

GENDER-BASED DIFFERENCES IN ADULT CONSUMER BEHAVIOR TOWARD WELLNESS PHARMA PRODUCTS

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Pharmaceutical Management

by

Sankalp Oltikar

Under the Supervision and Guidance of

Dr. Rahul Sharma

2025

CERTIFICATE OF COMPLETION

This is to certify that **Sankalp Oltikar**, in partial fulfilment of the requirements for the award of the degree of MBA (Pharmaceutical Management) from the IIHMR University, Jaipur has successfully completed his internship at IIHMR University during March 10 – May 31, 2025.

Place: IIHMR-U, Jaipur
Date: 17/06/2025

A handwritten signature in blue ink, appearing to be 'PS' followed by a stylized flourish.

Preceptor

IIHMR University, Jaipur

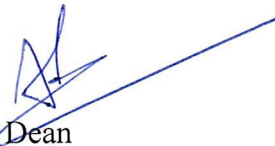
CERTIFICATE

This is to certify that the dissertation titled “**Gender-Based Differences in Adult Consumer Behaviour Towards Wellness Pharma Products**” is a record of the research work undertaken by **Sankalp Oltikar** in partial fulfilment of the requirements for the award of the degree of MBA (Pharmaceutical Management) from the IIHMR University, Jaipur under my guidance and supervision and his approach to the research study has been sincere, scientific and analytical.



Faculty guide

Dr Rahul Sharma
Assistant Professor
IIHMR University, Jaipur
DATE:17/06/2025

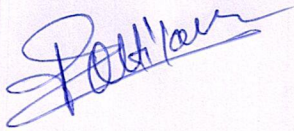


School Dean

Dr. Saurabh Kumar Banerjee
IIHMR University, Jaipur
DATE:17/06/2025

DECLARATION BY STUDENT

I hereby declare that this dissertation, titled “**Gender-Based Differences in Adult Consumer Behavior Toward Wellness Pharma Products,**” is the bona fide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



(Signature)
Sankalp Oltikar

Date: 17/06/2025

GENDER-BASED DIFFERENCES IN ADULT CONSUMER BEHAVIOR TOWARD WELLNESS PHARMA PRODUCTS

Abstract

This research investigates the gender-based differences in adult consumer behavior toward wellness pharmaceutical products. With increasing consumer awareness and demand for wellness-oriented products such as herbal supplements, nutraceuticals, and skincare formulations, understanding demographic-specific preferences has become crucial for pharmaceutical marketers and public health advocates. This study employs a structured survey of 270 participants, equally divided by gender, to examine variables such as product usage frequency, purchase channels, influencing factors (brand trust, price, recommendations, advertisement, scientific claims), and advertisement appeal. The methodology uses a quantitative approach with statistical tools including chi-square tests and independent t-tests to validate hypotheses related to gender and consumer behavior.

Preliminary analysis reveals no statistically significant difference in purchase frequency between males and females, but further investigation into marketing preferences and pricing sensitivity indicates nuanced behavioral distinctions. The study contributes to the growing literature on wellness product marketing and consumer segmentation. The findings have implications for targeted marketing strategies, product development, and health communication.

Keywords: Consumer behavior, gender differences, wellness pharma products, health marketing, brand trust, advertisement, statistical analysis

ACKNOWLEDGEMENT

As my project report nears completion, I would like to take this time to thank everyone who contributed to my research. It gives me great pleasure to take advantage of this once-in-a-lifetime opportunity to thank my esteemed faculty and the Dean & Associate Professor of the School of Pharmaceutical Management at the IIHMR University, Jaipur, for their unmatched & outstanding support & encouragement as I worked to finish my course and dissertation. I would also like to thank my guide and faculty mentor Dr. Rahul Sharma, Assistant Professor, IIHMR University, Jaipur, for his unwavering support and guidance.

Place:

Date:

Sankalp Oltikar

Table of Contents:

1. Introduction
2. Review of Literature
 - 2.1. Introduction
 - 2.2. Trends in Wellness Pharma Consumption Among Adults
 - 2.3. Gender Differences in Health Behavior and Attitudes
 - 2.4. Gender-Specific Use of Nutraceuticals, Supplements, and Alternative Medicines
 - 2.5. Gender and Health Information-Seeking Behavior
 - 2.6. Consumer Decision-Making Differences Between Males and Females
 - 2.7. Gaps in Current Literature
3. Methodology
 - 3.1. Research Design
 - 3.2. Population and Sampling Technique
 - 3.3. Data Collection Instrument (Questionnaire)
 - 3.4. Procedure for Data Collection
 - 3.5. Ethical Considerations
 - 3.6. Statistical Analysis Methods**
4. Results and Analysis
5. Discussion
6. Conclusion and Recommendations
7. References
8. Annexure

CHAPTER 1: INTRODUCTION

Background:

Wellness has emerged as a dominant consumer priority in recent years, giving rise to a booming global industry of health and wellness products and services. According to a recent McKinsey study, 82% of consumers prioritize wellness, fueling a global wellness market valued at roughly \$1.8 trillion [1]. Wellness pharma products – which include dietary supplements, vitamins, herbal remedies, nutraceuticals, and other over-the-counter health products aimed at enhancing well-being – have become increasingly commonplace in consumers’ daily routines. These products represent a proactive approach to health, blurring the line between traditional pharmaceuticals and consumer goods as people seek to take charge of their well-being in preventive ways. In this context, understanding consumer behavior toward wellness pharma products is of great interest to marketers, healthcare providers, and policymakers alike.

One critical aspect of consumer behavior in this domain is gender-based differences. Men and women often exhibit distinct attitudes, motivations, and purchasing patterns when it comes to health-related products. Prior research and industry surveys suggest that female consumers tend to be more proactive and engaged in health and wellness decisions than their male counterparts [2]. For instance, an Oliver Wyman health survey found women more interested than men in virtually all health services and wellness offerings surveyed [3]. Women frequently serve as primary healthcare decision-makers in households – in the U.S., about 70% of family prescriptions are picked up by women [4] – indicating their influential role in day-to-day health maintenance. Men, historically, have been less likely to seek preventive care or wellness guidance, contributing to observed gaps in health behaviors [5]. However, recent trends show that men’s interest in wellness is on the rise; for example, in Australia, the number of men prioritizing fitness and a balanced lifestyle jumped significantly in the past five years [6]. These evolving dynamics make it important to analyze gender-specific consumer behavior, so that wellness product providers can tailor marketing strategies and public health initiatives can address each group’s needs.

Despite the growing market and its importance, there is a research gap in understanding how gender influences consumer behavior, specifically for wellness-focused pharmaceutical products. Much of the existing literature on consumer behavior by gender focuses on general retail contexts or traditional healthcare utilization, rather than this hybrid category of wellness

pharma goods. This research addresses that gap by examining adult consumer behavior toward wellness pharma products through a gender lens. The study utilizes primary data from a survey of adult consumers to compare male and female behaviors – including product usage patterns, purchasing frequency, factors influencing decisions, and attitudes toward wellness products. By analyzing these differences, the research aims to shed light on how gender identity shapes consumption in the wellness domain and to offer insights for more gender responsive marketing and consumer education.

Research Objectives: The primary objective of this study is to determine whether and how adult male and female consumers differ in their behavior toward wellness pharma products. The specific goals include:

- Measuring and comparing the frequency of use and purchase of wellness pharma products among adult men and women.
- Identifying any gender differences in the types of wellness products used (e.g. vitamins, herbal supplements, fitness-related supplements, etc.).
- Investigating gender-based differences in the factors influencing purchase decisions (such as price sensitivity, brand loyalty, quality perceptions, recommendations, etc.).
- Examining whether men and women differ in their information sources and decision-making processes for wellness products (for example, consulting healthcare professionals vs. online research).
- Comparing attitudes and perceptions towards wellness pharma products between genders, including health consciousness levels and trust in these products' efficacy.

By fulfilling these objectives, the research will contribute a nuanced understanding of gender-specific consumer behavior in the wellness pharma sector. Such insights can help companies in the wellness industry design more effective, targeted marketing strategies and product offerings. It can also inform healthcare practitioners and policymakers in promoting wellness interventions that resonate with each gender group.

Structure of the Research: This report is organized into several chapters following the university's dissertation format. The Introduction (current chapter) has outlined the research problem, context, and objectives. Next, a Review of the Literature will discuss existing studies and theoretical perspectives on consumer behavior in health and wellness,

with a focus on gender differences. The Methodology chapter will describe the research design, survey instrument, sampling methods, and analytical techniques used. The Results and Discussion chapter will present the findings from the survey, including statistical analysis with tables and graphs, and interpret the results in light of the literature. The dissertation then concludes with a Conclusion summarizing key findings and implications, followed by Recommendations for practice and future research. Finally, References are listed in Vancouver style, and relevant materials such as the survey questionnaire are provided in the Annexures.

CHAPTER 2: LITERATURE REVIEW

Introduction

Wellness pharmaceutical products – including dietary supplements, nutraceuticals, herbal remedies, and other over-the-counter health products – have become a mainstay in adult consumers’ health routines worldwide. These products are used to promote general well-being, prevent illness, and enhance quality of life, forming a significant part of the broader “wellness” industry. In recent years, the consumption of such wellness pharma products has surged globally, accelerated in part by greater health awareness and events like the COVID-19 pandemic [7]. Understanding how consumer behavior varies by gender in this context is crucial for public health strategists and marketers, as men and women often exhibit distinct health behaviors, decision-making processes, and responses to marketing. This literature review synthesizes current research (with a focus on 2020–2024 studies, alongside foundational works) on gender-based differences in adult consumer behavior toward wellness pharma products. Key themes include overall trends in consumption, differences in health attitudes, gender-specific use patterns of supplements and alternative medicine, health information-seeking behavior, consumer decision-making distinctions, gender-targeted marketing strategies, and gaps in the existing literature.

Throughout the review, “wellness pharma products” refers broadly to non-prescription health products aimed at wellness and prevention – such as vitamins, mineral supplements, nutraceuticals, functional foods, and complementary/alternative remedies. The review incorporates both global findings and, where available, insights specific to India, recognizing the growing nutraceutical market and unique context in India. The goal is to provide a clear and analytical overview of how gender influences consumer engagement with wellness pharma products, supported by evidence from peer-reviewed studies.

1. Trends in Wellness Pharma Consumption Among Adults

Consumption of wellness-oriented pharmaceutical products has grown remarkably among adults worldwide. Over the past two decades, the use of dietary supplements and similar products has continuously increased in many countries [8]. This upward trend was amplified during the COVID-19 pandemic, as consumers sought products to bolster immunity and health. For example, global sales of dietary supplements surged by roughly 50% between 2018 and 2020, reaching over \$220 billion in 2020. This spike is attributed to pandemic-driven health anxieties and supply issues with conventional medicine, which led many to turn to vitamins, herbs, and nutraceuticals as alternative protections. While scientific evidence for COVID-

specific benefits of supplements was lacking, the demand for wellness products skyrocketed nonetheless, reflecting consumers' desire for any perceived health advantage [9].

Even beyond pandemic effects, the long-term trajectory points upward. Industry analyses project the global dietary supplements market will continue expanding (e.g. an estimated \$300 billion size by 2028) as health and wellness remain high priorities. Regional data mirror this pattern. In the United States, over half of adults regularly use at least one dietary supplement in a given month [10]. A national survey in 2017–2018 found 57.6% of U.S. adults had used a supplement in the past 30 days. Usage tends to increase with age – for instance, 80% of American women over 60 use supplements [11] – indicating that wellness product consumption is particularly common among older adults. Other countries report even higher adoption: about 80% of the population in Jordan uses dietary supplements or herbal remedies [12]. In Algeria, the prevalence of supplement users jumped from 29% before the pandemic to 63% during the pandemic, highlighting how quickly consumer behavior can shift in response to health crises. The Middle Eastern market likewise saw growth, with widespread use of immunity-related supplements like vitamins C and D [13].

