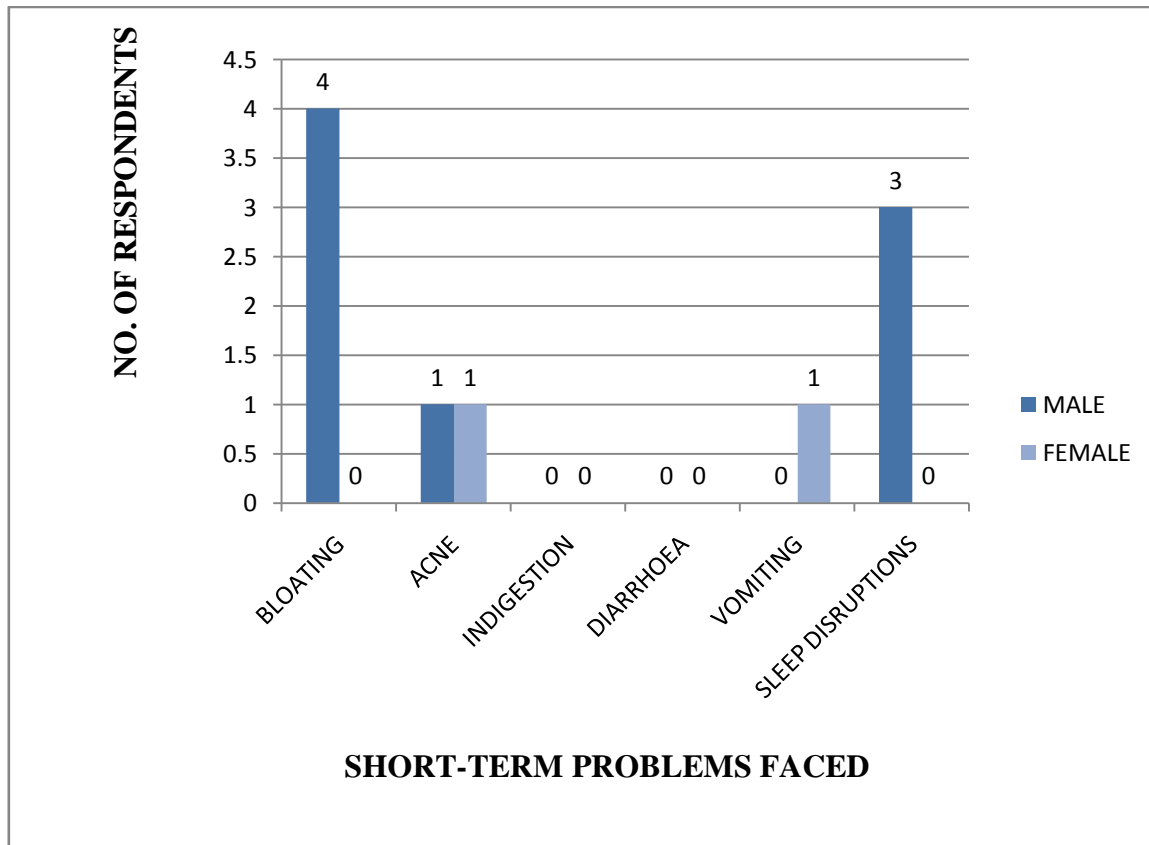


Fig 5.1:- Short-Term Problems Faced

Interpretation: The figure illustrates that short-term problems faced by supplement consumers were bloating (1.81%), sleep disruptions (1.36%), acne (0.90%) and vomiting (0.45%).

Table 5.2 Long-Term Problems Faced

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Kidney Malfunctioning	0	0	0	0	0	0
Liver Malfunctioning	0	0	0	0	0	0
Sleeping Disruptions	1	0.66	0	0	1	0.45
Cardiovascular	0	0	0	0	0	0

