



Analysis of sports supplement knowledge and consumption behavior among members of brother fitness

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Abstract: The use of sports supplements among physically active individuals has increased substantially alongside the growing popularity of healthy lifestyles and fitness activities. However, the widespread consumption of sports supplements is often not accompanied by adequate knowledge regarding their benefits, appropriate dosage, safety, and potential risks. This study aimed to assess the level of sports supplement knowledge among members of Brother Fitness Majalengka and examine the relationship between sports supplement knowledge and supplement consumption behavior. A quantitative approach with a cross-sectional survey design was employed. The study involved 30 members of Brother Fitness Majalengka selected through purposive sampling. Data were collected using a validated and reliable questionnaire. Data analysis included descriptive statistics, assumption testing, Pearson product-moment correlation, and simple linear regression using IBM SPSS Statistics version 26. The findings revealed that respondents' level of sports supplement knowledge was moderate, with a mean score of 44.90 (66.03% of the ideal score). Inferential analysis demonstrated a positive and statistically significant relationship between sports supplement knowledge and supplement consumption behavior. The coefficient of determination ($R^2 = 0.599$) indicated that sports supplement knowledge explained 59.9% of the variance in supplement consumption behavior, while the remaining 40.1% was attributable to other factors, including exercise motivation, training experience, coaches' recommendations, peer influence, social media exposure, and economic conditions. The study concludes that higher levels of sports supplement knowledge are associated with healthier and more appropriate supplement consumption behavior among fitness community members. These findings highlight the importance of evidence-based educational programs to improve sports supplement literacy and promote safe and responsible supplement use among physically active populations.

Keywords: sports supplement knowledge; supplement consumption behavior; fitness community; dietary supplements; health education



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Introduction

A healthy lifestyle and regular physical activity have become essential components of modern society. Increasing awareness of the importance of maintaining physical fitness,

preventing non-communicable diseases, and improving quality of life has encouraged more people to participate in various forms of physical exercise, particularly training at fitness centers (Aulia et al., 2024; Utami et al., 2025). Along with this growing participation in exercise, the use of sports supplements has also increased as a means of enhancing exercise performance, accelerating recovery, promoting muscle growth, and meeting nutritional requirements during physical activity (Brown et al., 2017; Wax et al., 2021).

Fitness centers are among the most common venues where individuals engage in resistance training and other forms of physical conditioning. Regular participation in such training has been shown to improve muscular strength, body composition, metabolic capacity, and cardiovascular health (Paluch et al., 2024). Consequently, the consumption of various sports supplements, including whey protein, creatine, branched-chain amino acids (BCAAs), multivitamins, and electrolyte beverages, has become increasingly prevalent among fitness center members. Previous studies have demonstrated that these supplements can provide significant physiological benefits when consumed according to individual nutritional needs, appropriate dosages, and specific training objectives (He & Lin, 2025; Sebastiá-Rico et al., 2024).

Despite these potential benefits, sports supplement consumption is not always supported by adequate scientific knowledge. Many individuals consume supplements based solely on recommendations from friends, coaches, social media, fitness influencers, or commercial advertisements without fully understanding their ingredients, mechanisms of action, appropriate dosages, timing of consumption, or potential adverse effects (Karakaya & Ceyhan, 2025; Finnegan et al., 2025). This phenomenon suggests that the increasing prevalence of supplement use is not necessarily accompanied by sufficient knowledge regarding their proper and safe use.

The rapid expansion of digital media has further accelerated the dissemination of information related to sports supplements. However, not all available information is scientifically valid. Misinformation and exaggerated marketing claims frequently promote the benefits of supplements without adequately addressing their limitations, appropriate usage, or potential health risks (Yopita Desriana Butar, 2024; Aldurdunji, 2025). Consequently, individuals may develop

misconceptions, such as believing that all supplements are inherently safe, that higher dosages inevitably produce superior results, or that supplements can substitute for a balanced diet. Such misconceptions may encourage irrational supplement consumption and potentially compromise individual health.