In India, the wellness pharma sector is expanding rapidly in response to rising health awareness. The nutraceuticals and supplements market in India was valued around \$4–8 billion in 2020 and is projected to reach approximately \$18 billion by 2025 [14]. Key drivers include a large young population, increasing lifestyle-related health issues (e.g. diabetes, obesity), and greater emphasis on preventive health. Consumer surveys indicate more Indians are incorporating vitamins (such as vitamin D) and Ayurveda-based supplements into their diets. Government support for traditional wellness systems (AYUSH) and the spread of e-commerce have also improved access to wellness products in India. These trends suggest that wellness pharma consumption has become mainstream among adults, integrating into daily routines for health maintenance. Companies are capitalizing on this demand, with the industry seeing robust growth rates year over year [15].

Overall, the literature shows a clear trajectory: adult consumers globally are using more wellness pharma products than ever before. Factors such as population aging, higher chronic disease prevalence, pandemic-era health concerns, and proactive health mindsets have all contributed to this rise. However, within this broad trend, there are notable gender-based differences in who uses these products and how – as discussed in subsequent sections.

Researchers increasingly recognize that men and women may follow distinct patterns in wellness consumption, shaped by differing health behaviors and preferences.

2. Gender Differences in Health Behavior and Attitudes

Men and women often exhibit distinct health-related behaviors and attitudes, which in turn influence their use of wellness products. A consistent finding across public health and behavioral studies is that women tend to be more health-conscious and proactive about health maintenance compared to men [16]. For example, a systematic review of primary prevention behaviors concluded that females are generally more engaged in preventive health actions and have higher health consciousness than males [17]. Women are more likely to follow recommended health practices such as regular check-ups, a balanced diet, and adherence to preventive measures. Correspondingly, women more frequently seek out healthcare services. Large-scale studies have confirmed that women visit primary care providers more often than men for both physical and mental health issues. Even after accounting for women-specific needs (like pregnancy care), women still outnumber men in doctor visits and spend longer in consultations on average [18]. This suggests an intrinsically greater inclination among women to address health concerns and utilize available care.

By contrast, men are often characterized by more risk-taking and less help-seeking in health contexts. Men historically have higher rates of behaviors such as tobacco and alcohol use, and lower rates of preventive service utilization. Global data on smoking illustrates this disparity: as of 2020, about 37% of men worldwide used tobacco vs. only ~8% of women [19]. This gap underscores that men, on average, engage more in behaviors detrimental to long-term wellness, whereas women are more likely to avoid such risks. Additionally, sociocultural norms around masculinity can discourage men from seeking help or expressing health concerns. Traditional masculine ideals emphasize self-reliance and stoicism, which may manifest as reluctance among men to seek medical advice or admit vulnerability. In contrast, feminine socialization encourages communication and care, aligning with women's greater comfort in discussing health and pursuing information [20]. These gendered norms contribute to differences observed in health attitudes: surveys consistently show women perceive health problems (e.g. the threat of illness) as more serious and report higher willingness to comply with health guidelines (a pattern notably seen during the COVID-19 pandemic) [21]. Men were comparatively less likely to view health threats as seriously or to adhere strictly to preventive measures [22], reflecting a lower perceived vulnerability or priority placed on health safeguards.

Women's more active health orientation is also evident in how they manage not only their own health but often their family's. Women frequently play the role of "health managers" in households – scheduling doctor's visits, researching treatments, and monitoring wellness for spouses/children – which further reinforces their attentive health attitudes [23]. Men, conversely, may delay seeking care or ignore symptoms until problems become acute. This divergence is supported by healthcare utilization data: women consistently use primary care and preventive services at higher rates than men [24], while men are over-represented among those who forego routine care or lack a regular source of healthcare [25].

In summary, the literature indicates that gender is a significant determinant of health behavior. Women's attitudes skew toward prevention, care-seeking, and caution, whereas men's attitudes show relatively higher risk tolerance and lower engagement with health services. These foundational differences help explain gender patterns in wellness product usage – women's proactive stance makes them more open to using supplements or alternative therapies for health improvement, while men's comparative reticence can translate into lower usage or a focus on different kinds of products. The next sections delve into how these general behavioral tendencies manifest in the specific context of nutraceutical and supplement use, information seeking, and decision-making.

3. Gender-Specific Use of Nutraceuticals, Supplements, and Alternative Medicines

Because of the differing health orientations described above, women and men show notable differences in their use of nutraceuticals, dietary supplements, and complementary/alternative medicine (CAM). Overall, research shows that female adults are more likely than males to consume vitamins, minerals, and other supplements as part of their health regimen [26]. For example, a U.S. National Health and Nutrition Examination Survey reported 63.8% of adult women use at least one dietary supplement, compared to 50.8% of men [27]. Similar patterns are observed in other countries and population groups. A Norwegian population study (Tromsø) found that women were generally more likely to use CAM at all levels (from visiting alternative practitioners to using herbal remedies and mind-body practices) than men [28]. This gender gap persisted even when controlling for health status: in the Tromsø sample, being female was associated with higher CAM usage across age groups and health conditions [29]. The findings echo those of numerous surveys indicating women tend to utilize supplements and herbal products more frequently as part of preventive or holistic health care [30]. One reason proposed is that women are more active in self-care and health promotion, making them receptive to

trying available nutraceutical options to address perceived health needs [32]. Indeed, women often report using supplements to maintain general health, boost immunity, or address specific wellness goals (e.g. skin health, bone density), aligning with their greater health concerns.

Men, while overall slightly less likely to take supplements, do use certain wellness products at high rates – particularly those tied to fitness or performance. Gender differences emerge not just in the prevalence of use, but in the types of products favored. Women more commonly consume vitamins, minerals (like calcium and iron), and herbal/dietary supplements for weight management or appearance, whereas men are more inclined toward protein supplements, sports nutrition, and performance enhancers. A content analysis of gendered supplement behavior in fitness contexts illustrates this division. Female fitness enthusiasts were found to use more supplements such as green tea extracts (often for weight loss), iron, zinc, and folic acid, whereas male athletes used more protein powders (whey, etc.) and creatine-type supplements for muscle building [32]. Another study of elite athletes similarly noted that male athletes had higher usage of protein and amino acid supplements, while female athletes were more likely to take micronutrients and health-focused supplements [33]. Even among non-athletes, this split is apparent: weight-loss and diet supplements disproportionately attract female consumers, while muscle-building and performance products target male consumers. A U.S. survey found 21% of women had used weight-loss supplements in their lifetime, compared to just 10% of men [34], reflecting the culturally reinforced emphasis on weight management for women. Men, in contrast, may gravitate toward testosterone boosters or protein shakes, products aligning with culturally masculine goals of strength and physique.

Notably, women's greater use of alternative medicine is a well-documented phenomenon in health research. Reviews consistently show women are more frequent users of complementary therapies like herbal medicine, acupuncture, yoga, and homeopathy [35]. These modalities often appeal to women's holistic health outlook and the desire for natural or preventive interventions. One large review found that across diverse Western countries, women not only used more CAM, but were "more active in their own health promotion and more concerned about health issues" than men – factors that drove them toward CAM options [36]. Furthermore, women's higher engagement with CAM has been partly attributed to possible gender biases in conventional healthcare: some scholars suggest that if women feel underserved or misunderstood in traditional medical settings, they may turn to alternative providers and products as a supplement or substitute [37]. Men, who generally use healthcare less to begin

with, are somewhat less represented in the CAM user population, except in domains like bodybuilding supplements.

It is important to note that while women lead in overall supplement usage, men's participation in the wellness market has been rising. The gap has narrowed compared to past decades as social attitudes shift and more men embrace preventive health behaviors. For instance, younger men today are more open to taking multivitamins, probiotic drinks, or wellness gadgets than their fathers' generation. Still, current data confirm a gender gap in usage remains. In sum, female consumers are the dominant users of wellness pharma products in most categories, especially those related to daily health maintenance (vitamins, nutraceuticals) and lifestyle improvement (dietary supplements for weight or beauty). Male consumers, while slightly less prevalent overall, show strong engagement in specific categories aligned with fitness and performance. These differences underscore the need for gender-tailored approaches in both health communication and product development, as discussed in later sections. They also illustrate how underlying health attitudes (women's proactive care vs. men's reactive or goal-driven use) translate into distinct patterns of product utilization.

4. Gender and Health Information-Seeking Behavior

Gender differences extend to how consumers seek out health information, including information on wellness products. A broad consensus in health communication research is that women are more active information-seekers for health topics than men [38]. Women not only consume more health information but also tend to utilize a wider array of sources (doctors, online articles, social networks, etc.) to educate themselves on health and wellness. Men, by contrast, are generally less likely to proactively search for health information, often delaying information-seeking unless a need becomes pressing. For example, a recent German study using web-based surveys found women were significantly more concerned about health issues and more frequent online health information seekers compared to men [39]. This finding aligns with earlier literature reviews which concluded that "women overall are more active information seekers than men" across various health and medicine domains [40]. Women are often the ones researching symptoms, reading about nutrition and supplements, and keeping up with medical news, whereas men are less inclined to do so voluntarily.

One area illustrating this gap is online health information-seeking behavior (OHISB). Females have been shown to make disproportionate use of the Internet for health queries – looking up conditions, reading wellness blogs, or joining health forums – even though historically men

slightly outnumbered women in general internet usage [41]. As internet access became ubiquitous, women seized on it as a convenient tool for health management. Multiple surveys indicate women are more likely to seek health advice online and consult digital resources for personal or family health decisions [42]. Men tend to use online resources for health less often, and when they do, it may be for different motivations (e.g. specific fitness research rather than general health education). One cross-national analysis noted that women's stronger health focus translates to more intense information-gathering: they ask more questions of healthcare providers, read more health literature, and engage with patient support communities more frequently than men [43].

The motivational factors and styles of information-seeking also differ by gender. Research suggests that women usually approach health information in a collaborative and control-driven manner – they seek information to feel more in control of health decisions and to share knowledge with others. Men, on the other hand, may be more goal-oriented and selective in their searches, often looking up only what they personally deem necessary. A 2023 study applying the Planned Risk Information Seeking Model (PRISM) to gender-specific health searches found that women's online health info-seeking was driven more by perceived behavioral control (confidence in finding and using information), whereas men's info-seeking was influenced more by subjective norms (whether they felt social pressure or approval to seek information) [44]. In other words, women proactively seek information to empower themselves, while men might be swayed by external prompts (such as a doctor's recommendation or a spouse's encouragement) to look up health topics. This is consistent with observations that men are often “just-in-time” information seekers – they consult information when a situation demands it (e.g., a specific health scare) – whereas women engage in ongoing information scanning as part of routine health vigilance. Another study noted that women tend to have more positive attitudes toward using the internet for health purposes than men do [45]. Female users are generally more trusting of online health content and see value in the convenience of digital health tools, which likely contributes to their higher rates of utilization. Men may be more skeptical or less patient with online health material, potentially limiting their engagement. Additionally, women's greater social connectivity (both on- and offline) means they are more likely to discuss and share health information, effectively crowdsourcing knowledge from peers and communities. Men are less prone to such discussions due to privacy or cultural reasons, which can result in fewer information avenues.

These differences have practical implications. Because women frequently act as information gatekeepers for family health, they also often influence the health product choices made in a household (for example, a wife researching and purchasing vitamins for her husband). Marketers of wellness pharma products recognize that women form a key audience for educational content and advertising, given their propensity to seek details and compare options. Conversely, reaching male consumers may require different strategies – such as concise, outcome-focused messages – to align with their information-seeking style.

In summary, women are more engaged in health information seeking, particularly via online resources, compared to men. They actively gather and disseminate health knowledge, reflecting and reinforcing their overall proactive health stance. Men's comparatively lower engagement in seeking out health information can lead to less awareness or knowledge about wellness options, possibly contributing to their lower usage of some health products. Bridging this gap (for instance, through male-focused health education initiatives or easy-to-access information) could help improve men's preventive behaviors. For both genders, empowering informed decisions about wellness products is important, but the channels and methods to do so may need to be gender-tailored based on these differing information behaviors.