Problems						
Gastrointestinal Problems	0	0	0	0	0	0
Others	0	0	0	0	0	0

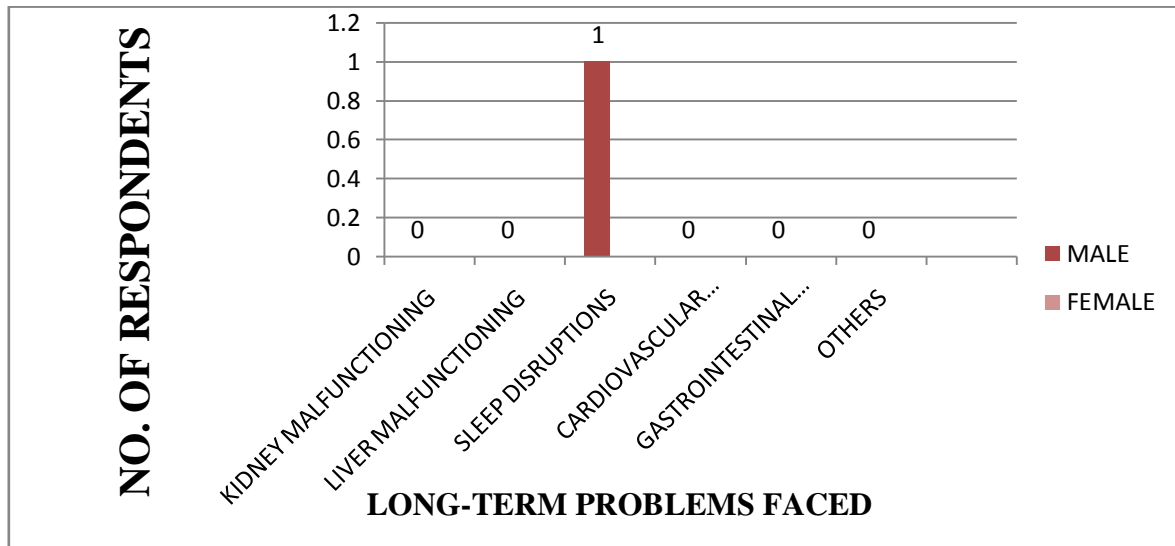


Fig 5.2 Long-Term Problems Faced

Interpretation: This figure concludes that only sleep disruption was faced by one male respondent which represents 0.45 per cent of total supplement consuming population.

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Build Muscles	58	38.41	9	13.04	67	30.45
Lose Body Fat	20	13.24	19	27.53	39	17.72
Fulfil Daily Requirement	30	19.86	15	21.73	45	20.45
Reduces Workout Stress	15	9.93	7	10.14	22	10
Enhance Performance	29	19.2	13	18.84	42	19.09
Other	3	1.98	1	1.44	4	1.81

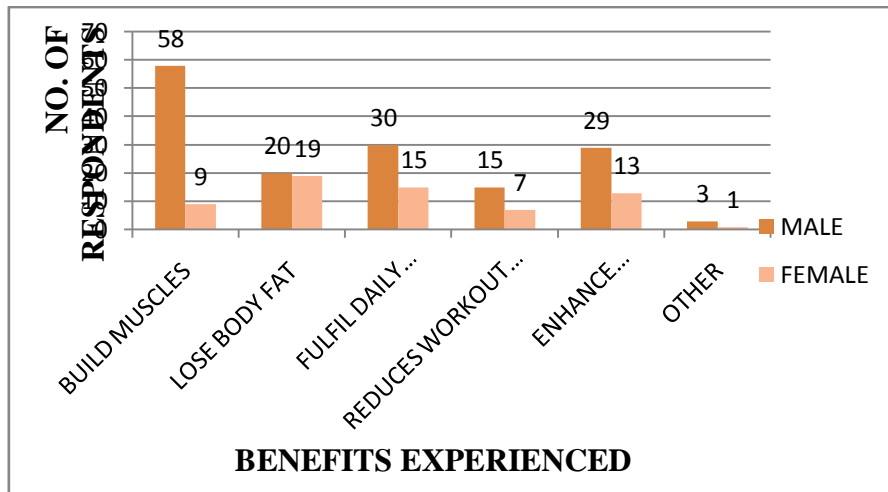


Fig 5.3:- Benefits Experienced

Interpretation: Fig 5.3 concludes that the supplement consumers experienced positive changes which included building muscles (30.45%), fulfilling daily requirements (20.45%) enhance performance (19.09%), lose body fat (17.72%), reduce workout stress (10%) and others (1.81%). Building muscle was the main benefit experienced by male respondents (38.41%) while losing body fat was main benefit experienced by female respondents (27.53%).

