



P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 5.38  
IJPESH 2019; 6(3): 253-256  
© 2019 IJPESH  
www.kheljournal.com  
Received: 26-03-2019  
Accepted: 30-04-2019

**Shailendra Singh Rana**  
Assistant Professor, Amity  
University, Lucknow, Uttar  
Pradesh, India

**Dr. Ritu Agarwal**  
Assistant Professor, Amity  
University, Lucknow, Uttar  
Pradesh, India

## Legal status and use of dietary supplements a study among gym goers in Lucknow, Uttar Pradesh

**Shailendra Singh Rana and Dr. Ritu Agarwal**

### Abstract

Urban population in India in general and youth among them in particular have become more health conscious. India where more than 65% of population is below the age of 35 years makes a lucrative market for the business of health related products. A big dietary supplement market which consists of local and imported dietary supplements is one such business. These supplements are used by adolescents primarily for enhancing their physical appearance. This research paper is an attempt to study the use of dietary supplements among the gym-goers in Lucknow, Uttar Pradesh.

**Keywords:** Dietary, exercise, gym, health, Lucknow, supplements, youth

### Introduction

Unlike the previous generation current generation is more health conscious which has resulted in the mushrooming up of gyms, yoga centers, health clubs etc. not only in big cities but also in small ones. Products like low fat chips, guilt free snacks etc. are also the result of growing health consciousness. There are other products which are mostly used by the persons hitting the gyms. Dietary supplements fall in this category. They are also known as food supplement or nutrition supplement and are intended to supplement the diet by providing nutrients such as minerals, fibres, vitamins, protein or amino acids etc. that may be missing or may not be consumed in sufficient quantities through a diet, therefore supplements work as a 'add on' to the diet of a gym-goer. All the dietary supplements are not very easily available in the market and are specifically marketed to the target customers consisting of weight lifters, body-builders, sportsmen or athletes. They use them as a product to replace meal, enhance weight gain, promote weight loss, build lean muscles, fat loss, improving strength, size and/or performance.

A good body everyone admires is a dream of every person specially youth. For fulfilling this dream few of them starts hitting the gym but in expectations of quick results many of them either quit very soon or start taking dietary supplements without knowing their body requirements and without taking any professional guidance. There are very few who make exercising their part of life. In India these body building supplements have been replacing the traditional products ghee, butter, yoghurt, curd, dry fruits etc. used by the earlier generations of gym-goers. Use of supplements among the gym-goers in their 20s and 30s is on rise and this presents a big market for various supplement manufacturers. A parallel market of fake, adulterated and duplicate supplements has also emerged and there are several cases where the use of such non original supplements from grey market has resulted in the damage of kidneys, livers, problems of high blood pressure, headache and even death of their users.

Following are the dietary supplements most commonly used by the gym-goers-Branched chain amino acids (BCAA)-BCAAs help in stimulating protein synthesis which a normal protein when taken in isolation cannot do on its own so they are generally taken along with some protein. These days BCAAs are already present in some good proteins one consumes so many gym-goers avoid taking them separately.

Casein- It is a protein derived from dairy sources. It is also called bed time protein because of its slow absorption by the body which is required to continuously feed the muscles overtime and to prevent them from going into catabolic stage, a stage of muscle break down due to long hours of non-eating.

**Correspondence**  
**Shailendra Singh Rana**  
Assistant Professor, Amity  
University, Lucknow, Uttar  
Pradesh, India

**Creatine**-This supplement is used by gym-goers and athletes to improve their strength and size. Creatine is found in meat and fish. Human body also produces creatine in kidney and liver and is stored in muscles. High doses of creatine may result in the damage of kidney and livers.

**Glutamine**-Like creatine glutamine is also found naturally in human body. Gym-goers use it for post workout recovery.

**Mass gainers**-Mass gainers are proteins which are cheaper than whey due to its low protein content and high fat and carbohydrates. These are generally used by naive gym-goers or by those who cannot afford to buy expensive whey proteins.

**Multivitamins**-Unlike whey, casein or mass gainers multivitamins are not taken by gym-goers for becoming huge but they help in ensuring that a gym-goer is getting adequate nutrients for the body to function properly.

**Omega 3 fatty acids**- These are essential fatty acids that a human body doesn't produce on its own but are essential for good health.

**Pre/Post workout**-Pre work outs are taken before exercise and may include creatine, oats, BCAAs etc. Post work out are consumed immediately after training session and generally includes protein powders.

