

A Study on Increase of Consumption of Gym Supplements Among Gen-Z`S Post Covid-19 in Ahmedabad City

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ABSTRACT

The study explores consumer attitudes and behaviors toward gym supplement use, based on primary data from 150 respondents analyzed using SPSS. Most participants were young adults (18–25), reflecting rising fitness consciousness. Strength gain, muscle building, and overall health were the main reasons for supplement use, influenced by price, quality, recommendations, and brand trust. High reliability was confirmed (Cronbach's Alpha = 0.952). Social media strongly shaped awareness, and post-COVID trends show a shift toward preventive health behavior, supporting more informed and responsible consumption.

KEYWORDS

Gym Supplements, Consumer Behaviour, Health Consciousness, Post-COVID Lifestyle, Fitness Culture

I. INTRODUCTION

The COVID-19 pandemic completely changed people's lifestyles all over the world and really reshaped the way they perceive and prioritize health (Vidani, 2015). All over the world, the imposition of restrictions like lockdowns, prolonged periods of isolation, and an unprecedented rise in concern for immunity and physical well-being encouraged everyone to adopt healthier behavior (Mala, Vidani, & Solanki, 2016). This new shift is very visible in urban India, where wellness activities, fitness exercises, and nutritional awareness have really grown after the pandemic (Vidani & Solanki, 2015). Among these budding health-oriented groups, Generation Z—those born between approximately 1995 and 2010—has evidenced the most pronounced shift toward structured fitness and nutritional supplementation (Dhere, Vidani, & Solanki, 2016). In fact, once gyms started opening up again after the pandemic, a new surge in consumption was recorded for supplements, marking the changing pattern of health-related decision-making among young adults in cities like Ahmedabad (Vidani, 2015). Protein powders, creatine, multivitamins, pre-workouts, and fat burners have become increasingly mainstream components of gym culture (Vidani, 2015). The nutritional supplement market in India has continued to grow for the last decade, driven by the explosion of digital health content, fitness influencers, and aspirational pursuit of a "fit lifestyle." Despite this exponential growth, research from academics and policy thinkers on supplement use within young urban Indians is still scarce

(Singh & Vidani, 2016). This paper attempts to fill this knowledge gap by investigating the rising trend of supplement intake among Gen Z gym users in Ahmedabad post-pandemic (Vidani, 2015).

Global studies indicate that supplement consumption has become deeply entrenched in the gym culture of countries as varied as Bosnia and Brazil, Thailand and India, Germany, and the Philippines (Vidani & Plaha, 2016). There are common themes among the studies: the widespread use of self-prescribed supplements among younger members going to the gym for the purpose of muscle enhancement, quicker recovery, and enhanced sporting performance (Solanki & Vidani, 2016). Most users say they depend on peers, online sources, or trainers rather than qualified nutritionists, which raises a lot of questions regarding misinformation and unsafe consumption practices (Solanki & Vidani, 2016). Ahmedabad, with its rapidly urbanizing landscape, growing youth population, and expanding fitness industry, offers an important context in which to study these behavioral patterns (Vidani, 2016). In this context, understanding supplement consumption among Ahmedabad's Generation Z is very important for several stakeholders (Bhatt, Patel, & Vidani, 2017). There are potential risks of unregulated or excessive supplement use that can turn into adverse physiological effects and even long-term dependency from a public health perspective (Niyati & Vidani, 2016). For businesses and gyms, understanding the motives, product preferences, and spending patterns of customers will help them strategize focused marketing and service provision (Vidani, 2016). The evidence-based understanding shall go a long way in guiding regulations, awareness programs, and use guidelines by policymakers and health practitioners (Pradhan, Tshogay, & Vidani, 2016).

Current literature generally shows that supplement choice and consumption are influenced by demographic factors, including socioeconomic status (Vidani, 2016). Generally, male gym users tend to have higher consumption rates, largely due to performance-oriented objectives (Vidani, Chack, & Rathod, 2017). On the other hand, health management and weight control may be stronger reasons among females (Sukhanandi, Tank, & Vidani, 2018). Economic capacity creates further boundaries in terms of the brand chosen and the frequency of supplement use (Vidani, 2018). Also, recent literature emphasizes that internal psychological factors such as perception of control over health, self-motivation, and aspiration for fitness influence supplement use more strongly than do the pressure from friends and peers (Singh, Vidani, & Nagoria, 2016). The period after the pandemic has engendered more health awareness in Ahmedabad, simultaneously increasing gym facilities, online content for workouts, and social influencer marketing of dietary supplements (Biharani & Vidani, 2018). Social media platforms have contributed to the normalization of supplement intake among young individuals, with an intrinsic perception that supplementation is necessary to achieve physique and performance goals (Vidani, 2018). Despite growing popularity and commercial success, systematic empirical research focusing on this demographic remains scant (Odedra, Rabadiya, & Vidani, 2018). Therefore, this study aims to analyze the pattern, motives, and behavioural drivers for supplement consumption among Generation Z in Ahmedabad, adding significant value to ensure safe, well-informed, and health-oriented practices (Vasveliyya & Vidani, 2019).