Table 5.4:- Is it Safe to Use

Variables	Male N=151	Percentage (68.64%)	Female N=69	Percentage (31.36%)	Total N=220	Percentage (%)
Yes	87	57.61	32	46.37	119	54.1
No	22	14.56	15	21.73	37	16.8
May Be	31	20.52	17	23.63	48	21.81
Don't Know	8	5.29	5	7.24	13	5.90

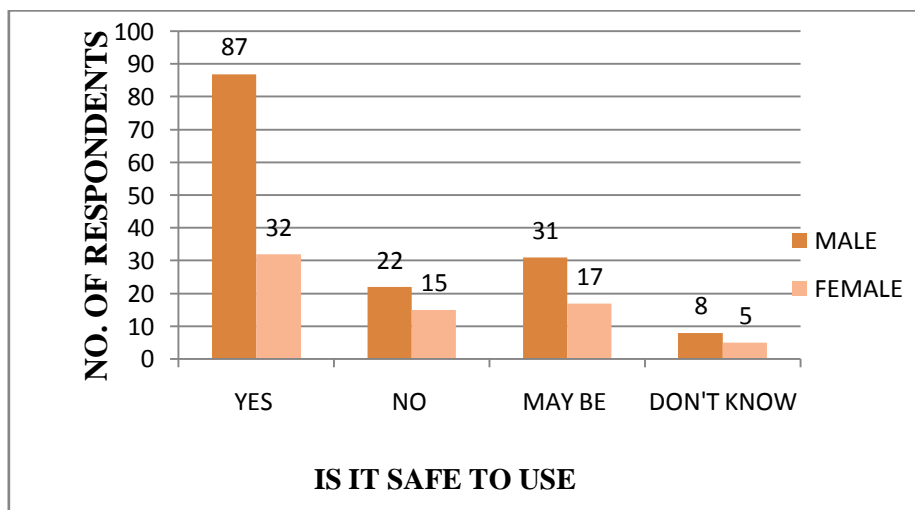


Fig 5.4:- Is it Safe to Use

Interpretation: According to fig 5.4, 54.1 per cent of the population were of the opinion that commercial supplements are safe to use while 5.90 per cent did not had any opinion on its safety. Also, majority of male and female respondents were in favour of its safety.

Conclusion

This study shows the uses, reason and impacts of commercial supplements among gym members going to commercial gym in south-western area of Patna. Before understanding the usage of supplements, the demographic data and history related to joining was studied to understand the profile of the respondents. Out of 220 respondents majority were male. Most of the sample were students (19-22 yrs.) having normal BMI. Majority were non-smokers and few of the respondents had health issues like PCOS, asthma, fatty liver, thyroid and PCOD. Most of demographic data was consistent with the study done by Mahmood et al. (2021) on use of nutritional supplements in gym members of Sulaymaniyah City, Iraq and Ashok et al. (2018) on use of dietary supplements in Bangalore City, India.

The respondents joined the gym between the age of 21-25 years as people at this stage are independent and does not have a lot of responsibilities in life. They focus more on their self-development. The purpose behind joining gym was maintaining fitness, losing body fat and gaining muscles, for both male & female alike. They mostly spent 1-2 hours daily in the gym doing mostly weight, cardio and fat loss training. Almost half of them followed specific diet and did not have any personal instructor.

Regarding the supplements, 58.27 per cent had/were consuming supplements out of which male users were in majority. Most of them opted for online source of purchase. Multi-vitamins and whey protein was the most consumed dietary supplement and workout supplement respectively. This result is in line with the results of other studies (Mazilli et al. 2021 and Frances Gizis et al. 2004). Fat burners were popular among female due to the fact that their purpose behind joining gym was to lose fat. Most of them were using the supplements since they joined the gym. Pattern of consumption was once or twice a day, mostly after exercise.

Concerning the attitude, majority of the respondents were of the opinion that the commercial supplements are safe to use. Most of them has not influenced anybody to use them but contrary to this most of them would like to influence others to use supplements in future.

Almost all the results were in correspondence with the studies already done on use or prevalence of supplements in different geographical locations.

Recommendations

1. Gymming at a very early age should not be promoted unless and until it concerns medical issues like extreme obesity or athletic reasons. For this, gyms should frame criteria for accepting members.
2. Each and every gym should have a professional dietician or nutritionist to guide the members properly on what diet to take and how to proceed with their workout sessions without harming their health.
3. Any supplement should not be overdosed or used unless it becomes the necessity because it has harmful effects on our health. The gym members should follow the RDA given by NIN and ICMR.

4. Educational programmes should be carried out for gym members to spread the awareness regarding its use, impact and its role in the body.
5. Government should take initiative and interfere to regulate the manufacturing and sale of these supplements because it is reported that about 70 per cent of the dietary supplements available in Indian market are unauthorized.
6. The commercial supplements should be bought from reliable sources to ensure quality and originality of the product.
7. There is not enough study on the impacts of commercial supplements. Hence, a detailed study on its impact should be done in future to highlight its impact and therefore create awareness.
8. Future study regarding prevalence, use and impact of commercial supplements should be done on the middle adulthood to explore more aspects of the study.

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