**Whey Protein**- It is the most popular and most commonly dietary supplement used by gym-goers. Like casein whey is also produced from dairy sources but it is taken immediately after workout due to its fast absorption by human body and promoting the growth of lean tissue mass. It again has three types-hydro whey, isolate whey and concentrate whey. Hydro whey is the most expensive form of whey and is most easily absorbed by the body. Isolate whey contains 90-95% protein whereas the protein content in concentrate whey may vary from 20 to 89% depending on the brand.

Use of dietary supplements among the youth in India is prevalent but negligible work has been done on the use of dietary supplements among youth in general and gym-goers in particular. This research paper is a humble attempt in this direction.

### **Dietary supplement market**

The global market of dietary supplements is estimated around 80 billion dollars with a growth rate of 10%. A joint study conducted in 2015 by Associated Chamber of Commerce & Industry (ASSOCHAM) and RNCOS estimated the size of dietary supplements market in India at 2 million dollar and estimated it to get doubled by the year 2020 clocking a compound annual growth rate of 16% during five years. Same study also found that 60 to 70% of dietary supplements sold in India were counterfeit, fake, unregistered and unapproved and for an ordinary buyer it is not easy to identify them. Another survey conducted in 2012 by ASSOCHAM Social Development Foundation revealed that 78% adolescents in urban India daily consumes dietary supplements in one form or other for enhancing their physical appearance, increasing their energy levels and improving immunity undermining the side effects of the supplements they were using. Fitness Guru, a health and fitness magazine cites reports claiming that between 70 and 100% of all athletes use dietary supplements. It further adds that in India too, 80 to 90% of elite athletes consume dietary supplements. The Dietary supplements used most commonly were vitamins, and antioxidants (84%), minerals (73%), protein & creatine supplement (53%) and ergogenic supplements(including coenzyme Q10, caffeine, ginseng (52%).

### **Legal status of dietary supplements in India**

The Food Safety and Security Act 2006 list down the ingredients that a product should have in order to be classified as a dietary supplement. In India there is a very thin line between "drugs/ medicines" and "nutritional supplements" which is one of the potential threats for manufacturing and sale of food/health supplements such as "Dietary food supplement", "Food supplements", "Nutritional supplements", "Health supplements", which leads to the problem of its categorization in the category of "Food" or "Drugs". Practically all ingredients of a nutritional supplement, known through different nomenclatures, include the ingredients which may fall into the category of drugs as well as food supplements. In the year 2006, India has passed Food Safety and Standard (FSS) Act which is integrated food law and serves as a single reference point in relation to regulation of food products including dietary supplements. A dietary supplement may be defined as a product taken by mouth that contains a dietary ingredient and / or a new dietary ingredient intended to supplement the diet. However, despite the legislative mandate, no rules under Section 22 of the FSS Act have been notified till date. As of now India does not have the strict and clear cut guidelines related to this rapidly growing field. Many agencies viz. HADSA (Health Food and Dietary Supplements Association), NIN (National Institute of Nutrition) FDTRC (food and Drug Toxicology Research Centre) NNMB (National Nutrition Monitoring Bureau) are working to set up a guidelines for this emerging field. For selling dietary supplements in India one needs to obtain license from Food Safety and Standards Authority of India (FSSAI). Major exclusive retailers of supplements in India are-Neulife and Guardian. Major online sellers of dietary supplements in India are- Amazon, Healthkart snapdeal, flipkart and paytm. Healthkart is the one which only deals in supplements and other products related with health and fitness industry only.

### **Research objectives**

This research study attempts to get an insight into the use of dietary supplements among the gym-goers in Lucknow, Uttar Pradesh.

### **Research methodology**

Respondents: Gym-goers in Lucknow city

Sample size: 100

Sampling technique: Stratified random sampling

Data used: Primary

Data collection tool: Structured questionnaire

Study area: Lucknow

### **Results and Discussion**

Out of total respondents I surveyed, 88% (which is 10% above the average reported by ASSOCHAM in the study conducted in 2012 in top Indian cities) were using one or more types of dietary supplement. Average age of respondents was around 27 years and the average amount they spent monthly on supplements was Rs. 3867. Among 14 female respondents only 3 had been found to use any supplement which is only 21% whereas almost every male respondent was using some type of supplement which suggests that use of dietary supplements is more common among males than females. There were 28% respondents who were using more than one supplements, this percentage was comparatively higher (32%) in case of online shoppers than

non online shoppers (20%). More experienced gym-goers have been found to use multiple supplements and they were also comparatively spending more amount of money on supplements.