Supplement consumption behavior is closely associated with an individual's level of knowledge. Adequate understanding of the functions, benefits, safety, and appropriate indications for sports supplement use enables individuals to make more informed decisions when selecting products that meet their physiological requirements (Alfi Nur Akhfa, 2021). Conversely, insufficient knowledge may lead to excessive supplement consumption, inappropriate product selection, or unnecessary financial expenditure on products that provide little or no additional benefit (Amawi et al., 2023; Murofushi et al., 2024).

Previous studies have identified educational level, exercise experience, socioeconomic status, and access to information as important factors influencing knowledge of sports supplements (Reading & LaRose, 2022; Sapuppo et al., 2025). However, most existing studies have focused primarily on athletes, sport science students, or adolescent populations, whereas investigations involving recreational fitness center members remain relatively limited (Lombardo et al., 2024). This population represents one of the largest groups of sports supplement users, characterized by diverse training objectives, nutritional needs, and exercise experiences.

In Indonesia, particularly at regional fitness centers, empirical evidence regarding knowledge of sports supplements and supplement consumption behavior remains scarce. To date, relatively few studies have examined how fitness center members understand the functions of sports supplements, the information sources they rely upon, or how their level of knowledge influences their daily supplement consumption practices. This gap highlights the need for further investigation, particularly in local fitness centers whose members possess diverse demographic and training characteristics.

Brother Fitness Majalengka is one of the largest fitness centers in the region, comprising members with diverse ages, occupations, training experiences, and fitness goals. These diverse

characteristics make Brother Fitness Majalengka an appropriate setting for examining public knowledge regarding sports supplements and describing supplement consumption behavior among recreational exercisers. Findings from this study are expected to provide valuable evidence for developing educational programs promoting the safe, effective, and evidence-based use of sports supplements.

This study offers both theoretical and practical contributions. Theoretically, it is expected to enrich the literature on sports nutrition literacy and supplement consumption behavior among recreational fitness center members. Practically, the findings may serve as valuable references for fitness center managers, fitness coaches, sports nutritionists, healthcare professionals, and relevant stakeholders in designing educational interventions aimed at improving public understanding of appropriate sports supplement use.

Based on these considerations, this study aims to analyze the level of knowledge and supplement consumption behavior among members of Brother Fitness Majalengka. Furthermore, it seeks to examine the relationship between knowledge of sports supplements and supplement consumption behavior. The findings are expected to provide a comprehensive understanding of members' knowledge regarding sports supplements, describe their consumption practices, and serve as a foundation for developing educational strategies that promote

Materials and Methods

Research Design

This study employed a quantitative approach using an analytical cross-sectional survey design (Gall et al., 2007; Fraenkel & Wallen, 2022). This design was selected to examine the level of knowledge regarding sports supplements among fitness center members and to analyze the relationship between their knowledge and sports supplement consumption behavior. Data were collected at a single point in time, allowing the relationships between variables to be examined objectively through statistical analysis.

Research Setting and Period

The study was conducted at Brother Fitness Majalengka, Majalengka Regency, West Java, Indonesia. The research site was selected purposively because it has an active membership with varying levels of sports supplement use as part of their training routines. The study was carried out over a three-month period, from May to July 2026, including instrument development, pilot testing, data collection, data processing, and statistical analysis.

Participants

The target population consisted of all active members of Brother Fitness Majalengka who met the following inclusion criteria: (1) at least 18 years of age; (2) participating in fitness training at least three times per week; (3) having been registered as a fitness center member for a minimum of three months; and (4) voluntarily agreeing to participate by providing informed consent. Because the number of eligible members was relatively limited, a total sampling technique was employed, whereby all members meeting the inclusion criteria were included in the study. A total of 30 participants constituted the final research sample. Prior to the main survey, the questionnaire was pilot-tested on 20 respondents to evaluate its validity and reliability.

Research Variables

This study involved two research variables.