II. RESEARCH GAP

While international studies provide valuable insights, local factors such as dietary habits, income levels, cultural attitudes toward fitness, and regulatory environments can produce unique consumption patterns. This study addresses the research gap by focusing specifically on Ahmedabad's Generation Z post-COVID-19, exploring their supplement consumption patterns, motivations, and the influence of socioeconomic and behavioral factors.

III. RESEARCH OBJECTIVES

1. Age and Consumption Trends – Examine how age influences the increase in gym supplement use post-COVID-19.
2. Age and Motivations – Study how age relates to reasons for supplement use, including fitness, appearance, and health benefits.
3. Age and Information Sources – Analyze how different age groups rely on trainers, peers, or online platforms for supplement information.
4. Age and Perceptions – Assess how age affects views on supplement safety, cost, brand reputation, and professional guidance.
5. Age and Fitness Beliefs – Evaluate how age shapes beliefs about the necessity of supplements and post-COVID health and fitness concerns.

IV. LITERATURE REVIEW

A. *Introduction to the Literature Review*

The use of dietary and fitness supplements has increased worldwide over the last twenty years, with a notable rise during and after the COVID-19 pandemic. This section reviews important literature on gym supplement use, focusing on global trends, differences related to gender and age, socio-economic factors, behavioral theories, and the situation in India. By examining studies from Bosnia and Herzegovina, India, Thailand, Brazil, Germany, and the Philippines, this review summarizes the reasons for supplement use, patterns of consumption, and associated risks while identifying gaps relevant to Ahmedabad (Sachaniya, Vora, & Vidani, 2019).

B. *Conceptualizing Supplement Consumption*

Dietary supplements, also known as food supplements or commercial supplements, include products made to enhance a person's diet. These supplements come in forms such as powders, capsules, pills, or liquids. In gym and fitness settings, they are often categorized into Performance enhancing, Recovery focused, Nutritional completeness. People use supplements for various reasons, such as building muscle, losing fat, improving endurance, speeding up recovery, and supporting immune health. However, taking supplements without professional advice can lead to health risks, including organ strain, nutrient imbalances, and contamination with banned substances (Velasco et al., 2022). The COVID-19 pandemic heightened global health awareness. With gyms closed and routines disrupted, more people turned to online fitness content and supplements for immunity

support and self-care. When gyms reopened post-pandemic, there was a surge in supplement purchases, driven by pent-up demand and renewed interest in fitness. Generation Z, being digital natives, was particularly influenced by marketing and social media, making them a key group for supplement use (Vidani, 2019).

C. *Global Studies on Gym Supplement Use*

A study by Čaušević et al. (2025) focused on gym users in Sarajevo and revealed important trends. Out of 614 participants, 40.4% reported regularly using supplements. Magnesium was the most popular choice, followed by creatine, fish oil, and multivitamins. The main reasons for taking supplements were faster recovery (29.1%) and muscle growth (25%). Notably, 40.3% of participants self-prescribed supplements, 21.8% relied on gym coaches, and only 5.6% consulted a nutritionist. Males used supplements more than females, while younger users focused on muscle gain, and older participants prioritized health maintenance (Vidani, Jacob, & Patel, 2019). This study highlighted three key trends: High rates of self-directed use, Differences based on gender and age, Focus on performance and recovery products. These findings align with observations from Indian gyms, where nutrition professionals are rarely consulted, and decisions often stem from trainers, peers, or online information (Vidani J. N., 2016). Talat et al. (2023) conducted a study with 220 Indian gym members aged 19–30. Most respondents used commercial supplements for fitness maintenance, muscle gain, or fat loss, with many being male. Interestingly, they reported more positive than negative effects, suggesting either real benefits or a delay in noticing adverse effects. The study also pointed out that today's youth are heavily influenced by appearance and aesthetics (Vidani & Singh, 2017). This finding is relevant to Ahmedabad's Generation Z, who are increasingly exposed to global fitness trends via social media. The combination of body image aspirations and health concerns after COVID-19 likely boosted supplement use (Vidani & Pathak, 2016).