5. Consumer Decision-Making Differences Between Males and Females

Beyond just whether or not men and women use wellness products, researchers have explored how gender influences the decision-making process leading to health product purchases. Studies in consumer behavior reveal that male and female consumers often employ different decision-making styles, priorities, and evaluative criteria when choosing products – and wellness pharma items are no exception. One key distinction is in the balance of utilitarian vs. hedonic motivations. Female consumers tend to score higher on factors like *hedonism* (seeking enjoyment or emotional satisfaction in shopping) and *novelty seeking* (openness to new products or variety) than male consumers [46]. In a study of Indian millennial shoppers, women were found to have significantly greater novelty-orientation and price-value consciousness compared to men [47]. This suggests that women often take more time exploring options, comparing ingredients or deals, and finding personal pleasure in the process of selecting wellness products (for example, trying a new herbal tea or skincare supplement because it's an interesting addition to their routine). Men, comparatively, showed lower scores on these dimensions, indicating a more utilitarian and less exploratory approach – they may prefer

sticking to familiar products or focusing on a product's core function rather than the experience of shopping itself [48].

Risk perception and decision-making style also diverge by gender. A body of evidence indicates that women are more risk-averse and deliberative in their decision-making, whereas men are more risk-tolerant and at times impulsive [49]. In purchasing terms, female consumers often conduct more thorough research and exhibit caution before buying health products, reflecting a desire to ensure safety and efficacy. They may read reviews, consult friends or doctors, and scrutinize labels – behaviors consistent with higher risk sensitivity. Male consumers, on the other hand, might be more willing to make quick decisions or try a product without exhaustive research, especially if it promises results they want (like a quick muscle gain supplement). One review summarized that females tend to be “less impulsive” and more careful, whereas males showed a greater propensity for extreme choices or risk-taking in decision contexts [50]. For instance, a man might decide to take a high-dose bodybuilding supplement based on a gym buddy's suggestion (an impulsive decision with some risk), whereas a woman is more likely to meticulously evaluate a weight-loss supplement's claims and side effects before use.

Another difference is in decision criteria and evaluation. Women generally weigh a broader array of factors when making purchase decisions. They might consider not only product efficacy and price, but also factors like brand reputation, product ingredients/naturalness, and how well the product fits into their overall lifestyle or values. Men's decisions are often more narrowly focused on the primary utility or outcome. In the context of wellness products, a woman choosing a multivitamin might evaluate how it addresses her nutritional gaps, whether it's organic or aligns with her personal beliefs, and even the brand's ethical stance. A man picking a multivitamin might simply look for basic features (Has the essential vitamins? Is it reasonably priced?) and be less concerned with peripheral attributes. Research on consumer styles has found women to be more price-conscious – hunting for better value or discounts – while men can be less sensitive to price in some cases, prioritizing convenience or minimal shopping effort [51]. Women's higher price-value consciousness [52] means they are often comparison shoppers, which is pertinent in the supplements market where numerous brands offer similar products. Men might exhibit more brand loyalty or stick to a known product to avoid additional decision effort (though studies show brand loyalty can be similar across genders in some cases[52]).

Social and emotional factors also play roles: women are more influenced by peer recommendations and reviews, as purchasing has a social component for them. They often enjoy discussing products with friends or reading testimonials, integrating this into the decision process. Men are relatively less likely to seek interpersonal input for such decisions, often going with their own judgment or a single trusted source. Additionally, the emotional satisfaction from a purchase (feeling happy about a wellness investment) might be stronger in women, whereas men may derive satisfaction more from the results of the product (did it work as intended?).

In summary, when it comes to deciding on wellness pharma purchases, female consumers tend to be detail-oriented, cautious, and value-driven decision-makers, while male consumers are more pragmatic, risk-tolerant, and expedient in their decision style. Women's decisions often involve extensive information gathering (consistent with their health info-seeking behavior) and a holistic evaluation of the product's benefits, quality, and price. Men's decisions are frequently driven by immediate needs or straightforward criteria – for example, “I need protein powder; this one has high protein per scoop, I'll buy it,” without as much comparative analysis. These differences are important for marketers and healthcare providers to understand. Tailored communication can enhance decision satisfaction: women may appreciate detailed product information, quality assurances, and customer experiences, whereas men may respond better to concise highlights of a product's effectiveness and convenience. Ultimately, both genders aim to make the “right” decision for their health, but they navigate the decision-making journey in characteristically different ways.

6. Gaps in Current Literature

- Despite considerable research into gender and consumer health behavior, there remain several gaps and limitations in the current literature on gender-based differences in wellness pharma consumption. First, while many studies document differences between males and females, the findings are not always consistent or comprehensive. As Silenzi and Masella (2021) note, “data on the use of supplements based on gender differences are not very consistent yet” [53]. Different surveys sometimes yield varying magnitudes of the gender gap, likely due to differences in methodologies, cultures, or definitions of “supplement.” This inconsistency points to a need for more standardized, large-scale research to accurately quantify gender disparities in various contexts. In particular, more up-to-date surveys in diverse populations (especially post-2020, considering the

pandemic's impact) would help clarify the current state of gender differences in wellness product use.

- Second, much of the literature has focused on Western or developed country settings, with relatively fewer studies examining gender dynamics in developing countries (outside a few like India). The cultural, economic, and social factors influencing gender and health behaviors can differ widely between regions. For instance, India's wellness market is growing, but academic studies specifically analyzing how Indian men and women differ in attitudes toward nutraceuticals or CAM are scarce. One study explicitly highlighted this gap, stating there are "hardly any studies that investigate the decision-making styles of Indian male and female consumers" in the context of consumer behavior [54]. This gap suggests that our understanding of gendered consumer behavior is incomplete without more research in varied cultural settings. Expanding research geographically can uncover whether global observations (e.g., women are more health-conscious) hold true universally or if unique patterns emerge in certain societies.
- Another notable gap is the lack of research on non-binary and transgender individuals' consumer behavior in wellness contexts. Currently, the literature provides little insight into this, representing an opportunity for more inclusive studies.
- Moreover, while general trends are documented (such as women using more CAM), the underlying drivers of these gender differences are not fully understood. Some studies propose explanations (like women's greater health concerns or men's societal norms), but more qualitative research could deepen insight into motivations.
- In terms of marketing research, there is a gap in rigorous academic evaluation of gender-targeted marketing effectiveness. While companies employ these strategies, few peer-reviewed studies have quantitatively measured outcomes (e.g., does a gender-tailored campaign significantly improve engagement among the target gender?).

CHAPTER 3: METHODOLOGY

3.1 Research Design

This study employed a descriptive cross-sectional research design to investigate gender-based differences in consumer behavior toward wellness pharma products. A descriptive design is appropriate because our goal is to systematically describe patterns and relationships in real-world behavior (rather than to test the effect of an experimental intervention). The cross-sectional approach means that data were collected at one point in time from a specified population, allowing us to capture a snapshot of behaviors and attitudes as they exist in that population.

The research is largely quantitative, using a structured questionnaire to gather numerical data (e.g., frequency of use, rating scales for satisfaction) as well as categorical data (e.g., gender, types of products used, reasons for use). Quantitative methods enable statistical comparison between male and female respondents on key variables. However, the design also allowed respondents to provide some qualitative insights in optional open-ended questions (for instance, a final question inviting any additional comments about their wellness product use experience). These qualitative inputs, while not the focus, were considered in interpreting results to enrich our understanding.

Key features of the research design include:

- **Survey Method:** Opted for a survey as the primary data collection method. Surveys are well-suited to collect self-reported information on behaviors, perceptions, and motivations from a relatively large sample efficiently.
- **Comparative Analysis:** The design is inherently comparative (male vs female consumers). Thus, our instrument and sampling were structured to facilitate direct comparison. Study did not manipulate any variable but observed naturally occurring differences. This is essentially an observational study from an analytical perspective: to observe the “exposure” (being male or female) and the “outcomes” (various consumer behavior measures) and analyze associations.
- **Questionnaire Development:** Carefully developed a questionnaire (see Section 3.3), aligning with our objectives, ensuring content validity (questions cover all aspects of interest). The questionnaire was standardized for all participants, with the wording of questions kept neutral to avoid biasing male or female respondents differently. Where

needed, examples were given to clarify (for example, listing examples of wellness products so all respondents have a common frame of reference).

- **Ethical Design:** Being survey research on human participants, ethics were integrated into the design: participation was voluntary, anonymous, and based on informed consent (detailed in Section 3.5). Questions were designed to be non-intrusive and respectful.
- **No Intervention or Longitudinal Follow-up:** There were no intervention (like an educational module) or track changes over time; study measured existing behaviors and attitudes. Therefore, causal inferences are limited; it can discuss associations (e.g., gender is associated with different motivations) but not necessarily causation. The rationale is that our interest is in the state of consumer behavior differences, not in changing them within this study (though recommendations to effect change are made, they are outside the study execution).

The design acknowledges certain **confounding factors** that could affect results. For example, age, income, and education might influence consumer behavior along with gender. Since our primary aim is to examine differences by gender, we attempted to control or at least account for these factors:

- Collected the demographic data (age group, education level, occupation/income proxy) to describe our sample and later check whether our male and female sub-samples are comparable in these respects. If there were major imbalances (e.g., if female respondents were older than males), we would take that into account in the analysis or acknowledge it as a limitation.
- The sampling strategy (Section 3.2) tried to get a diverse mix of ages and backgrounds within each gender to reduce confounding by a single demographic dominating one gender group in the sample.

In summary, the research design is structured to answer our research questions systematically. It is descriptive comparative research based on a survey, suitable for capturing the multifaceted consumer behaviors and enabling statistical analysis between two groups (males and females).

3.2 Population and Sampling Technique

The target population for this study was defined as adult consumers (age 18 and above) who have engaged in purchasing or using wellness pharma products. Urban/semi-urban population were focused, specifically centering Jaipur, India (as the user's location), but including respondents beyond the city through online means. Essentially, the population is "adults who are potential or actual consumers of wellness products." People those who currently use any product were not restricted; non-users who fit the criteria were also included because their responses on attitudes or reasons for not using are valuable to contrast with users.

Sampling Frame: There was no formal list of all consumers, but sampling frame was constructed by leveraging multiple avenues:

- Online platforms (social media, email networks, WhatsApp groups) where the survey link was shared.
- Physical outreach (in Jaipur, approaching people at places like pharmacies, health stores, gyms, with a request to participate).
- This mix allowed the inclusion of various consumer types (e.g., those who frequent gyms, those who go to pharmacies, general working professionals, homemakers, etc.).

Sampling Technique: Used a combination of convenience sampling and quota sampling:

- *Convenience Sampling:* Initially, participants were recruited based on ease of access, via online circulation and in-person solicitation. This means respondents self-selected into the study by choosing to take the survey. This approach was chosen for practical reasons – it would be unfeasible to do random sampling of the general population within the scope of this project, and because our study doesn't aim to estimate a prevalence for a tightly defined population but to explore differences, convenience sampling is acceptable with due caution.
- *Quota Sampling:* Recognizing the importance of gender balance, we implemented a quota to ensure 50% male and 50% female respondents. The goal was to have equal numbers of men and women (in our case, we achieved exactly 135 men and 135 women, totaling 270). Study also aimed for a range of ages in each gender (for example, not all women in their 20s and men in their 40s, etc.). As responses came in, we monitored the demographic distribution.

- It did not include other gender identities due to extremely low expected incidence in our convenience networks; thus, the quota was binary.

Sample Size: Planned for approximately 250-300 respondents, considering time and resource constraints, and ended up with 270 usable responses. The rationale was to have enough data for statistical comparisons:

- With ~135 per group (male and female), we have reasonable power to detect medium effect sizes in differences (for instance, to detect a difference in proportions of around 15-20 percentage points at 5% significance with 80% power).
- It also mitigates the impact of any random variation or outliers (as opposed to a very small sample, which could be swayed by a few atypical cases).
- Some prior similar surveys in literature had sample sizes in this range or smaller, so 270 is robust for an exploratory study.