The independent variable was knowledge of sports supplements, encompassing knowledge related to the functions and benefits of supplements, supplement types, appropriate dosage, potential risks and side effects, and product regulations and legality. The dependent variable was sports supplement consumption behavior, including patterns of supplement use, supplement selection, adherence to recommended dosages, methods of obtaining supplements, and awareness of product safety and regulatory compliance.

Research Instrument

Data were collected using a self-administered questionnaire developed from an extensive review of the literature on sports nutrition literacy and sports supplement consumption behavior. All questionnaire items were measured using a four-point Likert scale, ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). The knowledge questionnaire initially consisted of 25 items

representing five dimensions: (1) benefits and functions of sports supplements; (2) types of supplements; (3) safe dosage recommendations; (4) risks and adverse effects; and (5) product regulation and legality. The supplement consumption behavior questionnaire initially comprised 20 items, covering five dimensions: (1) consumption patterns; (2) supplement selection; (3) adherence to dosage recommendations; (4) methods of obtaining supplements; and (5) awareness of product safety and regulatory compliance.

Prior to the main data collection, the questionnaire underwent content validation through expert judgment. Subsequently, a pilot study involving 20 respondents was conducted to assess construct validity using the Pearson Product-Moment correlation test and internal consistency using Cronbach's alpha coefficient. Following validity testing, 17 items of the knowledge questionnaire and 18 items of the supplement consumption behavior questionnaire met the required validity criteria and were retained for the final survey. The reliability analysis demonstrated satisfactory internal consistency, with Cronbach's alpha values of 0.854 for the knowledge scale and 0.919 for the supplement consumption behavior scale.

Table 1. Blueprint of the Sports Supplement Knowledge Questionnaire

Indicator	Number of Items
Benefits and functions of sports supplements	5
Types of sports supplements	5
Appropriate dosage	5
Risks and side effects	5
Product regulation and legality	5
Total	25

Table 2. Blueprint of the Sports Supplement Consumption Behavior Questionnaire

Indicator	Number of Items
Supplement consumption patterns	4
Selection of sports supplements	4
Adherence to recommended dosage	4
Methods of obtaining supplements	4
Awareness of product safety and regulatory compliance	4
Total	20

Instrument Validity and Reliability

Prior to the main data collection, the questionnaire underwent content validity assessment through expert judgment to evaluate the relevance, clarity, and representativeness of each item in measuring the intended constructs. Subsequently, a pilot study involving 20 respondents was conducted to examine the psychometric properties of the instrument. Construct validity was evaluated using the Pearson Product–Moment correlation test. An item was considered valid when its correlation coefficient exceeded the critical r -value at the 5% significance level ($p < 0.05$).

Instrument reliability was assessed using Cronbach's alpha coefficient to determine the internal consistency of the questionnaire. A Cronbach's alpha value of 0.70 or higher was considered indicative of acceptable reliability. Following the validity analysis, 17 items measuring knowledge of sports supplements and 18 items measuring sports supplement consumption behavior met the validity criteria and were retained for the final survey. The reliability coefficients were 0.854 for the knowledge scale and 0.919 for the supplement consumption behavior scale, indicating good to excellent internal consistency.

Data Collection Procedure

Data collection began after obtaining permission from the management of Brother Fitness Majalengka. Participants were informed about the objectives of the study, its potential benefits, data confidentiality, and their right to withdraw from the study at any stage without any consequences. Written informed consent was obtained from all participants before data collection. The questionnaires were administered either in person or through Google Forms, depending on participants' preferences. Completed questionnaires were carefully reviewed to ensure completeness and consistency before being included in the statistical analysis.

Data Analysis

Data were analyzed using IBM SPSS Statistics version 26, with the level of statistical significance set at $\alpha = 0.05$ (Wagner, 2015). Descriptive statistics were first calculated to summarize participants' characteristics and the distribution of research variables, including frequencies, percentages, means, standard deviations, minimum scores, and maximum scores.