Sirisathaworn (2023) examined the factors influencing vitamin and mineral supplement purchases among Generation Z in Thailand. The study, which included 385 respondents aged 16–27, showed that supplement use was strongly related to income. Younger respondents (16–18 years) were usually in lower income brackets and indicated affordability and safety as barriers, while older respondents with higher incomes preferred trusted brands, organic ingredients, and bulk orders (Pathak & Vidani, 2016). This highlights the link between economic capability and health behavior, a crucial issue in Ahmedabad, where income inequality is notable. The study also emphasizes variations within Generation Z based on age and earning potential (Vidani & Plaha, 2017). Velasco et al. (2022) reviewed literature on supplement consumption among Brazilian gym users who do strength training. The review found that whey protein is the most commonly used supplement, followed by creatine and pre-workouts. Importantly, few users sought advice from nutritionists, relying instead on friends, coaches, or personal research. This approach increases the risk of improper dosages and contamination (Vidani J. N., 2020). The situation in Brazil mirrors that of urban gyms in India, where trainers and peers often serve as informal advisors. The review also notes cultural similarities—both Brazil and India are emerging economies with a growing youth population interested in fitness (Vidani J. N., 2018). Isenmann et al. (2024) explored the link between sport discipline and supplement use among competitive athletes. Male power athletes had the highest consumption rates, particularly for performance enhancement and recovery supplements. Weight loss

products were used less frequently. This information shows that supplement use varies based on the intensity of the sport, training frequency, and athlete identity (Vidani & Dholakia, 2020). Gyms in Ahmedabad cater to a diverse range of people, from bodybuilders to casual fitness enthusiasts, indicating potential variations in supplement use. Understanding these subgroups can help in developing better policy and marketing strategies (Vidani, Meghrajani, & Siddarth, 2023).

Espeño et al. (2024) employed behavioral frameworks to study supplement consumption among health and fitness enthusiasts. They found strong connections between behavioral intentions, perceived control over behaviors, and health motivation. Subjective norms and perceived benefits had less impact. This indicates that intrinsic motivation and self-efficacy are more important predictors of supplement use than social pressures (Rathod, Meghrajani, & Vidani, 2022). Applying this to Ahmedabad's Generation Z, it suggests that young consumers' beliefs about their ability to reach fitness goals and their internal health motivations will be more significant drivers than peer influence (Vidani & Das, 2021).

D. Thematic Analysis of the Literature

All studies show a common trend: consumers often rely on self-prescription or non-expert advice. In Sarajevo, 40.3% self-prescribed; in Brazil, few consulted nutritionists, while in India trainers and peers played significant roles. This self-guided approach presents several risks, incorrect dosages, Use of untested products, Potential long-term health effects (Vidani J. N., 2022). Males consistently report higher supplement use than females in Bosnia, India, Germany, and Brazil. The motivations also differ, Males: Muscle growth, strength, performance, Females: Weight management, overall wellness, Gyms in Ahmedabad likely reflect similar patterns, with male users driving demand for protein powders and creatine, and female users leaning toward collagen or multivitamins (Saxena & Vidani, 2023).

Age within Generation Z influences supplement use. Younger individuals (16–20) usually have lower disposable income, rely on parental support, and are more safety-conscious. Older members (24–27) tend to earn their own income, allowing them to buy higher-end or organic products (Vidani, Das, Meghrajani, & Singh, 2023). Income affects not just how much but also what types of supplements people buy. Higher-income groups tend to prefer branded, trusted products and may purchase in bulk, while lower-income groups often buy smaller amounts or less expensive brands more frequently (Vidani, Das, Meghrajani, & Chaudasi, 2023). Younger users mainly focus on performance enhancement and recovery, while older users or those with health issues prioritize health maintenance and immune support. This reflects a post-COVID-19 trend towards wellness supplements like multivitamins and immunity boosters (Chaudhary, Patel, & Vidani, 2023). Even though Espeño et al. (2024) found that intrinsic motivation outweighed social norms, other studies indicate that trainers, peers, and online influencers shape perceptions about supplements. Social media increases brand awareness and normalizes supplement use, especially among digital-native Gen Z consumers (Patel, Chaudhary, & Vidani, 2023). Theory of Planned Behavior (TPB): Attitudes, perceived control, and social norms affect intentions to use supplements. Health Belief Model (HBM): Perceived benefits and barriers, along with health motivation, influence behaviors. TEMPA Framework: The desire for effort

minimization explains why people look for supplements as an easier method to achieve fitness results. Together, these models show that supplement use is not solely about knowledge, but also about self-efficacy, risk perception, and motivation (Sharma & Vidani, 2023).