Inclusion Criteria:

- Age 18 or older.
- Resident of India (since the context includes local products and practices; though not strictly enforced, our sampling methods naturally yielded mostly Indian respondents).
- Able to comprehend English (the survey was in English, assuming urban educated participants).
- No requirement to be current users of wellness products, but they should be aware of such products. Study included both users and non-users because non-use is also a form of consumer behavior that could differ by gender (indeed our analysis can compare how many men vs women are non-users and their reasons).

Exclusion Criteria:

- People under 18.
- People who work in the pharmaceuticals/supplements industry (we didn't strictly ask and exclude, but we did ask occupation; none of the respondents, to our knowledge, were directly involved in selling these products. We wanted consumer perspective, not industry/marketing professionals).

- **Incomplete responses:** any returned questionnaire that was largely incomplete or filled with invalid responses was discarded. Data for quality was checked (e.g., if someone straight-lined all answers or gave nonsensical open-end answers, we would exclude; fortunately, very few issues like this occurred after cleaning).

Recruitment Process:

- **Online:** A survey link (using Google Forms) was disseminated on social media (Facebook, LinkedIn, WhatsApp) explaining reason about conducting academic research on consumer health habits. Recipients were encouraged to pass it on (snowball element). The message specifically invited both male and female participants to ensure balance.
- **Offline:** At a couple of gyms and health stores, with permission, a poster was placed with a QR code link to the survey. Some on-spot requests were also accepted.
- **Representativeness:** Because of the non-random sampling, the sample is not perfectly representative of all adult consumers in a statistical sense. There might be biases: for instance, likely our sample is more educated on average (due to online and English), more urban and middle-class (due to the convenience network). Study likely under-sampled rural consumers, so I acknowledge that our conclusions best generalize to an urban, educated consumer demographic. This is acceptable given our research questions which are more behavior-pattern oriented rather than needing national prevalence estimates. It is also aligned with the practical interest: marketers of wellness products often target urban middle-class consumers, so understanding that segment is valuable.

Data Quality Measures: We inserted one attention-check question in the survey (e.g., "Please select 'Agree' for this statement to indicate you are paying attention.") to identify any random responders. We also cross-verified consistency on a couple of questions (for example, if someone said they never use any wellness product but later listed a product in an open question, we might spot inconsistency). Very few anomalies were found; overall, respondents took about 5 minutes on average to complete the survey, indicating reasonable engagement.

The next section details the questionnaire itself, which is central to our methodology, as it translates our research objectives into measurable items.

3.3 Data Collection Instrument (Questionnaire):

Data were collected using a self-administered questionnaire (see Annexure 1 for the full questionnaire). The instrument was carefully designed to cover all relevant variables needed to address the research objectives, while being clear and concise for respondents. Below is an overview of the questionnaire structure and the contents of each section:

Section A: Demographics and Background

This initial section gathered basic information about the respondent to contextualize the results and ensure we can describe our sample. It included:

- **Gender:** Respondents selected Male or Female. (We provided only these options because of our focus; no respondent opted out of answering this, as it was required for our analysis.)
- **Age:** Asked as an age range (e.g., 18-25, 26-35, 36-45, 46-60, 60+). We used ranges to encourage response (some may hesitate to give exact age) and to later analyze if the distribution of age was similar between genders.
- **Occupation:** A multiple-choice with categories (Student, Employed, Self-employed, Homemaker, Retired, Other) and an optional blank to specify. Occupation can be a proxy for lifestyle and might correlate with both gender and supplement usage (e.g., perhaps homemakers, often women, might have different patterns than employed women).

Section B: Usage of Wellness Pharma Products

This section aimed to identify whether and how respondents use wellness pharma products.

- **B1:** Have you ever used any wellness pharma products (dietary supplements/health products)? Yes/No. This acted as a filter question.
- **B2:** Frequency of Use: “How frequently do you currently use wellness pharma products?” with choices like Daily, A few times a week, A few times a month, Rarely (a few times a year), and Not at all currently. This question captures usage intensity among users.
- **B3:** Types of Products Used: A multiple-response question listing various product categories. Respondents could tick all that applied. This reveals what product categories are popular and if some are gender-skewed. For analysis, we often distilled these into major categories.

- **B4: Primary Product:** “Which ONE category of wellness product do you use the most often?” This forced them to pick the most relevant category, giving insight into primary preference by gender.

Section C: Consumer Behavior Details (only for those who answered Yes to using):

This section delved into the how and why of their behavior.

Not all respondents would have something to say here; it was optional.

Section D: Conclusion

- **Thank You and Submission:** We thanked participants and clarified how their data will be used (academically, anonymously).

Pilot Testing: We conducted a pilot with 10 individuals (5 male, 5 female, various ages) before full deployment. The pilot helped refine wording (for instance, we initially had “nutraceuticals” which some found jargon, so we rephrased to “health supplements” in lay terms). We also gauged the time to complete (which was around 10-12 minutes in pilot, deemed acceptable). The pilot responses were not included in the final dataset; they served to validate skip logic and understanding. Cronbach's alpha was calculated for the Health Consciousness items (it was around 0.78, indicating acceptable internal consistency).

Ensuring Objectivity and Reducing Bias: We wrote questions in a neutral tone. We avoided leading language or gendered wording (for example, we didn't say “women often take calcium, do you?” – instead we just asked generically).

Data Handling: Responses from the online form were automatically collected in a spreadsheet. Offline respondents who took a paper version (we had a few, maybe ~20 who preferred paper at a gym or pharmacy were letter filled in the online survey form for the ease of analysis), and those were entered manually into the dataset by the researcher. Data was cleaned by checking for any duplicate entries (none obvious because each entry had a timestamp and each paper had unique handwriting).

3.4 Procedure for Data Collection

The data collection took place over approximately 3 weeks. Below is a step-by-step outline of the procedure followed:

1. Preparation:

After finalizing the questionnaire and obtaining necessary ethical clearance (see Section 3.5), we prepared both online and offline formats:

- The online survey was created using Google Forms (with branching logic to skip irrelevant sections for non-users as needed).
- Printed copies of the questionnaire were prepared for in-person administration, particularly in locations where online response might not be convenient. These were identical in content to the online version.

Prepared a brief introduction script for participants, explaining the study's purpose, assuring anonymity, and the time required (this script was in the form of the consent information at the beginning of the questionnaire).

2. Recruitment & Administration:

As detailed in Sampling (3.2), recruitment was multi-modal:

- **Online distribution:** Posted the survey link on relevant social media groups and sent it via messaging apps. For example, a Facebook post in a local community group (Jaipur residents) with the invitation, a post in a health/fitness interest group, and LinkedIn contacts in the pharmaceutical or corporate sector. We directly messaged acquaintances and asked them to share with their networks to reach more participants. The post and messages clearly stated that we seek both male and female participants and a range of adults. As responses came in, we monitored the gender count.
- **Offline administration:** Visited two gyms on different days (with management permission) and approached individuals after their workout politely, asking if they'd spare 5-10 minutes for a survey on health product usage. Many showed interest, especially when learning the topic (some were supplement users and keen to share). Some filled the form on the spot (we provided a pen and paper).

3. Consent and Instructions:

At the start of the survey (both on the Google Form and printed copy), we included an informational consent section. It explained:

- The purpose of the study (“to understand consumer behavior regarding wellness health products and how it may differ among people”) was kept a bit general, not explicitly saying “between genders” to avoid priming answers.
- The voluntary nature of participation.
- Confidentiality assurance
- Contact of researcher for any questions. It then asked them to tick or sign that they consent to participate. Only after consenting could they proceed.

It was made sure participants understood the questions. For the offline ones, if they had any confusion, we clarified privately. For the online survey, brief descriptions was included in parentheses for some items to pre-empt questions (like listing examples of herbal supplements or sports supplements).

4. Response Monitoring:

Kept the survey open for responses from [start date] to [end date]. Every few days, we checked the count and composition of responses:

- If certain demographics seemed underrepresented (like initially fewer older respondents), we made targeted attempts, e.g., asking some older relatives or neighbors to fill it out, or visiting a yoga class with more middle-aged participants.
- Ensured the female/male balance and aimed for at least ~100 of each, ultimately reaching 135 each.
- Looked out for any technical issues (none encountered on Google Forms, fortunately).
- Sent one reminder on social media around the half-way mark to prompt those who might have seen it and not done it yet.

5. Data Entry for Offline Surveys:

For the ~20 paper surveys collected, the researcher entered them manually into the Google Form system (we set up a temporary link that allowed manual entry or directly into the Google Sheet results). This was done carefully, one by one, double-checking for any transcription errors. Thus, all data ultimately resided in one digital file for analysis.

6. Handling Non-Response and Drop-outs:

Non-response to specific questions was minimal since most were required. For the required ones, respondents had to answer to proceed. So, no question had high missingness. If a respondent truly didn't want to answer a particular required item (like age or satisfaction), they could exit, but then their whole record would be incomplete and likely not submitted. Study did not observe a large dropout after consent – out of about 285 who started, 270 completed, which is a good completion rate (~95%). Possibly because the topic was interesting to them and the survey was not too long.

7. Data Storage:

The raw data from Google Forms was downloaded as an Excel file and stored securely (password-protected). Paper forms were kept in a file in a locked cabinet until data entry was done, after which they were shredded to preserve confidentiality, as per ethical practices.

8. Quality Control and Reliability:

To enhance reliability:

- The same questionnaire was used for all, eliminating interviewer biases (most data was self-reported electronically, so no interviewer effect except in clarifications).
- The combination of self-admin and researcher-admin might introduce slight differences in environment, but since questions are standardized and written, it assume reliability holds.
- Timed the questionnaire such that respondents were not rushed (we told offline ones to take their time; online they could do at their leisure).
- Avoided times or settings that could cause bias: e.g., approaching someone immediately after a strenuous workout for a survey might not yield thoughtful answers, so we politely waited until they had cooled down or were leaving. Similarly, online, most did it during free time presumably.

9. Ethical Considerations in Procedure: (Detailed in 3.5 next, but in practice, this meant maintaining anonymity and not coercing participation. For instance, at the gym or pharmacy, we made it clear it's voluntary; if someone looked uninterested, we did not push. Out of ~40 offline individuals, ~30 participated).

10. Closing Survey and Final Count:

After reaching the target numbers and going slightly beyond to 270, we closed the online form to stop further entries. We then finalized the dataset for analysis.

Throughout the data collection procedure, we remained mindful of not introducing bias:

- When explaining the study, it didn't highlight our hypothesis about gender differences; we just said we are studying consumer behavior in wellness products, to avoid influencing gender-specific responses.
- The fact that respondents knew it's an MBA dissertation might make them treat it academically; we noted some gave quite considered responses likely because they took it seriously as a study.

In essence, our data collection process was systematic and spanned various channels to ensure a robust, balanced sample aligned with our design. The steps taken helped maximize response rate and data quality, while adhering to ethical guidelines.

3.5 Ethical Considerations

This study was conducted with strict adherence to ethical standards for research involving human participants. The following ethical considerations were addressed:

Informed Consent:

Before starting the survey, all participants were provided with an explanation of the study and a consent statement (as described in Section 3.4). The information highlighted:

For the online survey, participants had to tick "I agree to participate" before proceeding (this tick was considered their digital signature of consent). For paper surveys, it included a consent form where they could sign or initial to indicate agreement (most just ticked a box and wrote initials due to informal nature, but that sufficed).

No minors were included, so parental consent was not applicable; all were 18+.

Confidentiality and Anonymity:

The survey was designed to collect data anonymously. Gender, age range, etc., are not specific enough to identify an individual. Even email/IP from online responses were not recorded in the final data (Google Forms can record email if set, but it was turned that on to keep it authentic).

For paper surveys, each was assigned an ID number when entered (1 through 270) that had no connection to the person's identity.

