

A Study to Understand the Perception of Indian Athletes on Whey and Plant-Based Protein Powders

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Abstract

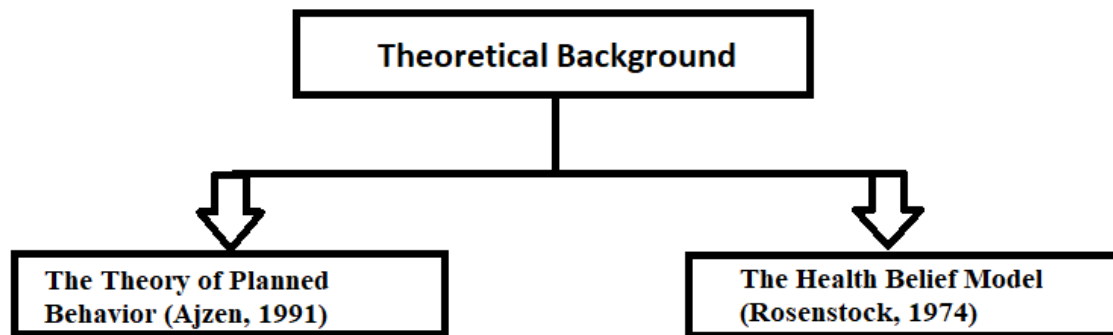
This work investigates the opinions of athletes on whey and vegan protein powders in terms of three main aspects: effectiveness, safety, and environmental footprint. Although protein powders are fashionable in sports and fitness, there has not been much research done comparing animal and plant proteins in terms of anything other than nutritional content. A total of 101 athletes responded to a structured questionnaire with 10 multiple choice questions distributed through Google Forms. The data regarding the usage of both protein types and their perceptions were analyzed using descriptive statistics. In addition, chi-square tests were applied to determine the differences between the demographic variables and the assessments made by the athletes regarding effectiveness, health safety, and sustainability. The results give a new perspective on how athletes view whey and vegan protein powders, as they also point out the advantages and disadvantages of each. Informed decision-making is thus facilitated for consumers and sellers and at the same time, trends in sports nutrition and sustainable dietary practices are supported by such research.

Keywords: comparative study, perception, effectiveness, protein powder

Introduction

Athletic athletes' nutrition is mainly determined by protein supplements, but there is still little evidence comparing their origins. India sees a growing trend in the use of supplements, hence deciphering the user's mindset is critical. This research evaluates the perception of Indian football players towards whey and vegan protein powders in terms of three factors: performance effectiveness, health safety, and environmental sustainability among a growing fitness population.

The Theory of Planned Behavior (Ajzen, 1991) provides an explanation of how personal attitudes, norms, and perceived control affect people's intentions and behaviors. In the present study, it serves to clarify protein supplement choice of athletes, alongside by considering the factors of the said attitudes—effectiveness, sustainability, and safety—leading to their preference of whey or vegan protein. The Health Belief Model (Rosenstock, 1974) explains health-related behaviors by focusing on individuals' beliefs about health risks and the perceived benefits or barriers to taking preventive action. In this study, it helps understand athletes' choices towards protein powders based on their perceived susceptibility to health issues, perceived benefits of whey and vegan protein.



Need of the Study:

The researcher was keen in to investigate on the perception of Indian athletes on Whey and plant-based protein powders. The investigator aimed to address the following questions:

1. What is the main reason for using protein powders?
2. How effective are whey protein and vegan protein perceived to be?
3. How safe are whey and vegan protein powders perceived to be?

Aim of the Study:

A study to understand the perception of Indian athletes on Whey and plant-based protein powders

Research Objectives

- To examine Indian athletes' perceptions of the effectiveness of whey and vegan protein powders in performance and recovery
- To analyze athletes' perceptions of the safety of whey and vegan protein powders regarding side effects and long-term use.
- To investigate athletes' perceptions of the sustainability of whey and vegan protein powders.
- To compare the overall preference of Indian athletes for whey and vegan protein powders across effectiveness, safety, and sustainability.