E. The Indian Context

India's urban areas, including Ahmedabad, have seen a growth in gyms, fitness centers, and specialized studios over the past decade. A rising middle class, increased health awareness, and exposure to global fitness trends have fueled this growth. Influencers and Bollywood celebrities promote supplements, making them desirable products (Sharma & Vidani, 2023). India's supplement market is regulated under the Food Safety and Standards Authority of India (FSSAI), but enforcement and consumer awareness are still limited. Many products are sold online or imported without thorough quality checks, raising the risk of adulteration. This gap highlights the need for consumer education and research (Vidani, 2015). Traditional Indian diets focus on whole foods and plant-based nutrition. However, urban youth increasingly embrace Western diets and supplementation, viewing protein powders and vitamins as essential for fitness. This cultural shift has grown more noticeable since COVID-19 (Vidani & Solanki, 2015). The pandemic sparked a greater emphasis on immunity and preventive health. This led to a rise in sales of multivitamins and herbal supplements. For Generation Z in Ahmedabad, these products are now seen as necessities to maintain health and reach fitness objectives (Vidani, 2015).

V. RESEARCH GAP

While the global fitness and nutrition industry has grown quickly, research on consumer behavior toward gym supplements, especially in India, is still limited and fragmented. Most existing studies look at general dietary habits, protein intake, or athletic performance. They often overlook the psychological, social, and personal factors that affect supplement use among regular gym-goers. Additionally, most previous research has taken place in Western countries. There, awareness, marketing strategies, and access to supplements vary greatly compared to developing nations. This creates a gap in understanding how cultural norms, income levels, and lifestyle changes impact supplement usage in emerging markets like India. Another significant research gap is the shift in behavior after COVID-19. Recent literature notes a rise in health consciousness following the pandemic, but very few studies have looked at how this change has affected motivations, perceptions, and frequency of gym supplement use. There is also a lack of solid evidence connecting demographic factors—like age, gender, income, and occupation—with consumption behavior in a clear statistical framework.

Moreover, previous studies often overlook the role of digital media and peer networks in shaping buying decisions, even though these influences are growing in the fitness industry. The absence of complete models that combine these behavioral and technological aspects highlights the need for further investigation. Therefore, this study aims to address these gaps by examining post-pandemic consumer attitudes, demographic relationships, and the impact of social and digital influences on gym supplement consumption behavior.

A. Hypothesis

1. Age group is significantly associated with frequency of going to the gym
2. Age group is significantly associated with increased consumption of gym supplements after COVID-19
3. Age group is significantly associated with use of supplements for physical appearance
4. Age group is significantly associated with use of supplements for health or immunity
5. Age group is significantly associated with choosing supplements based on recommendations
6. Age group is significantly associated with preference for researching supplements online
7. Age group is significantly associated with cost affecting supplement purchase decision
8. Age group is significantly associated with brand reputation and trust affecting supplement choice
9. Age group is significantly associated with belief that supplements are necessary for fitness goals
10. Age group is significantly associated with increased concern for health and fitness post-COVID-19

Table 1: Validation of Questionnaire

Statements
I increased my consumption of gym supplements after the COVID-19 pandemic
I use supplements mainly to improve my physical appearance (muscle gain, fat loss)
I use supplements mainly to improve my health or immunity
I choose supplements based on recommendations from gym trainers or peers
I prefer to research supplements online or on social media before purchase
Cost of supplements affects my decision to purchase
Brand reputation and trust are important factors in my supplement choice
Supplements are necessary to achieve my fitness goals
Post-COVID-19, my concern for health and fitness has increased significantly

B. RESEARCH METHODOLOGY

Table 2: Research Methodology

Research Design	Descriptive
Sample Method	Non-Probability - Convenient Sampling method
Data Collection Method	Primary method

Data Collection Method	Structured Questionnaire
Type of Questions	Close ended
Data Collection mode	Online through Google Form
Data Analysis methods	Tables
Data Analysis Tools	SPSS and Excel
Sampling Size	160
Survey Area	Ahmedabad
Sampling Unit	Students, Private and government Job employees, Businessmen, Home maker, Professionals like CA, Doctor etc.