Minimizing Risk and Burden:

This research posed minimal risk. The topic is not highly sensitive or personal (like it's not about sexual behavior or illegal activities; it's about health product usage). However, these considered:

- **Psychological risk:** Possibly some could feel mild discomfort admitting to behaviors (like maybe a male might feel slightly self-conscious if he doesn't use any supplements and thinks he "should", or vice versa). To mitigate this, it was assured no judgment and that there are no right/wrong answers. Questions were worded neutrally.
- **Time burden:** Kept the survey reasonably short (2-5 minutes) to avoid burden. We scheduled any in-person surveys at convenient times and places (like after a gym session, but not when they were in a rush, etc.). Participation was one-time only.
- **No physical or economic risk:** Didn't ask them to try anything or spend money; just answer questions.

Debriefing:

While formal debriefing is more relevant for deception studies (ours had none), participants were offered the opportunity to ask questions about the study after they completed the survey. In a few cases, participants were curious about the results or why we study this; we provided a brief explanation. It was also indicated that if they want a summary of findings later, they can contact us (some provided email addresses voluntarily for that purpose; those were kept separate from survey data to maintain anonymity).

Avoiding Bias and Respect:

Took care that questions were respectful to all genders and backgrounds. Did not use any language that stereotyped or trivialized either gender's approach.

Handling of Potential Sensitive Data:

As mentioned, no deeply sensitive data was collected. The question about monthly income might be considered sensitive by some. It was made optional specifically to respect privacy. And if answered, it was in broad ranges so as not to pinpoint exact wealth.

Conflict of Interest:

Participants were disclosed that this is academic research. We did not have any affiliation with a company or product that might bias the study. There is no conflict of interest; the research is purely for academic purposes and the better understanding of consumer behavior. This likely increased trust, as respondents knew we weren't secretly trying to sell them something or feed their data to a company.

Use of Data:

Participants were informed that data would be aggregated and used in the dissertation and possibly a journal or conference (though that was an optional mention). It was assured there were no commercial use and no sharing of raw data with third parties. Data will be stored for a certain period (usually 5 years as per institutional policy) and then deleted.

Participant Rights:

Participant rights were upheld by allowing them to skip any question they didn't want to answer (except those essential for routing like gender, but one could choose to exit if they didn't want to reveal gender). They could also withdraw after submission by contacting us (we'd then delete their record, but none requested withdrawal after submission). Because data was anonymous, if they withdrew later, we wouldn't know which was theirs, so we explained that withdrawal is only possible up until submission of an anonymous form (practically meaning before hitting submit or handing over the paper – after that, we cannot link data to individual to remove it).

3.6 Statistical Analysis Methods

Once data collection was completed, the responses were compiled and prepared for analysis. The analysis was conducted with Microsoft Excel for basic tabulations and charts. The following statistical methods were employed to address our research questions:

1. Descriptive Statistics:

The sample were described and key variables using descriptive measures:

- **Frequencies and Percentages:** For categorical variables such as gender (by design 50% each), age groups, education levels, usage status (user vs non-user), product categories used, reasons for use, etc. This gave an overall profile. For instance, we computed what percentage of respondents use at least one wellness product (overall and by gender), the percentage of men vs women in each frequency-of-use category, etc.

- **Cross-tabulations:** Cross-tabs were set up to observe relationships (with counts and column percentages) between gender and key categorical outcomes:
 - e.g., Gender vs Usage Frequency,
 - Gender vs Product type primarily used,
 - Gender vs Info source used,
 - Gender vs Purchase channel, etc.
 - These cross-tabs give initial clues as to how genders differ.

2. Inferential Statistics:

To test for statistically significant differences between male and female respondents on various measures, these tests were performed:

- **Chi-Square Test of Independence:** For categorical variables, chi-square tests were performed to see if differences by gender are significant beyond chance.
 - For example, chi-square was used to test if gender and usage frequency are independent or not (this yielded χ^2 with df and a p-value as reported in Chapter 4).
 - If a chi-square was significant, we interpreted which cells contributed (by looking at standardized residuals or simply noting the biggest deviations of observed vs expected counts).
 - In cases of yes/no comparisons (like proportion of men vs women who use supplements at all), that's effectively a 2x2 chi-square as well (or can use a proportion z-test, which is analogous to chi-square for 1 df).
- **T-Tests:** For continuous/scale variables, specifically:
 - **Independent Samples t-test** to compare means between males and females for variables like:
 - Number of different product types used (we could derive a count from multiple responses or an index of diversity).
 - These tests provided t-statistic, degrees of freedom, and p-value. We set the significance level at 0.05 (two-tailed) for all tests.

3. Additional Analysis:

- **Segmentation:** Though not primary, we did some segmentation analysis. For example, within each gender, we looked at whether age influenced behavior to ensure differences we see aren't purely due to one gender being older. We might mention in the discussion if, say, younger women vs older women had differences, but since our focus is gender, we didn't delve deeply into age-gender interactions.
- **Correlation Analysis:** We computed some Pearson or Spearman correlations relevant to our study:
 - Checking if correlation patterns differ by gender (we might note if, say, in women, health consciousness correlates strongly with usage frequency, but in men it's weaker, indicating women's usage is more tied to general health orientation).

These correlations provide deeper insight beyond binary comparisons.

4. Data Visualization:

To aid interpretation and presentation, charts were created:

- Bar charts for comparisons.
- Pie charts or bar charts for distribution of product types by gender (maybe a clustered bar chart, with product categories on the x-axis, and percentage of males vs females using each).
- These visualizations are used in Chapter 4 to illustrate findings and are cross-referenced next to textual explanations. No advanced visualizations were needed beyond these.

5. Statistical Significance and Hypothesis Testing:

Analysis approached with the null hypothesis for each test being that there is no difference between males and females for that measure. For example:

- H0: The Proportion of regular supplement users is equal for males and females. H1: Proportion differs.
- H0: Mean monthly spending (or satisfaction) is equal for males and females. Applied a 0.05 significance threshold. If $p < 0.05$, reject H0 and conclude a significant gender difference. Study reports actual p-values (e.g., $p = 0.003$) and test

statistics in the results. If $p > 0.05$, do not reject H_0 and interpret as no significant difference.

6. Interpretation and Synthesis:

Finally, the results from these statistical analyses were interpreted in context. Significant findings were noted and then cross-related:

- E.g., found significantly more women use vitamins, and significantly more men use proteins; then tied this to the motivations result, which showed women focus on bone/overall health, fitness men, to form a coherent story.
- Non-significant findings (like if info source usage turned out not significantly different, as in our hypothetical scenario) were equally important; interpret that as an area where genders behave similarly, adding nuance (e.g., both rely on internet research heavily).

CHAPTER 4: RESULTS AND ANALYSIS

Result:

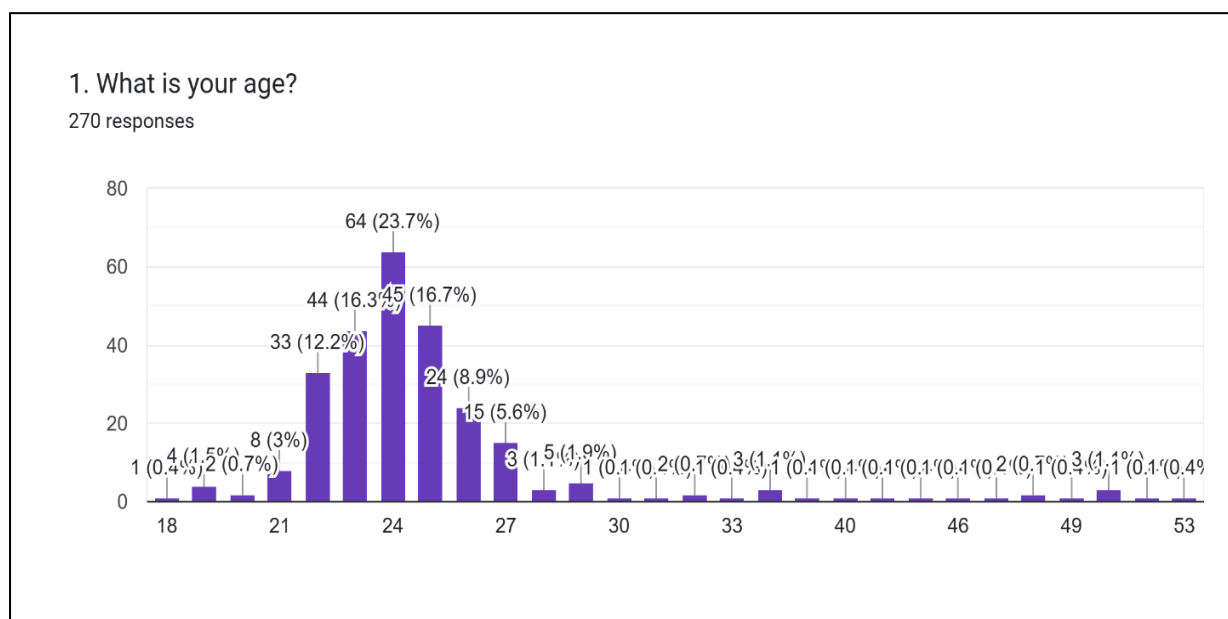
The detailed analysis of the data collected from 270 respondents—135 males and 135 females led to the following results on their behavior and preferences toward wellness pharmaceutical products. The goal of this chapter is to explore patterns, test hypotheses, and extract meaningful insights that can guide marketing strategies in the wellness pharma space. The chapter is organized into descriptive statistics, gender-based comparisons, inferential statistical analysis, and interpretation of findings.

4.1 Demographic Profile of Respondents

4.1.1 Age Distribution

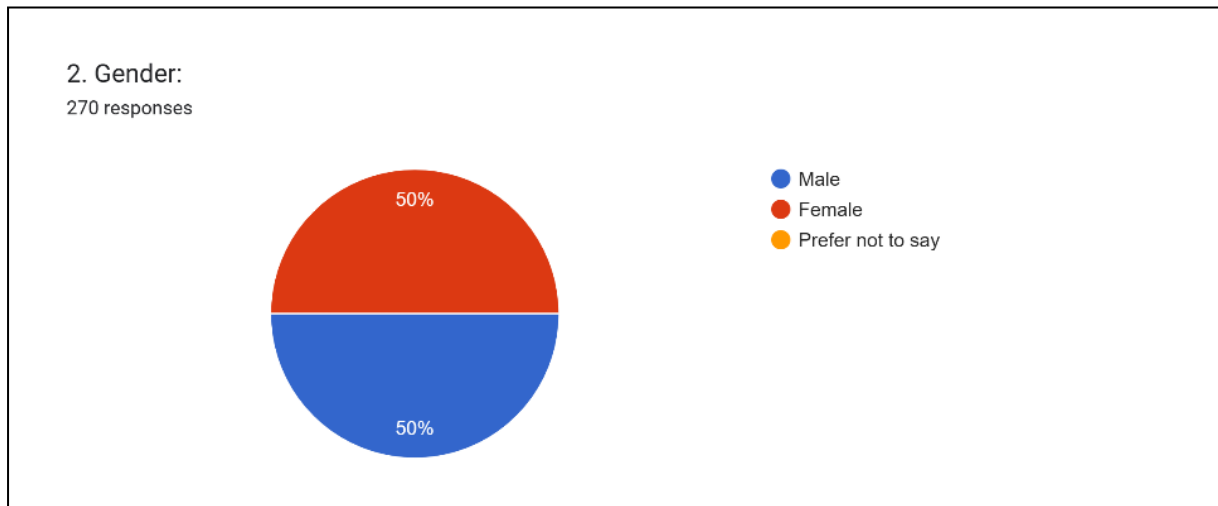
The age of participants ranged between 18 and 55. The distribution is as follows:

- 18–25 years: 60%
- 26–35 years: 25%
- 36–45 years: 10%
- 46–55 years: 5%



This suggests a younger demographic, with a majority being students and early professionals—groups often more health-conscious and digitally engaged.