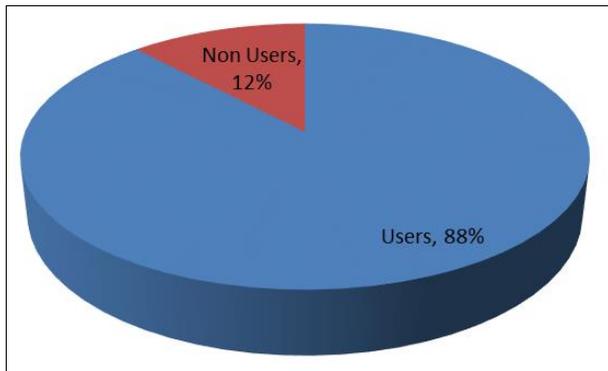


Fig 1: Users of dietary supplements

The most commonly use supplements among the gym-goers were whey (31%) and mass gainers (28%). Out of 25% gym goers who were using more than one supplement whey was the most common supplement, others include mass gainer, Multivitamins, omega, BCAA, creatine and glutamine.

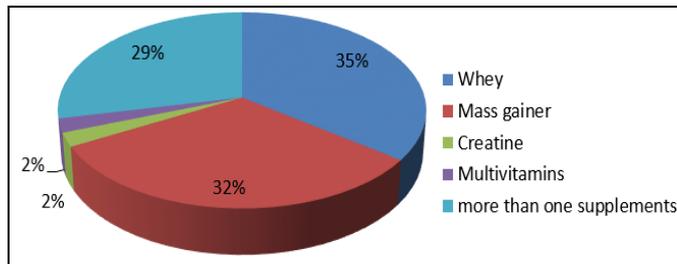


Fig 2: Users of dietary supplements by supplement type

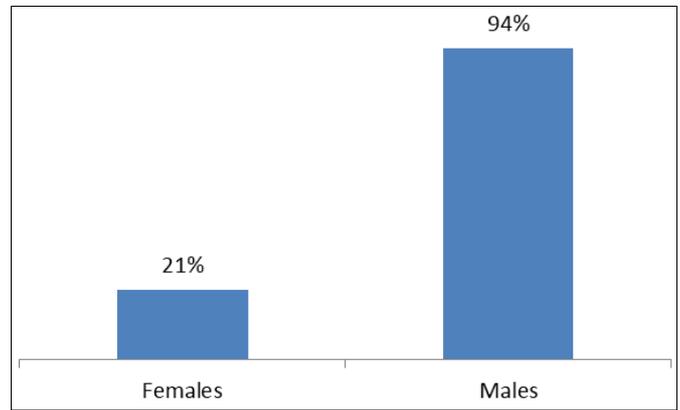


Fig 3: Gender wise Use of Dietary Supplements

Though the warning that such supplements are not intended to be used by persons below 18 years of age is clearly mentioned on dietary supplements, out of two minor respondents one was consuming them without knowing the side effects. We also found one respondent who was using steroid for fast muscle gains. 68% respondents were suggested to use the supplements by their gym instructor, around 24% by friends and 8% started taking supplements after voluntarily exploring on internet and books.

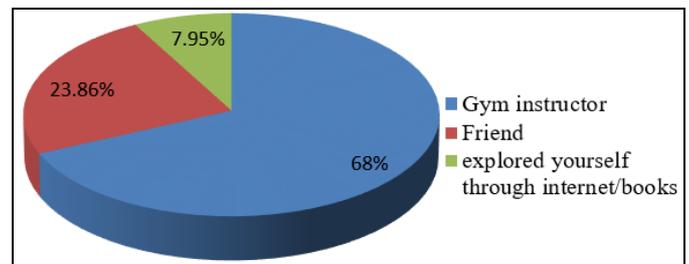


Fig 4: Use of Supplement First Suggested By

Table 1: Descriptive Statistics

	Age	Years of exercising	Average money spent on supplements (monthly)
Mean	26.96	4	3867
Standard deviation	5.94	3.36	2311
Median	26	3	4000

Highest number (37.5%) of gym-goers purchase the supplements online. Number of gym-goers consuming the supplements from last few months/years is skewed on negative end. 24% of supplement users have been found to consume the supplements from more than 3 years. Daily use

of supplements was also very common among them. 75% of supplement users claimed to use the supplements daily whereas remaining 25% used supplements only on the days they did exercise.