Review of Literature

(Filipe J Teixeira 1, 2022) A research intervention-based study "A Novel Plant-Based Protein Has Similar Effects Compared with Whey When Matched for Essential Amino Acids" was carried out under athletic performance conditions to compare plant-based protein and whey. Leucine and essential amino acids were matched across proteins in the study done on active and professional futsal players. The results showed that there were no significant differences in muscle protein synthesis, strength, body composition, or recovery, indicating that contemporary vegan proteins are as good as whey in terms of effectiveness.

(Shiao Zhao 1, 2024) The systematic review and its corresponding meta-analysis labeled "The Effect of Plant-Based Protein Ingestion on Athletic Recovery and Performance" scrutinized recovery and performance implications for athletes taking plant proteins as supplements. Plant proteins are shown to be good for muscle recovery and performance, especially when mixing sources like pea and rice gives the blend a stronger synergistic effect. On the other hand, whey and animal proteins have been attributed with minimal benefits for certain strength parameters, which still uphold the long-held notion among athletes that whey is the most potent.

(Edda Cava 1, 2024) The review on whey protein "Investigating the Health Implications of Whey Protein" reviewed the safety profile of whey protein supplement. It also mentioned that side effects like acne and gastrointestinal problems were reported more frequently among the persons with adverse reactions or pre-existing conditions. The study eventually declared that intake of moderate whey is safe for the healthy individuals, but upeful or impure use has been the cause of the long-term health risks, and hence the concern of athletes regarding digestive and hormonal effects.

_(Vishw Patel a, 2023) The article "Protein Supplementation: The Double-Edged Sword" inspected the dangers connected with consuming a lot of proteins through processed supplements in particular. It pointed out the issues like kidney problems, dehydration, altered biochemical markers, and the presence of heavy metals or steroids in low-quality powders. Even though the effectiveness of whey use has been proven, these problems still cause safety concerns in countries like India where regulatory oversight is not uniform. The research underlines caution regarding supplementation and the choice of certified quality assured products.

(Anne Charlotte Bunge, 2024) In their Nature Communications article "Sustainability benefits of plant-based dietary transitions", the authors evaluated the consequences of changing dietary habits from animal-based proteins to plant-based ones. The results of their modelling showed major decreases in emissions of greenhouse gases, land usage, and water consumption when dairy-derived products, such as whey, were substituted with plant-based proteins. This scientific evidence reinforces the prevalent view that not only are vegan protein powders less damaging to the environment but also, they are in line with the new ethical consumerism that includes even environmentally conscious athletes.

Hypothesis:

1. There is a significant difference in perceived effectiveness between whey and vegan protein powders.
2. There is a significant difference in perceived safety between whey and vegan protein powders.
3. Age group and type of protein powder used are not independent.
4. There is an association between sustainability perception and recommendation preference.

Methodology

The investigator research to understand the different perceptions of Indian athletes on Whey and Vegan available protein powders using simple random sampling techniques the researcher distributed a Google form questionnaire to athletes pan India and successfully collected 101 responses from Indian athlete respondents, where the participants where from all genders. The questionnaire tool consisted of a mix of 5-point Likert scale, multiple choice questions, and checkbox type questions. The researcher framed the questions to focus on three key factors i.e. effectiveness, safety, and sustainability, while studying athletes' perceptions of whey and vegan protein. The data was collected in a systematic manner, and the respondents, were informed that their responses would be used for research purposes and would remain confidential.

Sample & Data collection procedure:

The researcher shared the google form questionnaire directly with the Indian athletes pan India via snowballing sampling method. The respondents were given clear instructions on the purpose of data collection, how to fill the form, and accordingly 101 responses were collected post voluntary participation of the sample respondents.