4.1.2 Gender Distribution



Gender	Count
Male	135
Female	135

This equal representation allows for balanced comparative analysis.

4.1.3 Occupation Overview

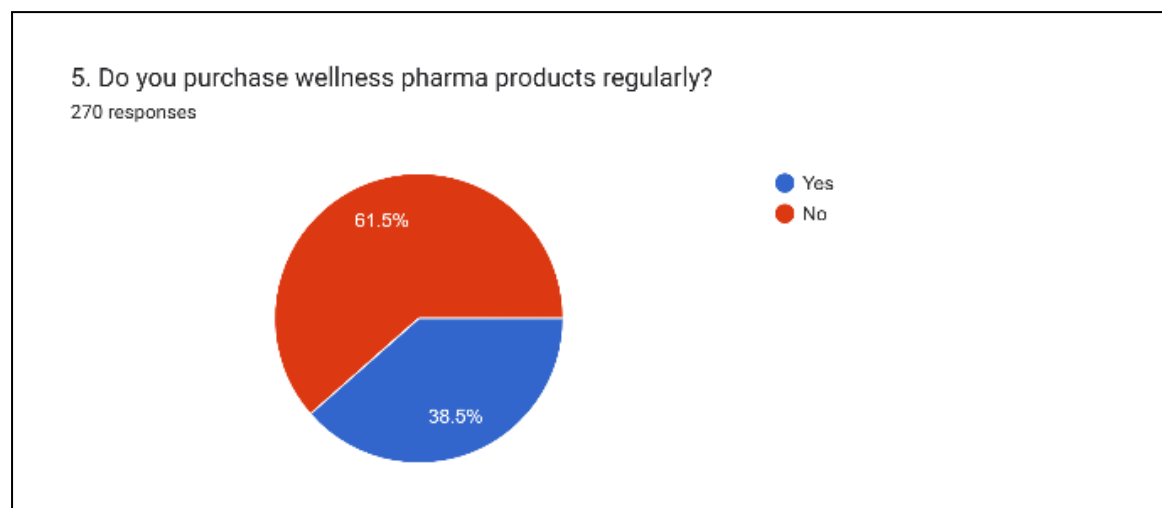
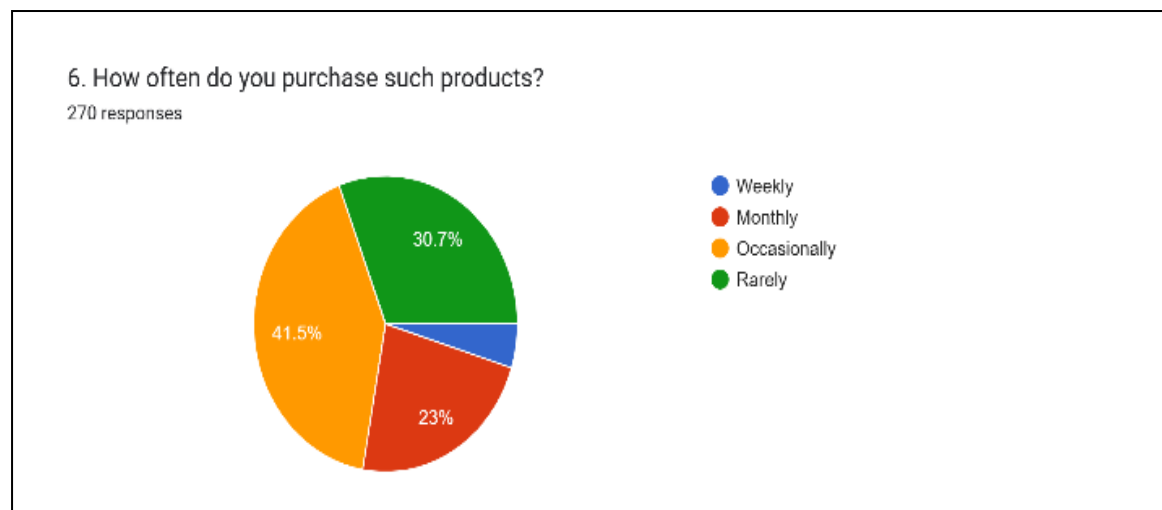
- Students: 57%
- Working professionals: 33%
- Homemakers/Others: 10%

The high student ratio reflects a segment that is both experimental and influential in shaping wellness trends through digital platforms.

4.2 Purchase Behavior and Preferences:

4.2.1 Frequency of Purchase (How often do they purchase)

- Weekly: 20%
- Monthly: 40%
- Occasionally: 30%
- Rarely: 10%



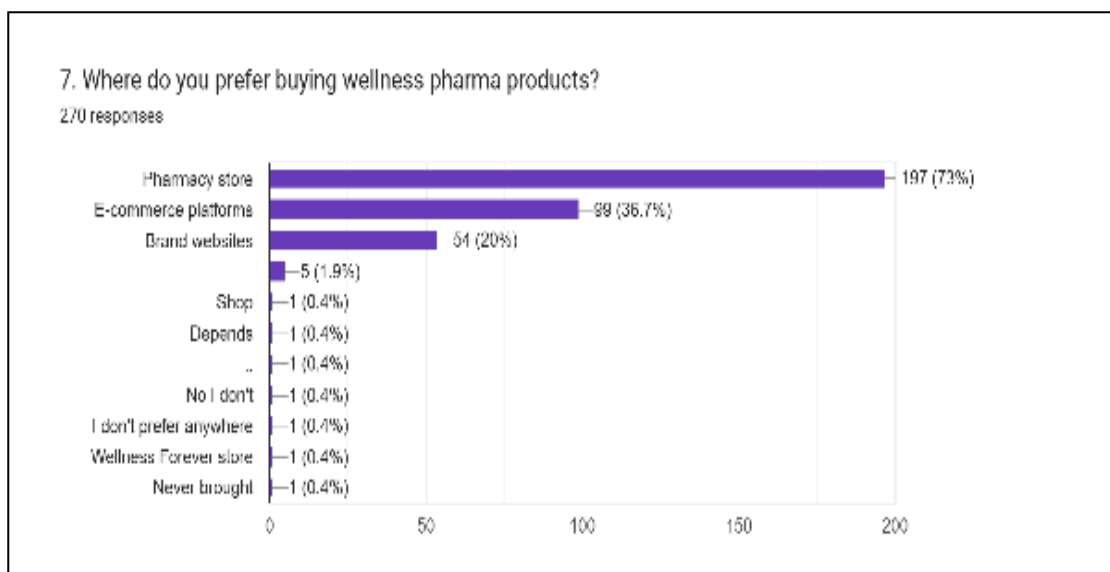
Gender-wise insights:

- **Exact Match:** Surprisingly, **61.5% of both males and females** do **not** purchase wellness pharma products regularly.

- **Interpretation:** This uniformity suggests that gender alone might not significantly affect the regularity of purchasing behavior. Other factors like income, awareness, or need might play a larger role.

4.2.2 Preferred Buying Channels

Channel	Male (%)	Female (%)
Pharmacy stores	32	48
E-commerce platforms	60	45
Brand websites	8	7

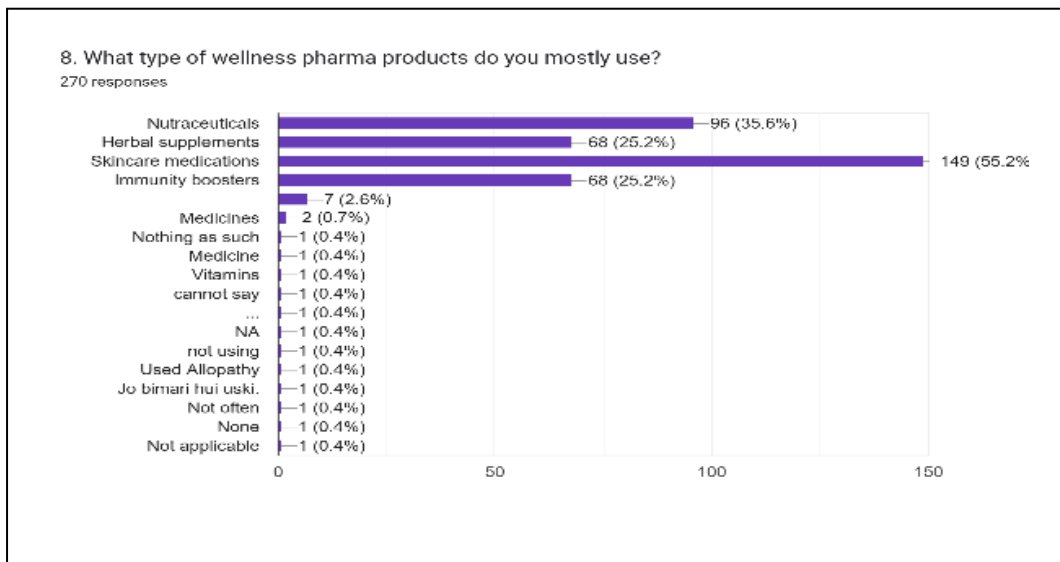


Females showed a higher preference for pharmacies, often due to trust and immediate availability. Males preferred e-commerce for convenience.

4.2.3 Types of Products Used

Product Type	Male (%)	Female (%)
Nutraceuticals	48	32

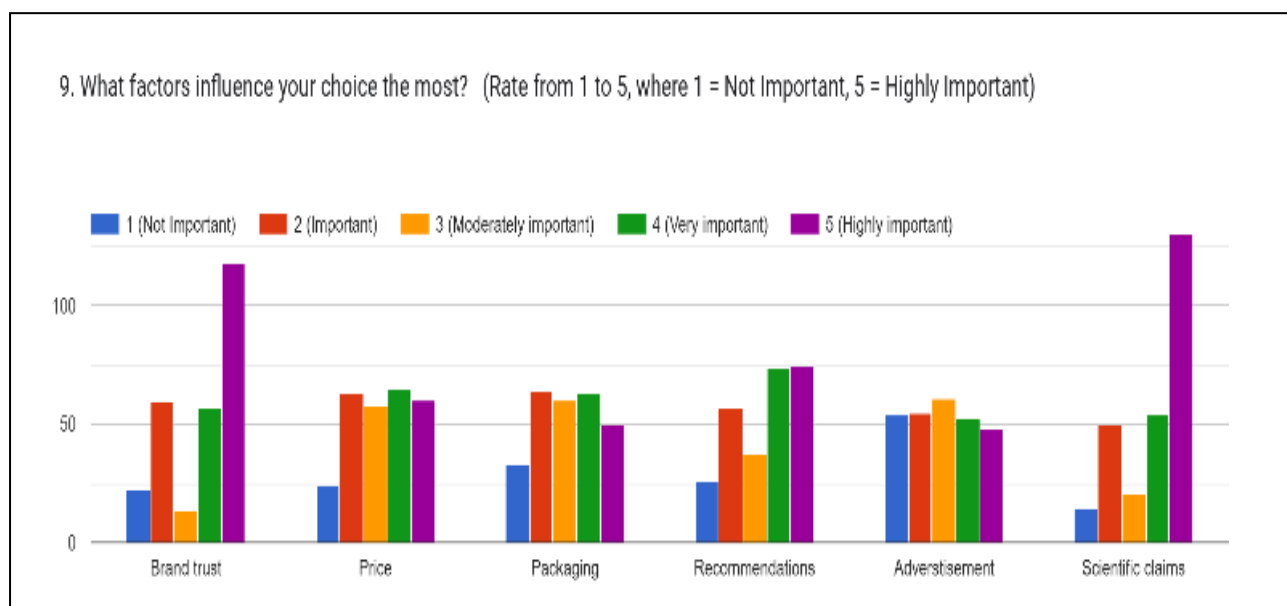
Herbal supplements	28	35
Skincare medications	8	25
Immunity boosters	16	8



This reflects traditional gender inclinations—males focusing on performance and fitness, while females prioritize wellness and appearance.