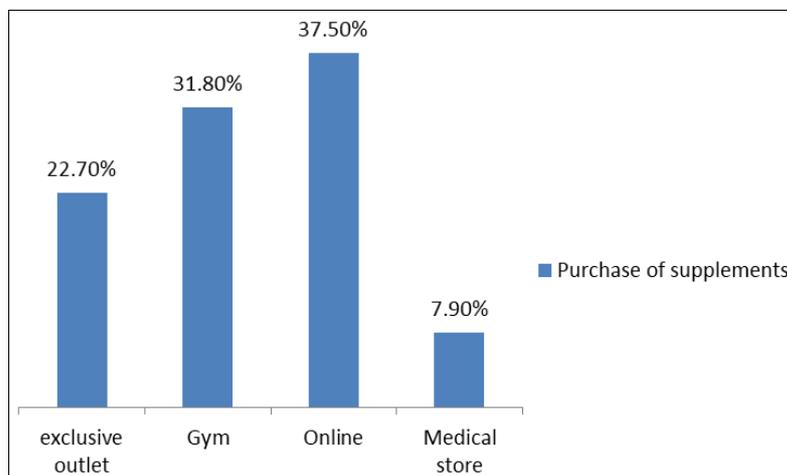


Fig 5: Sources of purchase of supplements

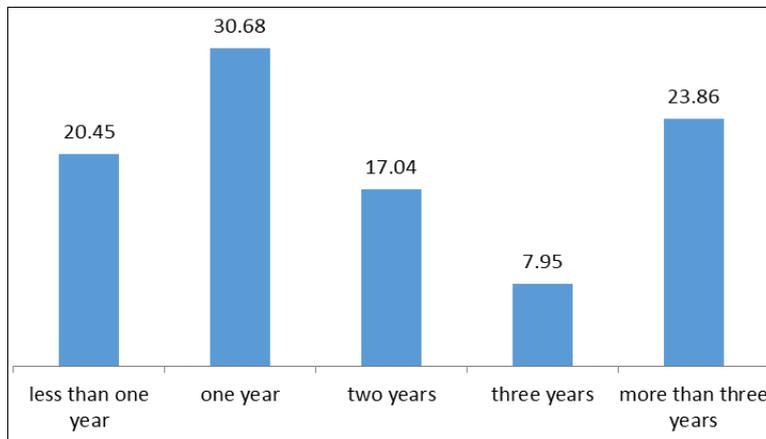


Fig 6: Years of Consumption of Supplements

In this survey I also assessed the gym-goers’ trust in the accuracy of information provided on the labels of supplements and the result was not very surprising. 83.92% users of imported supplements had trust in the accuracy of label information whereas this percentage was very low (28.12%) in case of Indian supplement users.

Exclusive outlets for supplements in Lucknow are- Neulife in Hazratganj and commitfit.in in Gomitnagar area. Besides the exclusive outlets major gyms also sell supplements irrespective of gym membership of the person purchasing.

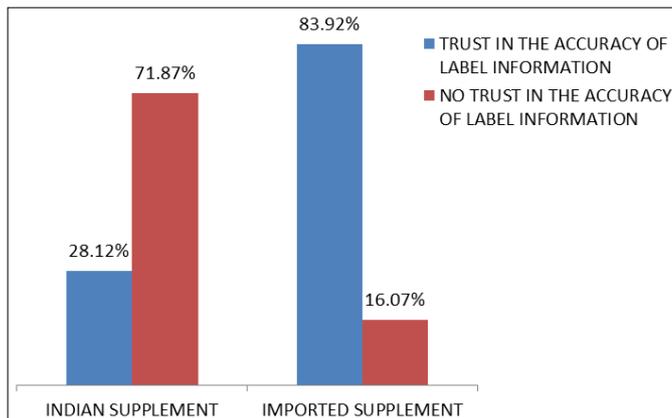


Fig 7: Trust in the accuracy of label information

**Conclusion**

To my knowledge this survey was unique for the reason that this was the first such survey in Lucknow and also in Uttar Pradesh that included a significant population of gym-goers for assessing the use of dietary supplements.

**References**

1. <http://www.assochem.org/newsdetail.php?id=5370> accessed on 8<sup>th</sup> March 2017.
2. Maity A, Chakrabarti T, Mandal S. Current Status of Dietary Supplements in India. The Pharma Review, Kongposh Publications, 2011.
3. <http://www.fitnessguru.co.in/nutraceuticals-sports-nutrition/> accessed on 8<sup>th</sup> March 2017.
4. Government Accountability Office report. 2009 Dietary supplements. FDA Should Take Further Actions to Improve Oversight and Consumer Understanding accessed on 11<sup>th</sup> March, 2017. from <http://www.gao.gov/new.items/d09250.pdf>.
5. Kumar G. Regulatory Roadmap for Herbal Medicine, 1<sup>st</sup> edition, Business Horizons, New Delhi, 2007.
6. [https://ods.od.nih.gov/HealthInformation/DS\\_WhatYouN](https://ods.od.nih.gov/HealthInformation/DS_WhatYouN)

7. Mazlan Y. Vitamin use and beliefs among students at a Malaysian university. J R Soc Health. 1990; 110(4):132-4.   
 eedToKnow.aspx accessed on 12th March 2017.