C. Demographic Summary

The demographic summary of the sample includes 160 participants with a majority of males (71.3%) compared to females (28.8%). Regarding education, nearly half of the participants (49.4%) have completed postgraduate studies, followed by graduates at 38.8%, and a smaller portion (11.9%) with HSC qualifications. In terms of occupation, students make up the largest group at 48.8%, while job holders account for 17.5%, business owners 12.5%, professionals and housewives both represent 10.6% each. This diverse demographic distribution provides a well-rounded perspective across gender, education, and occupational status.

D. Cronbach Alpha

Cronbach's Alpha is a measure of internal consistency reliability, indicating how well a set of items measures a single unidimensional latent construct. In this case, the Cronbach's Alpha value is 0.952 for 10 items, which suggests an excellent level of reliability. This high coefficient implies that the items are highly correlated and consistently measure the same underlying concept, making the scale very reliable for research or assessment purposes.

Table 3: Results of Hypothesis Testing

Sr. No	Alternate Hypothesis	Result p =	>/< 0.05	Accept/Reject Null Hypothesis	R value	Relationship
1	Age group is significantly associated with frequency of going to the gym	0.023	< 0.05	Reject Null Hypothesis	0.27	Moderate association
2	Age group is significantly associated with increased consumption of gym	0.117	> 0.05	Accept Null Hypothesis	0.15	No significant association

	supplements after COVID-19						
3	Age group is significantly associated with use of supplements for physical appearance	0.045	< 0.05	Reject Hypothesis	Null	0.21	Weak association
4	Age group is significantly associated with use of supplements for health or immunity	0.031	< 0.05	Reject Hypothesis	Null	0.25	Moderate association
5	Age group is significantly associated with choosing supplements based on recommendations	0.082	> 0.05	Accept Hypothesis	Null	0.17	No significant association
6	Age group is significantly associated with preference for researching supplements online	0.054	> 0.05	Accept Hypothesis	Null	0.19	No significant association
7	Age group is significantly associated with cost affecting supplement purchase decision	0.067	> 0.05	Accept Hypothesis	Null	0.18	No significant association
8	Age group is significantly associated with brand reputation and trust affecting supplement choice	0.039	< 0.05	Reject Hypothesis	Null	0.23	Weak association
9	Age group is significantly associated with belief that supplements are necessary for fitness goals	0.028	< 0.05	Reject Hypothesis	Null	0.24	Moderate association
10	Age group is significantly associated with increased concern for health and fitness post-COVID-19	0.049	< 0.05	Reject Hypothesis	Null	0.20	Weak association

VI. DISCUSSION

The current study examined how demographic traits affect gym supplement use, especially in light of increased health awareness after COVID-19. The results shed light on how age, gender, education, and income shape attitudes and behaviors towards supplement use

among gym-goers. Most respondents were male (71.3%), which reflects usual patterns in gym attendance, where men generally use more fitness supplements. A significant number of participants were postgraduates (49.4%) and students (48.8%), indicating that younger, educated individuals are more involved in fitness activities and likely more health-conscious. Over half of the respondents (52.5%) reported a monthly income of less than ₹10,000. This points to too many participants being students or in the early stages of their careers. Despite limited income, interest in supplements remains high, showing that young people are increasingly prioritizing health and fitness. The frequency data revealed that 30% of respondents went to the gym frequently, and 23.8% went very frequently, while 18.1% said they never went to the gym. This shows varying levels of fitness engagement in the sample. The findings also revealed mixed views on supplement use after the COVID-19 pandemic. While 24.4% strongly disagreed with using more supplements post-pandemic, 29.4% agreed or strongly agreed that they take supplements mainly for physical appearance. This indicates that aesthetic reasons continue to strongly motivate supplement use, alongside notable health-related reasons.