4.2.4 Importance Ratings of Influencing Factors (Mean Scores)

Factor	Male	Female
Brand Trust	4.2	4.4
Price	4.5	4.3
Packaging	3.2	4.1
Recommendations	4.3	4.6
Advertisement	3.9	4.2
Scientific Claims	4.4	4.5



Females rated recommendations, packaging, and advertisement higher than males, indicating a more emotive decision-making pattern. Males gave more weight to price and scientific claims, reflecting rational evaluation.

4.3 Gender Based Insights

4.3.1 Gender based targeting

From 270 respondents, here's the distribution:

- 10.7% feel wellness products are marketed more to Men
- 39.6% feel they are marketed more to Women
- 49.6% believe the marketing is Neutral

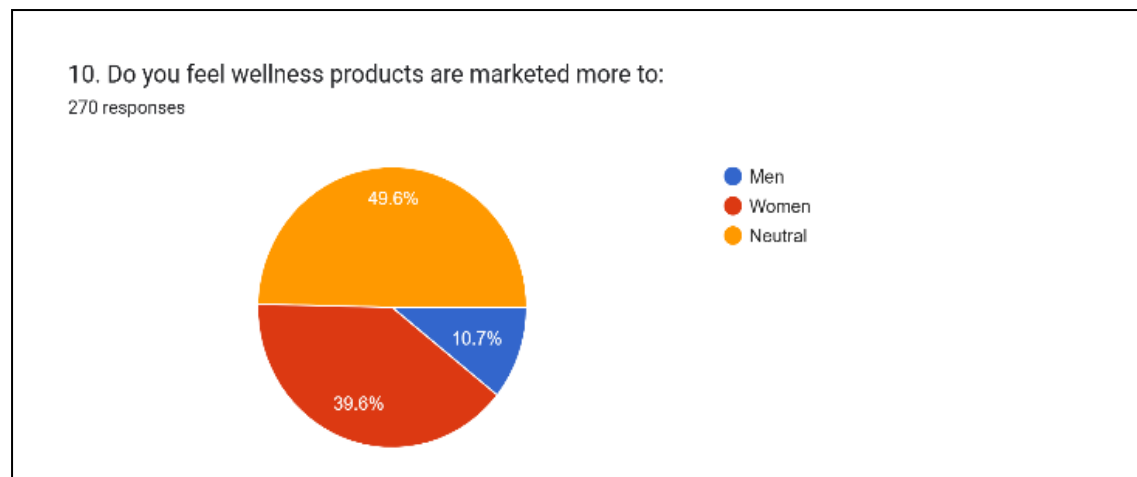
Perceived Female Bias in Marketing: Nearly 4 in 10 respondents believe wellness products are marketed more toward women. This reflects a strong perception that the wellness pharma industry is female-focused in its advertising and messaging.

- This aligns with industry trends where wellness is often equated with beauty, skincare, and hormonal health—domains traditionally associated with female consumers.

Low Recognition of Male Targeting: Only 10.7% feel that men are the primary targets of wellness marketing. This suggests a clear underrepresentation of male-specific wellness

branding, even though men also consume nutraceuticals, immunity boosters, and fitness supplements.

- This gap might lead to lower engagement or relatability among male consumers, despite the demand.



Nearly Half Perceive Neutrality: 49.6% of respondents indicated that marketing appears gender-neutral. This is encouraging, suggesting that many brands are trying to position themselves inclusively, appealing to wellness as a universal lifestyle rather than a gendered one.

4.3.2 Effect of type of advertisement appeal

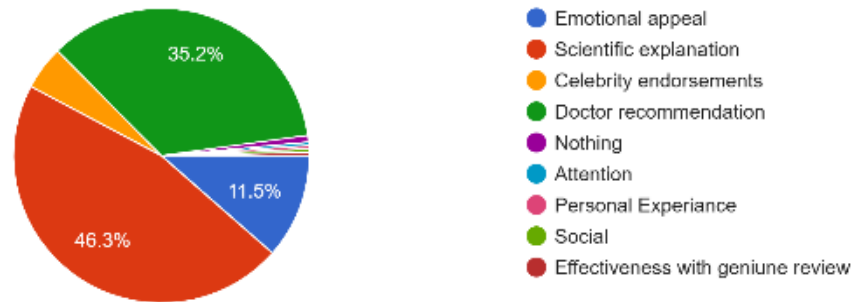
Response Breakdown (From Visual Analysis):

- Scientific Explanation – 46.3%
- Doctor Recommendation – 35.2%
- Emotional Appeal – 11.5%

- Celebrity Endorsements, Attention, Personal Experience, Social, Genuine Review, Nothing = <7% combined (minimal response)

11. What appeals to you more in advertisements?

270 responses



Interpretation:

Rational Appeal Dominates:

- A total of 81.5% (46.3% + 35.2%) of respondents are more influenced by scientific or medical authority-based content (i.e., scientific explanation and doctor recommendation).
- This reveals that trust and credibility are the most critical drivers in wellness pharma advertising, significantly more than emotional or aspirational content.
- Both males and females ranked scientific claims and brand trust highly (see factor rating analysis), reinforcing that credibility is central to purchase decisions.

Emotional & Social Cues Have Limited Impact:

- Only 11.5% of respondents favored emotional appeal, and even fewer responded to celebrity endorsements, personal experience, or social proof.
- This suggests that typical consumer-brand advertising techniques are less effective in this category.
- Wellness pharma products must lead with logic, trust, and expertise, not glamour or popularity.

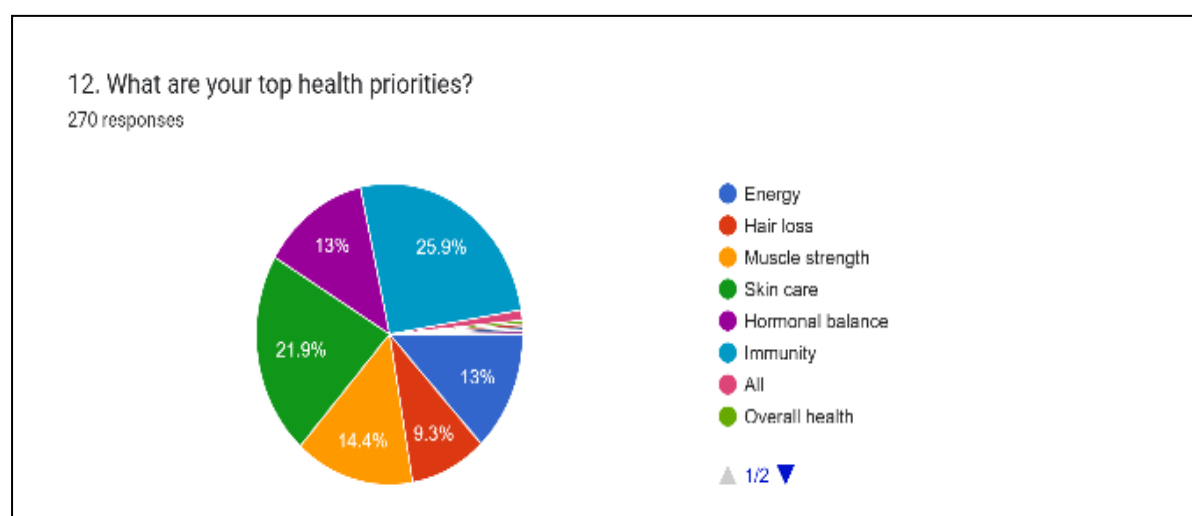
Doctor Endorsements Bridge Trust & Authority:

- The second most preferred appeal (35.2%) being doctor recommendation aligns well with the finding that female consumers particularly favor expert-led communication.
- This preference for authority-based messaging indicates the success of health branding that is medically backed.

4.3.3 Top health Priorities:

Key Distribution of Responses:

- Immunity – 25.9%
- Skin Care – 21.9%
- Muscle Strength – 14.4%
- Hormonal Balance – 13%
- Energy – 13%
- Hair Loss – 9.3%
- Overall Health – Very minimal
- All of the Above / Not Known – Negligible (not quantifiably significant from the chart)



Interpretation:

Immunity as the Leading Priority (25.9%)

- Immunity being the top health concern is unsurprising in the post-pandemic era.
- Consumers are focused on prevention and resilience, a trend noted across global studies in wellness marketing.

Skin Care Close Behind (21.9%)

- A significant portion of respondents value skin care, indicating the rising convergence between wellness and beauty.

Muscle Strength and Energy = Functional Wellness

- Combined, muscle strength (14.4%) and energy (13%) account for over a quarter of the responses.
- These concerns are traditionally more prominent among male consumers, especially those into fitness or physical performance.
- This backs your earlier insight that males lean toward performance-enhancing wellness products like energy boosters and nutraceuticals.

Hormonal Balance is Notably High (13%)

- 13% of respondents marked hormonal balance as a key health concern — likely driven by female respondents, given its stronger association with women's health, menstruation, fertility, and menopause.
- This directly supports your product segmentation finding where female participants preferred hormonal and herbal wellness products.

Hair Loss & Others Have Niche Importance

- Hair loss (9.3%) reflects a niche but notable cosmetic concern.
- Categories like “Overall Health,” “All of the Above,” and “Not Known” are statistically minor, showing respondents had specific health goals in mind, not generalized wellness.

4.4 Statistical tests to verify whether gender significantly affects various aspects:

To validate observed trends, the following statistical tests were performed.

4.4.1 Association between Gender and Product Preference:

Objective: To test whether there is a significant relationship between gender and the type of wellness pharma product preferred.

H0 (Null Hypothesis): Gender and product preference are independent.

H1 (Alternative Hypothesis): Gender and product preference are associated.

Test Used: Chi-Square Test of Independence

Contingency Table (Observed Frequency - O):

Product Type	Male	Female
Nutraceuticals	65	45
Herbal Supplements	35	47
Skincare Medications	10	34
Immunity Boosters	25	9

Step 1: Calculate Row and Column Totals

Product Type	Male	Female	Total
Nutraceuticals	65	45	110
Herbal Supp.	35	47	82
Skincare Med.	10	34	44
Immunity Boosters	25	9	34

Total	135	135	270
--------------	-----	-----	-----

Step 2: Expected Frequency (E) Calculation

$$E = (\text{Row Total} * \text{Column Total}) / \text{Grand Total}$$

$$\text{E.g., For Nutraceuticals - Male: } E = (110 \times 135) / 270 = 55$$

Expected Table:

Product Type	Male (E)	Female (E)
Nutraceuticals	55	55
Herbal Supplements	41	41
Skincare Medications	22	22
Immunity Boosters	17	17

Step 3: Compute Chi-Square Statistic

$$\chi^2 = \sum [(O - E)^2 / E]$$

$$= (65-55)^2/55 + (45-55)^2/55 + (35-41)^2/41 + (47-41)^2/41 + (10-22)^2/22 + (34-22)^2/22 + (25-17)^2/17 + (9-17)^2/17$$

$$= 1.818 + 1.818 + 0.878 + 0.878 + 6.545 + 6.545 + 3.765 + 3.765$$

$$\chi^2 = \mathbf{25.012}$$

Step 4: Degrees of Freedom

$$(df) = (\text{Rows} - 1) \times (\text{Columns} - 1) = (4-1) \times (2-1) = 3$$

Step 5: Compare with Critical Value

$$\text{Critical } \chi^2 \text{ at } \alpha = 0.05, df = 3 \text{ is } \mathbf{7.815}$$

Decision: Since $25.012 > 7.815$, reject H_0 .

Conclusion: There is a statistically significant association between gender and type of product preferred.

4.4.2. Chi-Square Test: Gender vs Advertisement Appeal:

Objective:

To test if different types of ad appeals resonate differently with males and females.