The levels of knowledge regarding sports supplements and supplement consumption behavior were determined using the following formula:

$$\text{Percentage Score} = (\text{Observed Score} / \text{Ideal Score}) \times 100\%.$$

Before hypothesis testing, the assumptions of normality and linearity were evaluated. The normality of the residuals was examined using the Kolmogorov–Smirnov test, and data were considered normally distributed when the significance value exceeded 0.05. The linear relationship between the independent and dependent variables was assessed using the test of linearity. After satisfying these assumptions, the research hypothesis was tested using simple linear regression analysis with the following regression model:

$$[Y = a + bX]$$

where Y represents sports supplement consumption behavior, X represents knowledge of sports supplements, a is the regression constant, and b is the regression coefficient. Statistical significance was determined based on a p-value of less than 0.05. The proportion of variance in supplement consumption behavior explained by knowledge of sports supplements was evaluated using the coefficient of determination (R^2).

Results and Discussion

Results

Prior to the main data collection, the research instrument was pilot-tested on 20 respondents who had characteristics similar to those of the main study participants but were not included in the main sample. The pilot test was conducted to assess the validity and reliability of the instrument, ensuring that only items meeting the required criteria were retained for the main study.

Instrument Validity

Instrument validity was assessed using the Pearson Product–Moment correlation with the assistance of IBM SPSS Statistics. Based on the pilot-test sample of 20 respondents ($n = 20$), the critical r-value was 0.4438 at the 5% significance level. An item was considered valid if its

calculated r-value was greater than the critical r-value of 0.4438. Items that did not meet this criterion were excluded from the final research instrument.

Table 1. Recap of Instrument Validity Test Results

Variable	Number of Items	Valid Starting Items	Invalid Items
Understanding Sports Supplements	25	17	8
Supplement Consumption Behavior	20	18	2

The validity test results showed that, for the sports supplement knowledge variable, 17 items met the validity criteria, while 8 items were eliminated because their correlation coefficients were below the critical r-value. For the sports supplement consumption behavior variable, 18 items were considered valid, whereas 2 items did not meet the validity criteria. Therefore, the final research instrument used for the main data collection consisted of 35 valid items that met the requirements for construct validity.

Instrument Reliability

The reliability of the instrument was assessed using Cronbach's alpha coefficient. The instrument was considered reliable when the Cronbach's alpha value exceeded 0.70, indicating an acceptable level of internal consistency among the questionnaire items.

Table 2. Instrument Reliability Results

Variable	Item Total	Cronbach's Alpha	Information
Understanding Sports Supplements	17	0,854	Reliabel
Supplement Consumption Behavior	18	0,919	Reliabel

A Cronbach's alpha value of 0.854 for the sports supplement knowledge scale and 0.919 for the sports supplement consumption behavior scale indicated that both instruments demonstrated high internal consistency and were therefore suitable for use in the main data collection.

Respondent Characteristics

Following confirmation that the instruments were valid and reliable, the main study was conducted involving 30 members of Brother Fitness Majalengka who met the established inclusion criteria, including regular participation in fitness training. The main sample consisted of members who participated in training at least twice per week

Table 3. Respondent Characteristics

Characteristics	Category	n	%
Age	18–21 age	5	16,7
	22–24 age	18	60
	25–27 age	7	23,3
Training Frequency	2 /week	3	10
	3 /week	25	83,3
	4 /week	2	6,7
Total		30	100

The participants ranged in age from 18 to 27 years, with a mean age of 23.03 years. The majority of participants engaged in fitness training three times per week, indicating that most of them were active fitness center members. These characteristics are relevant to the objectives of the study because the participants had sufficient training experience and were potentially exposed to or involved in the use of sports supplements as part of their fitness activities.