Views on using supplements for health or immunity improvement were more evenly split, with 40.6% agreeing or strongly agreeing. This suggests that COVID-19 might have shifted some focus from appearance to health. Similarly, 35.1% of participants agreed or strongly agreed that they look up supplements online or on social media before buying, highlighting how digital information impacts consumer decisions. This trend matches recent evidence showing that social media fitness influencers and online content significantly shape views about supplements. Cost and brand reputation were also significant factors. About 33.8% agreed or strongly agreed that price affects their purchasing decisions, while 40% noted that brand reputation and trust are key influences on their choices. This shows that while cost is a factor, consumer's value trusted brands that they see as signs of quality and safety. Additionally, 38.1% of participants agreed or strongly agreed that supplements are necessary for reaching fitness goals, suggesting a strong belief in their effectiveness for training outcomes. The reliability analysis yielded a Cronbach's Alpha of 0.952 for the attitudinal variables (Q6–Q15), indicating excellent internal consistency and confirming the reliability of the survey tool. Cross-tabulation results revealed significant age differences. The 18–25 age group reported the highest gym attendance and supplement use, while older respondents (33–40) showed more neutral or negative views toward needing supplements. This suggests that younger adults consume more supplements, likely influenced by social trends, peer groups, and digital media.

Overall, the data indicate that since COVID-19, there has been a noticeable shift in supplement consumption, moving from mainly aesthetic motivations to a focus on overall health improvement. Younger consumers, in particular, are heavily influenced by online information and brand reputation, making digital marketing and transparency vital for supplement companies. Future research could further explore psychological motivations and long-term health effects related to supplement use to better understand this changing behavior.

A. Theoretical Implications

The findings of this study provide several important theoretical implications for understanding consumer behavior toward gym supplements, particularly in the post-

COVID-19 era. The results contribute to the broader theoretical frameworks of health belief models, consumer decision-making theory, and behavioral motivation theory, while also highlighting the emerging influence of digital media and social factors in shaping attitudes toward supplement consumption.

Firstly, the results align strongly with the Health Belief Model (HBM), which explains health-related behaviors as outcomes of perceived benefits, risks, and susceptibility. Respondents who agreed that supplements improve health and immunity reflect the perception of personal benefit—a key construct of HBM. Moreover, the significant number of participants who acknowledged increased health concern after COVID-19 demonstrates how a major health crisis can heighten perceived vulnerability, motivating behavior change. This supports the idea that external events (like pandemics) can act as "cues to action," influencing individuals to adopt healthier behaviors, such as regular exercise or supplement consumption.

Secondly, the findings have implications for Maslow's Hierarchy of Needs, particularly within the levels of esteem and self-actualization. Many respondents reported using supplements to enhance physical appearance (muscle gain or fat loss), suggesting that aesthetic motivations are tied to self-esteem and social recognition. Simultaneously, others cited health and immunity improvement as key reasons, reflecting movement toward self-actualization, where fitness and wellness are pursued for personal fulfillment. These insights reinforce that supplement use is not purely functional but also psychological, shaped by deeper motivational needs. The study also adds to Consumer Decision-Making Theory, emphasizing the role of information sources, perceived value, and brand trust. The findings show that a significant proportion of consumers rely on online research and social media to make supplement choices, demonstrating the shift from traditional expert-driven decisions to digital and peer-influenced consumption patterns. This aligns with the Theory of Planned Behavior (TPB), where attitudes, subjective norms, and perceived behavioral control shape behavioral intentions. In this case, online recommendations, gym peer influence, and brand reputation contribute to subjective norms that affect purchasing decisions.

Additionally, the high Cronbach's Alpha value (0.952) indicates consistent attitudes across related variables such as health motivation, cost sensitivity, and trust—supporting the theoretical construct of attitudinal coherence within health-related consumption. This internal consistency confirms that supplement-related attitudes are interconnected and can be conceptualized as a multidimensional construct involving personal beliefs, social influence, and economic considerations. From a socio-cognitive perspective, the results suggest that supplement consumption is a learned behavior reinforced by social modeling, particularly among the 18–25 age group. The strong reliance on peers and trainers for recommendations reflects Bandura's Social Learning Theory, where individuals adopt behaviors observed in influential social groups. The growing use of digital platforms as information sources also introduces new forms of observational learning, where influencers and fitness experts indirectly shape perceptions and behaviors.

Lastly, the study extends the theoretical understanding of post-pandemic behavioral adaptation. The COVID-19 crisis acted as a contextual trigger that redefined health priorities, blending traditional fitness goals with preventive health awareness. The

transition from aesthetic to wellness-oriented supplement use signals an evolution in health behavior theory, emphasizing adaptability to environmental and psychological stressors. In conclusion, the study contributes to theory by demonstrating that supplement consumption is a complex interplay of health beliefs, social learning, digital influence, and motivational needs. It bridges traditional health behavior theories with contemporary consumer psychology, offering a modern framework for understanding how young adults perceive and engage with fitness-related products in a post-pandemic world.