Tool/Instrument:

The investigator developed a 10-item tool to collect data. Content validity was also ensured, and necessary modifications were made based on expert feedback. The final version of the tool was then circulated among Indian athletes pans India as the primary instrument for data collection.

Data Analysis

- **(H1₀):** There is **no significant difference** in perceived effectiveness between whey and vegan protein powders.
- **(H1₁):** There is **a significant difference** in perceived effectiveness between whey and vegan protein powders.

The calculated value of Wilcoxon Signed-Rank is 240.0 and the p-value is 0.0000. This indicates that there is a statistically significant difference in perceived effectiveness between whey and vegan protein powders. It further implies that athletes perceive whey protein as more effective than vegan protein.

- **H2₀:** There is **no significant difference** in perceived safety between whey and vegan protein powders.
 - **H2₁:** There is **a significant difference** in perceived safety between whey and vegan protein powders.
- The calculated value of Wilcoxon Signed-Rank is 344.0 and the p-value is 0.6698. This indicates that there is no significant difference in how safe athletes perceive whey vs. vegan protein powders. Both are seen as equally safe overall.

- **H3₀:** Age group and type of protein powder used are **independent** (no association).
 - **H3₁:** Age group and type of protein powder used are **not independent** (there is an association).
- The calculated value of Chi-square is 12.832 and the p-value is 0.2332 at 10 degrees of freedom. This indicates that there is no significant association between age group and type of protein powder used. Protein choice (whey/vegan/both) does not depend on age in this sample.

- **H4₀:** There is **no association** between sustainability perception and recommendation preference.
 - **H4₁:** There is **an association** between sustainability perception and recommendation preference.
- The calculated value of Chi-square is 48.217 and the p-value is 0.000 at 4 degrees of freedom. This indicates that there is a strong, significant association between athletes' sustainability beliefs and the type of protein they recommend. Those who see vegan protein as more sustainable tend to recommend it more to others.

Summary

Hypothesis	Test Used	p-value	Result	Interpretation
H1: Effectiveness (Whey vs. Vegan)	Wilcoxon	0.0000	Significant	Whey perceived as more effective
H2: Safety (Whey vs. Vegan)	Wilcoxon	0.6698	Not significant	Perceived equally safe
H3: Age vs. Use	Chi-square	0.2332	Not significant	No age–usage relationship
H4: Sustainability vs. Recommendation	Chi-square	0.0000	Significant	Sustainability belief influences recommendation

Conclusion

The study aimed to understand Indian athletes' viewpoints regarding whey and plant-based protein powders in the case of effectiveness, safety, and sustainability. The findings presented a large gap regarding the effectiveness perceived, where whey was preferred for both performance and recovery. The safety of both protein types was considered the same. However, sustainability was highlighted as the most significant difference, since the athletes who thought that vegan protein was good for the environment and society were the ones most likely to advocate for it. To summarize, whey still has the upper hand, but the increasing awareness of sustainability is changing the taste in the sports nutrition market of India.

Discussion

Whey protein has always been the dominant player in the market, and that is where its scientific endorsement among sportspeople comes from. Nevertheless, with plant protein gradually being accepted as a competitor, the attitude of consumers is still very much influenced by their old beliefs which in turn affects their choice of brands and trust in them. The perception of the safety of these products points at the growing knowledge of the quality of what is on the market and the right amount to take, thus eliminating bias as to which source is better. Surprisingly, sustainability emerged as the factor with the strongest effect on behavior, indicating that ethical and environmental considerations are becoming more important in the choice of sports supplements.

Future Research Recommendations

- Further research should examine the effects of marketing, social media, and misinformation on athletes' supplement choices.
- Studies could also differentiate between individual vegan protein types such as pea, soy, and rice to understand varying perceptions and performance outcomes.
- Lastly, future data collection should track changes in attitudes over time as vegan protein becomes more mainstream and scientifically supported.

Research and Citations

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