Descriptive Analysis

Descriptive analysis was conducted to describe the distribution and general tendency of the data for each research variable. The analysis included the mean, standard deviation, minimum score, maximum score, frequency, and percentage to provide an overall description of participants' levels of sports supplement knowledge and consumption behavior

Table 4. Descriptive Statistics of Research Variables

Variable	N	Minimum	Maksimum	Mean	SD	Category
supplement knowledge	30	37	51	44,9	3,21	Good
Consumption Behavior	30	34	52	45,97	5,2	Good

The descriptive analysis showed that the mean score for sports supplement knowledge was 44.90, while the mean score for sports supplement consumption behavior was 45.97. The relatively small standard deviations indicated a low degree of variation among participants, suggesting that the response distributions were relatively homogeneous. The percentage score analysis showed that participants' level of knowledge reached 66.03%, while sports supplement consumption behavior reached 63.84%, indicating that both variables were classified as good based on the categorization used in this study.

Assumption Testing

Normality Test

The normality of the data was assessed using the One-Sample Kolmogorov–Smirnov Test.

Table 5. Normality Test

Asymp. Sig.	Decision
0,183	Normal

Normality Test

The significance value of 0.183 (>0.05) indicates that the residuals of the regression model are normally distributed. Therefore, the normality assumption has been satisfied.

Linearity Test

The relationship between understanding of sports supplements and sports supplement consumption behavior was tested using the Test for Linearity.

Table 6. Linearity Test

Parameter	Sig.
Linearity	0
Deviation from Linearity	0,536

The significance value for Linearity was 0.000 (<0.05), while the significance value for Deviation from Linearity was 0.536 (>0.05). These results indicate that the relationship between the two variables is linear, thereby satisfying the linearity assumption for regression analysis.

Hypothesis Testing

Simple Linear Regression Analysis

The results of the regression analysis indicate that understanding of sports supplements has a positive effect on supplement consumption behavior among members of Brother Fitness Majalengka

Table 7. Regression Analysis Results

Variable	B	β	t	Sig.
Constant	-10,388	0,774	-1,19	0,244
Knowledge	1,255		6,473	0

The regression equation obtained was:

$$Y = -10.388 + 1.255X$$

The positive regression coefficient indicates that every one-unit increase in the level of knowledge of sports supplements is associated with a 1.255-unit increase in the score of sports supplement consumption behavior.

t-Test

The calculated t value was 6.473 with $p < 0.001$, indicating that understanding of sports supplements has a statistically significant effect on sports supplement consumption behavior. Therefore, the research hypothesis was accepted.

Coefficient of Determination

The coefficient of determination (R^2) was 0.599, indicating that understanding of sports supplements explains 59.9% of the variation in sports supplement consumption behavior among members of Brother Fitness Majalengka. The remaining 40.1% is explained by other factors that were not examined in this study

Table 8. Koefisien Determinasi

R	R^2	Adjusted R^2
0,774	0,599	0,585

The R^2 value of 0.599 indicates that 59.9% of the variation in sports supplement consumption behavior can be explained by the respondents' level of understanding of sports supplements. The remaining 40.1% is influenced by other factors that were not analyzed in this study, such as training experience, social media influence, recommendations from coaches, educational background, and economic factors.

Discussions

Level of Understanding of Sports Supplements among Brother Fitness Majalengka Members The present study found that the level of understanding of sports supplements among Brother Fitness Majalengka members was moderate, with an achievement score of 66.03%. This finding indicates that respondents generally possessed basic knowledge regarding the benefits,

types, dosage, risks, and safety of sports supplements. However, their understanding was not yet comprehensive, particularly concerning appropriate dosage, potential adverse effects, product safety, and the need to match supplement use with individual nutritional and training requirements.

This finding is consistent with recent evidence showing that physically active populations may have relatively high exposure to sports nutrition information but do not necessarily possess adequate sports nutrition knowledge. Sahin & Sanlier, (2025), in a study of collegiate athletes in Ireland, reported that overall nutrition knowledge was only at an average level, while sports nutrition knowledge was classified as poor. Importantly, athletes who had previously received nutrition education or training demonstrated significantly better nutrition knowledge than those without such exposure. These findings support the present study by indicating that participation in sport or regular exercise alone does not guarantee adequate understanding of sports nutrition and supplementation.