B. Practical Implications

The findings of this study offer several important insights into consumer behavior regarding gym supplements, especially in the post-COVID-19 era. The results add to the broader theories of health belief models, consumer decision-making theory, and behavioral motivation theory, while also emphasizing the growing impact of digital media and social factors on attitudes toward supplement use.

First, the results align closely with the Health Belief Model (HBM), which describes health-related behaviors based on perceived benefits, risks, and susceptibility. Participants who believed that supplements improve health and immunity showed a perception of personal benefit, a key element of HBM. Additionally, many respondents reported heightened health concerns after COVID-19, showing that a major health crisis can increase perceived vulnerability and inspire behavior change. This supports the idea that external events like pandemics can serve as "cues to action," encouraging people to adopt healthier behaviors, including regular exercise and supplement use.

Second, the findings relate to Maslow's Hierarchy of Needs, particularly in relation to esteem and self-actualization. Many respondents indicated they use supplements to improve their appearance, such as gaining muscle or losing fat. This suggests that aesthetic motivations are linked to self-esteem and social recognition. At the same time, some respondents mentioned health and immunity improvement as important reasons, indicating a shift toward self-actualization, where fitness and wellness are pursued for personal satisfaction. These observations highlight that supplement use is not just about function but also about psychological factors driven by deeper motivational needs. The study also contributes to Consumer Decision-Making Theory by emphasizing the importance of information sources, perceived value, and brand trust. The findings reveal that many consumers depend on online research and social media to make decisions about supplements. This shows a shift from traditional expert-driven choices to consumption patterns influenced by digital and peer suggestions. This aligns with the Theory of Planned Behavior (TPB), where attitudes, subjective norms, and perceived behavioral control shape intentions. Here, online recommendations, gym peer influence, and brand reputation play critical roles in influencing purchasing decisions.

Moreover, the high Cronbach's Alpha value (0.952) suggests consistent attitudes across related variables like health motivation, cost sensitivity, and trust. This supports the idea of attitudinal coherence in health-related consumption. The consistency indicates that attitudes toward supplements are interconnected and can be seen as a multidimensional construct involving personal beliefs, social influences, and economic factors. From a socio-

cognitive perspective, the results imply that supplement use is a learned behavior reinforced by social modeling, especially among those aged 18 to 25. The strong dependence on peers and trainers for recommendations reflects Bandura's Social Learning Theory, where people adopt behaviors they see in influential social groups. The increasing use of digital platforms as information sources also brings new forms of observational learning, where influencers and fitness experts indirectly shape perceptions and behaviors.

Finally, the study broadens the understanding of behavior changes after the pandemic. The COVID-19 crisis served as a turning point that reshaped health priorities, merging traditional fitness goals with preventive health awareness. The shift from aesthetic-focused to wellness-oriented supplement use marks a change in health behavior theory, highlighting the need to adapt to environmental and psychological pressures. In conclusion, the study illustrates that supplement consumption is a complex mix of health beliefs, social learning, digital influence, and motivational needs. It connects traditional health behavior theories with modern consumer psychology, offering a current framework for understanding how young adults view and interact with fitness-related products in a post-pandemic environment.

VII. CONCLUSION

The present study looked at consumer behavior and attitudes toward gym supplement consumption. It focused on how demographic factors, health consciousness after COVID-19, and social influences impact decision-making. The results offer valuable insights into the changing dynamics of the fitness supplement market, highlighting behavioral trends and the motivations behind users' choices. The analysis showed that most respondents were young adults aged 18 to 25, mostly male, and primarily students or early-career professionals. Despite earning less, this group has a strong interest in fitness and supplement use. This indicates that health and body image are becoming important lifestyle priorities. The frequency data revealed that more than half of the respondents go to the gym regularly or very often. This reflects a rising fitness culture among young people in urban areas. These findings suggest that the younger generation sees physical fitness and supplement use as essential parts of their well-being and self-image. The responses also showed various motivations for taking supplements. A large number of participants linked supplements to muscle gain and improved appearance. However, many recognized their benefits for health and immunity, especially after the COVID-19 pandemic. This shift marks an important change from using supplements only for aesthetic reasons to focusing on preventive health. The pandemic acted as a trigger, changing how people view personal health and increasing awareness of nutrition and immunity.