The present findings are also strongly supported by the systematic review conducted by Ventura et al., (2025), which specifically examined knowledge, attitudes, and practices related to dietary supplement use among gym users. The review included 24 cross-sectional studies involving more than 9,000 gym users and found a high prevalence of supplement use. Protein supplements were the most frequently consumed products, while the internet and media were among the most commonly used sources of supplement information. The authors emphasized that the frequent reliance on non-healthcare professionals and digital media may be problematic because such sources do not always provide trustworthy or evidence-based information.

This situation is relevant to the context of Brother Fitness Majalengka. Members of a fitness center are routinely exposed to information concerning protein powders, creatine, amino acids, multivitamins, pre-workout products, and other supplements. Information may be obtained through trainers, training partners, online communities, social media, and commercial advertisements. Consequently, respondents may be familiar with the names and general functions of supplements without necessarily understanding the scientific basis for their use.

Recent evidence further demonstrates that the source of nutrition information is associated with nutrition knowledge. Smith et al. (2025) found that the internet, social media, coaches or personal trainers, and teammates were among the most common sources of nutrition information among athletes. However, participants who used scientific literature or consulted qualified nutritionists or dietitians demonstrated higher nutrition knowledge scores. This finding suggests that access to information alone is insufficient; the credibility and scientific quality of the information source are also important.

The rapid development of social media has further complicated the process of obtaining reliable nutrition information. A recent editorial in *Nature Metabolism* highlighted that social media platforms prioritize content that attracts attention and engagement, which can allow questionable nutrition claims to spread more rapidly than evidence-based information. Supplement promotions, influencer marketing, and commercially motivated health claims may therefore shape public perceptions of nutrition and supplementation. Similarly, recent research examining nutrition misinformation on Instagram and TikTok identified the rapid dissemination of unverified nutrition information as an important public health concern (Amalia et al., 2023).

The moderate level of understanding identified in this study can therefore be interpreted as a reflection of the information environment surrounding fitness communities. Members may have considerable exposure to supplement-related information but may not always possess the scientific literacy required to distinguish evidence-based information from commercial claims, personal testimonials, or misleading health advice. This interpretation is particularly important because supplement use is often associated with expectations of improved muscle growth, enhanced performance, faster recovery, or improved body composition.

Recent research also supports the importance of education in improving sports nutrition knowledge. Sahin & Sanlier, (2025) reported that previous nutrition education or training was significantly associated with better general nutrition, sports nutrition, and total nutrition knowledge. The study also found that a large proportion of athletes wanted additional nutrition

support, particularly regarding protein powders and supplements. These findings reinforce the need for structured nutrition education within fitness environments.

In addition, He & Lin, (2025) examined dietary supplement use and knowledge among athletes and emphasized the importance of awareness regarding supplement classification and certification programs. Their findings highlight that supplement use should not be considered solely from the perspective of performance enhancement but also from the perspectives of product quality, safety, and appropriate certification.

Thus, the moderate level of understanding found among Brother Fitness Majalengka members indicates that there is an opportunity to strengthen sports supplement literacy. Educational programs should emphasize not only the benefits and types of supplements but also appropriate dosage, indications, potential risks, product certification, and the ability to critically evaluate information obtained from social media and other digital sources

Relationship between the Level of Understanding and Sports Supplement Consumption Behavior

The results of this study indicate a positive and significant relationship between the level of understanding of sports supplements and sports supplement consumption behavior among Brother Fitness Majalengka members. The simple linear regression analysis showed a positive regression coefficient, indicating that higher understanding scores tended to be associated with higher sports supplement consumption behavior scores.

The hypothesis testing results showed a calculated t-value of 6.473 with a significance value of less than 0.001. These results indicate that the relationship between the level of understanding and sports supplement consumption behavior was statistically significant. Therefore, the research hypothesis stating that there is a relationship between understanding of sports supplements and sports supplement consumption behavior among Brother Fitness Majalengka members can be accepted.

The regression equation obtained was $Y = -10.388 + 1.255X$. The positive regression coefficient indicates a positive relationship between the two variables. In other words, the higher the respondents' understanding of sports supplements, the higher their sports supplement

consumption behavior scores tended to be. However, this finding should be interpreted as a statistical relationship rather than evidence that understanding directly causes changes in consumption behavior, considering that this study employed an analytical cross-sectional survey design in which the variables were measured at a single point in time.

The coefficient of determination (R^2) of 0.599 indicates that 59.9% of the variation in sports supplement consumption behavior in this study could be explained by the variable of understanding of sports supplements. Meanwhile, the remaining 40.1% of the variation was associated with other factors that were not analyzed in this study. These factors may include training experience, exercise goals, influence from trainers, training partners, social media, educational background, economic conditions, previous supplement-use experience, and other environmental factors.

These findings indicate that understanding is one of the factors associated with sports supplement consumption behavior. Individuals with a better understanding of the benefits, types, dosage, risks, and safety of supplements have a stronger informational basis for making decisions regarding supplement use. Conversely, limited understanding may increase the likelihood that individuals make decisions based on informal information, the experiences of others, or product promotions that may not correspond to their individual needs.

The findings can be related to the Theory of Planned Behavior proposed by (Reading & LaRose, 2022). This theory explains that behavior is associated with behavioral intention, while intention is influenced by attitudes, subjective norms, and perceived behavioral control. In the context of this study, understanding of sports supplements may serve as one of the foundations for developing attitudes and considerations when individuals make decisions regarding supplement use. Nevertheless, understanding is not the only component determining behavior because individual decisions may also be influenced by social environments and perceptions of one's ability to perform a particular behavior.

The relationship can also be explained through the Health Belief Model, which emphasizes the importance of individuals' perceptions of benefits and risks in determining health-related

behavior. Better understanding of the benefits and potential risks of supplements may help individuals consider whether a particular product is actually necessary, how it should be used, and what risks may arise from inappropriate consumption.

The findings of this study are consistent with Lombardo et al., (2024), who reported an association between sports nutrition knowledge and supplement-use behavior among individuals actively engaged in fitness activities. Better knowledge may help individuals become more selective when choosing products and pay greater attention to information related to their use. Similar findings were reported by Ventura et al., (2025), who demonstrated the importance of knowledge regarding the benefits and risks of supplements in promoting more responsible supplement-use behavior.

Although a relatively strong relationship was found in this study, the results do not indicate that understanding is the only factor associated with sports supplement consumption behavior. A proportion of behavioral variation remains attributable to other factors. Therefore, efforts to improve supplement literacy should be accompanied by the development of a training environment that supports safe and rational consumption behavior.

In the context of Brother Fitness Majalengka, efforts to improve understanding can be implemented through regular educational activities covering supplement types, benefits, dosage, risks, safety, and strategies for evaluating product information. Trainers and fitness-center managers can also encourage members to consult qualified professionals when considering the use of particular supplements, especially when supplement use is related to specific health conditions or nutritional requirements.

Overall, this study demonstrates that the level of understanding of sports supplements has a positive and significant relationship with sports supplement consumption behavior among Brother Fitness Majalengka members. These findings highlight the importance of improving sports nutrition literacy as an effort to support more appropriate, safe, and responsible decision-making regarding supplement consumption. However, because the study employed a cross-sectional design and the main research sample was relatively limited, the relationship should be interpreted

within the characteristics of the respondents and the research setting and should not be directly generalized to all fitness-center users

Conclusion

This study concludes that the level of understanding of sports supplements among Brother Fitness Majalengka members was moderate. Although respondents generally had basic knowledge of supplement benefits, types, dosage, risks, and safety, further improvement in sports supplement literacy is needed. The findings also revealed a positive and significant relationship between understanding of sports supplements and supplement consumption behavior. Better understanding was associated with more appropriate, safe, and responsible consumption behavior. Therefore, continuous evidence-based education involving qualified health professionals, sports nutritionists, and competent trainers is recommended to improve supplement-related decision-making. Future studies should involve larger samples and broader settings while examining other factors, such as exercise motivation, training experience, social media exposure, body image, and trainer influence.

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