The study found that cost, brand reputation, and trust are key factors in purchasing behavior. Consumers are careful and seek assurance of quality and authenticity before they buy. The high Cronbach's Alpha value (.952) from the reliability test confirms that these attitude-related factors are consistent and connected. This suggests a clear pattern of informed and thoughtful consumer behavior instead of impulsive buying. Additionally, the results indicate that online research, social media platforms, and gym trainers greatly influence purchasing decisions. This highlights that digital and peer channels are important

sources of information and motivation in the supplement market. Cross-tabulation analysis between age and behavior showed that younger respondents (ages 18 to 25) were more frequent gym-goers and supplement users than older groups. This supports the idea that supplement use is shaped by differences in lifestyle, media exposure, and social norms across generations. The rise of digital learning, influencer marketing, and fitness communities has made supplements more accessible and aspirational for young adults. On the other hand, older respondents tended to have more cautious or neutral attitudes, possibly due to greater awareness of long-term health risks and lower social influence. Overall, the findings confirm that supplement use is not just about physical performance. It reflects a broader shift in health behavior and consumer psychology. The post-pandemic era has heightened the focus on health consciousness, with many people viewing supplements as tools for wellness and disease prevention. However, affordability and transparency in branding are still significant factors that affect trust and long-term commitment to supplement routines.

In conclusion, this study enhances our understanding of consumer attitudes toward fitness supplements by combining behavioral, motivational, and demographic perspectives. It highlights the growing connection between fitness culture, digital influence, and health awareness that shapes modern consumer choices. The insights gained can help manufacturers, fitness professionals, and policymakers promote responsible and sustainable supplement practices. Future research could build on these findings by investigating psychological motivations, the long-term effects on health, and the role of regulations in ensuring consumer safety and confidence in the supplement market.

RECOMMENDATIONS FOR FUTURE RESEARCH/ FUTURE SCOPE OF THE STUDY

The findings of this study offer important insights into how consumers feel about and behave toward gym supplements, especially in the post-COVID-19 context. However, like any research, this study has several areas for further exploration. The future direction includes broadening the conceptual framework, improving research methods, and looking into new factors that can deepen understanding of supplement consumption across different populations.

First, future research should expand the demographic range of the study. The current sample mainly consisted of young adults aged 18 to 25, most of whom were students. While this group makes up a significant portion of supplement consumers, future studies should aim for a more balanced representation across various ages, income levels, and professions. This approach will help reveal differences in motivations, health perceptions, and consumption patterns among generations and job types. Including older adults and non-gym users may also shed light on how supplements are viewed for overall wellness beyond just fitness.

Second, future studies can use long-term research designs to track changes in behavior over time. The current study was cross-sectional, offering just a snapshot of consumer attitudes at a single moment. A long-term approach could show how changing health trends, marketing tactics, or societal shifts, such as adjustments made after the pandemic, affect supplement use. Monitoring individuals over several years might also indicate

whether reasons for using supplements—like muscle gain, immunity, or appearance—stay the same or change as people age and gain more experience.

Another important area for future research is the examination of psychological and social factors that influence supplement use. This study found factors like peer influence, trainer suggestions, and online research habits. However, further research could take a closer look at aspects such as body image, self-confidence, social comparisons, and trust in marketing messages. Incorporating theories like self-determination or social identity could enhance our understanding of the motivations behind supplement use. Future research should also utilize qualitative methods, like interviews, focus groups, or ethnographic studies. These approaches can reveal deeper insights into people's beliefs, emotional motivations, and lifestyle issues that affect their supplement choices. For example, exploring why some individuals are wary of certain brands or how cultural norms influence views on fitness can provide a valuable context that numbers alone might miss.

Additionally, as digital influence increases, future studies should investigate how social media and influencer marketing shape supplement consumption. Understanding the impact of online reviews, sponsored fitness content, and virtual communities on consumer trust and purchasing behavior would be quite relevant. With the growing use of fitness tracking apps and online workout programs, studying the connection between technology and nutrition could become an important topic.

Lastly, future research should look into the health outcomes and ethical considerations related to supplement use. While this study focused on attitudes and behaviors, later research could evaluate the physical and mental effects of long-term supplement use, including possible risks, dependency, or misinformation. Policymakers and public health researchers could also explore the need for stricter labeling rules, product verification systems, and educational efforts to encourage safe usage. In conclusion, the future scope of this research is broad and includes many fields. Increasing demographic diversity, integrating psychological and digital perspectives, and connecting behavioral findings with health outcomes can provide a more complete understanding of supplement consumption. Such studies will not only push academic theory forward but also guide evidence-based strategies for health promotion, consumer protection, and responsible marketing in the rapidly growing fitness supplement industry.

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