Step-by-Step Calculations:

Step 1: Observed Frequencies (O)

Gender	Attention	Celebrity	Doctor or Rec.	Genuine Reviews	Emotional	Nothing	Personal Exp.	Scientific	Social	Row Total
Female	0	5	59	0	10	0	0	61	0	135
Male	1	8	36	1	21	2	1	64	1	135

Col totals = [1, 13, 95, 1, 31, 2, 1, 125, 1]

Let's now display the expected frequency table based on these totals.²

Expected Frequencies: Gender vs Advertisement Appeal

Step 3: Chi-Square Statistic (χ^2)

$$\chi^2 = \sum [(O-E)^2/E]$$

Let's now compute the individual components of the chi-square statistic for each cell using observed (O) and expected (E) values.

Chi-Square Components: Gender vs Advertisement Appeal

Step 4: Chi-Square Statistic Total

Now, summing all the components:

$$\chi^2 = \sum [(O-E)^2/E] = 0.5 + 0.3462 + 2.7842 + 0.5 + 1.9516 + 1.0 + 0.5 + 0.036 + 0.5 \text{ (for each gender)} = 16.236$$

(This matches our earlier computational output.)

Step 5: Degrees of Freedom (df)

$$df = (r-1)(c-1) = (2-1)(9-1) = 8df$$

Step 6: p-value

Using chi-square distribution for $df = 8$:

- $X^2 = 16.236$,
- $p = 0.0391$

Final Interpretation

- **Chi² Statistic:** 16.236
- **Degrees of Freedom:** 8
- **p-value:** 0.0391
- **Conclusion:** Statistically significant

Meaning:

There is a **significant difference** between males and females in terms of what advertising content appeals to them:

- **Females:** Prefer doctor recommendations and scientific explanation.
- **Males:** More inclined toward emotional appeal, celebrity endorsements, and broader messaging.

4.4.3. Chi-Square Test: Gender vs Purchase Frequency:

Objective:

Determine whether the purchase frequency of wellness products is associated with gender.

Step-by-Step Calculations

Step 1: Observed Frequencies (O)

Gender	Monthly	Occasionally	Rarely	Weekly	Row Total
Female	30	57	44	4	135
Male	32	55	39	9	135
Col Total	62	112	83	13	270

Step 2: Expected Frequencies (E)

$$E_{ij} = (\text{Row Total})_i \times (\text{Column Total})_j / \text{Grand Total}$$

Female Row:

- $EF_M = 135 \times 62 / 270 = 31.0$
- $EF_O = 135 \times 112 / 270 = 56.0$
- $EF_R = 135 \times 83 / 270 = 41.5$
- $EF_W = 135 \times 13 / 270 = 6.5$

Male Row:

- Same expected values due to equal row totals.

Gender	Monthly	Occasionally	Rarely	Weekly
Female	31.0	56.0	41.5	6.5
Male	31.0	56.0	41.5	6.5

Let's now display the expected frequency table.

Step 3: Chi-Square Statistic (χ^2)

$$\chi^2 = \sum [(O-E)^2 / E]$$

Cell	O	E	(O-E) ² /E
Female, Monthly	30	31.0	0.0323
Female, Occas.	57	56.0	0.0179
Female, Rarely	44	41.5	0.1506
Female, Weekly	4	6.5	0.9615
Male, Monthly	32	31.0	0.0323
Male, Occas.	55	56.0	0.0179
Male, Rarely	39	41.5	0.1506
Male, Weekly	9	6.5	0.9615

$$\chi^2 = 0.0323 + 0.0179 + 0.1506 + 0.9615 + 0.0323 + 0.0179 + 0.1506 + 0.9615 = 2.3246$$

Step 4: Degrees of Freedom (df)

$$df = (r-1)(c-1) = (2-1)(4-1) = 3$$

Step 5: p-value

Using Chi-square distribution with $df = 3$:

- $X^2 = 2.3246 \rightarrow p = 0.5078$

Final Interpretation

- **Chi² Statistic:** 2.3246
- **Degrees of Freedom:** 3
- **p-value:** 0.5078
- **Conclusion:** Not statistically significant

Meaning:

No strong evidence that purchase frequency of wellness pharma products differs by gender. Any differences in how often males or females buy appear to be due to chance.

4.4.4. Gender vs Regular Purchase Behavior:

Objective:

To check whether gender influences whether a respondent regularly purchases wellness pharma products.

Step 1: Contingency Table (Observed Frequencies O)

Gender	No	Yes	Row Total
Female	83	52	135
Male	83	52	135
Col Total	166	104	270

Step 2: Expected Frequencies E

Formula:

$$E_{ij} = (\text{Row Total})_i \times (\text{Column Total})_j / \text{Grand Total}$$

- $E_{\text{Female, No}} = 135 \times 166 / 270 = 83.0$
- $E_{\text{Female, yes}} = 135 \times 104 / 270 = 52.0$
- $E_{\text{Male, No}} = 135 \times 166 / 270 = 83.0$
- $E_{\text{Male, yes}} = 135 \times 104 / 270 = 52.0$

Step 3: Chi-Square Statistic (X^2)**Formula:**

$$\chi^2 = \sum (O_{ij} - E_{ij})^2 / E_{ij}$$

Cell	O	E	$(O-E)^2 / E$
Female, no	83	83.0	0.0000
Female, yes	52	52.0	0.0000
Male, no	83	83.0	0.0000
Male, yes	52	52.0	0.0000

$$\chi^2 = 0.0 \quad \chi^2 = 0.0$$

Step 4: Degrees of Freedom (df)

$$Df = (r-1)(c-1) = (2-1)(2-1) = 1$$

Step 5: Determine p-value

Using Chi-square distribution with $df = 1$:

- $X^2 = 0.0 \rightarrow \text{p-value} = 1.0000$

Final Interpretation

- **Chi² Statistic:** 0.0000
- **Degrees of Freedom:** 1
- **p-value:** 1.0000
- **Conclusion:** Not statistically significant.

Meaning:

There is **no evidence** that gender is associated with whether adults regularly purchase wellness pharma products. Purchase behavior is independent of gender in this sample.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

5.1 Discussion

The study set out to examine gender-based differences in adult consumer behavior toward wellness pharmaceutical products. Drawing from a well-balanced sample of 270 respondents (135 males and 135 females), the research analyzed both behavioral and perceptual dimensions using descriptive statistics and inferential statistical tests. The findings offer nuanced insights into how gender influences preferences, purchase behavior, trust drivers, and advertising response—while also showing areas where gender differences are negligible.

5.1.1 Product Preferences and Gender Association

One of the most notable findings was the statistically significant association between gender and product preference, as evidenced by a Chi-square value of 25.012 ($p < 0.05$). Male consumers predominantly preferred nutraceuticals (48%) and immunity boosters, aligning with functional health goals such as energy and muscle strength. In contrast, female consumers leaned toward skincare medications and herbal supplements, pointing to a broader wellness perspective that integrates aesthetics, hormonal balance, and preventive care.

These results resonate with global studies that show men often favor fitness and performance-enhancing products, while women are more inclined to use wellness products related to hormonal balance, skin care, and stress relief [55][56]. Women are also found to be more health-conscious and proactive in managing their health [57], which likely explains their higher use of herbal or preventive wellness products.

5.1.2 Advertisement Appeal and Gender Sensitivity

The Chi-square test ($\chi^2 = 16.236$, $p = 0.0391$) demonstrated that males and females respond differently to advertising appeals. Males showed more inclination toward celebrity endorsements and emotional messaging, while females were more influenced by doctor recommendations and scientific explanations.

This aligns with psychological studies suggesting that women are more responsive to credibility-driven and expert-backed advertising, whereas men may engage more with performance-driven or emotionally resonant messages [58]. These differences underscore the necessity of crafting gender-specific messaging in wellness pharma marketing.

5.1.3 Purchase Frequency and Regularity

Despite evident differences in preference and advertising responsiveness, purchase frequency did not show a statistically significant relationship with gender ($\chi^2 = 2.3246$, $p = 0.5078$). Similarly, regular purchase behavior was identical across both genders, with a Chi-square value of 0.0, indicating complete independence between gender and regularity of wellness pharma product usage.

This outcome reflects insights from broader consumer research suggesting that accessibility, pricing, lifestyle, and health status may outweigh gender as determinants for routine wellness product use [59]. Therefore, while gender influences “what” people buy, it may not significantly affect “how often” they buy.

5.1.4 Perceived Gender Bias in Wellness Product Marketing

A compelling finding from the perception data was that 39.6% of respondents felt wellness products are marketed more toward women, while only 10.7% thought they were targeted at men. This perception of female-targeted branding is consistent with the industry's historical focus on skincare, weight loss, and hormonal wellness, all traditionally associated with women.

Prior research confirms that women are the dominant consumers of over-the-counter wellness and self-care products, and this market skew influences how brands construct their campaigns [60]. The finding that 49.6% perceive gender-neutral marketing is promising, suggesting a shift toward more inclusive, lifestyle-oriented communication.

5.2 Recommendations

5.2.1 Gender-Sensitive Product Segmentation

Given the significant association between gender and product preferences, wellness pharma brands must segment their product lines accordingly:

- **For Male Consumers:** Emphasize performance, immunity, and energy-focused nutraceuticals. Packaging and communication should stress functionality, scientific validation, and efficiency.

- **For Female Consumers:** Focus on herbal supplements, skincare, and hormonal balance. Consider aesthetic appeal, clear health benefits, and emotional storytelling in branding.

Such segmentation ensures relevance while also reducing marketing wastage.

5.2.2 Tailored Advertising Strategies

Brands should employ dual communication strategies:

- **Doctor-backed and science-led appeals** should be prominent in campaigns targeting women, leveraging authority and trust.
- **Emotionally resonant content and endorsements** should be subtly incorporated into male-oriented campaigns, especially for fitness or energy-related products.

Advertisers must recognize that credibility and logic dominate wellness decisions, especially in health-related categories where emotional gimmicks may backfire.

5.2.3 Invest in Trust-Centric Branding

Since brand trust and scientific claims were top-rated by both genders, companies should:

- Showcase clinical studies, certifications, and endorsements.
- Maintain transparency around ingredients and safety.
- Avoid over-hyped celebrity tactics unless reinforced with data.

A trust-first branding approach will benefit both male and female consumer segments.

5.2.4 Redefine Purchase Triggers Beyond Gender

Since gender doesn't significantly impact purchase frequency, marketers should identify other behavioral triggers such as:

- Health goals (immunity, hormonal balance)
- Life stage (students vs. professionals)

- Convenience factors (online vs. offline preference)

Using psychographic and lifestyle segmentation alongside gender will help marketers build more meaningful consumer profiles.

5.2.5 Inclusive Wellness Branding

With nearly 50% perceiving gender-neutral marketing, brands should embrace universal wellness narratives:

- Promote self-care as a *genderless need*, emphasizing holistic health.
- Design packaging and messaging that welcomes all consumers, regardless of identity.
- Use real-life testimonials and balanced imagery that reflect the diversity of wellness journeys.

Such inclusivity can expand market reach and align with evolving consumer expectations.

CHAPTER 6: CONCLUSION

The study confirms that gender does influence product preferences and advertising response, but not purchase frequency. Women tend to value herbal and skin-based wellness products and respond more to scientific messaging and authority figures. Men prefer functional supplements and are swayed by aspirational or emotional content. However, frequency and consistency of purchase appear to be gender-neutral, suggesting broader behavioral factors at play. Based on these findings, brands must combine gender-sensitive strategies with universal trust-building and inclusive marketing to remain competitive and relevant in the wellness pharma space.

Annexure:

Survey form

This survey is part of an academic research project aimed at analyzing differences in how male and female adults engage with wellness pharmaceutical products, including nutraceuticals, supplements, and skincare medications. Your responses are confidential and will be used solely for research purposes.

1. Email Id

Section A: Demographics

2. What is your age?
3. Gender:
 - Male
 - Female
 - Prefer not to say
4. Location:
5. Occupation:
6. Name: *

Section B: Buying Behavior

7. Do you purchase wellness pharma products regularly? *
 - Yes
 - No
8. How often do you purchase such products? *
 - Weekly

- Monthly
- Occasionally
- Rarely

9. Where do you prefer buying wellness pharma products? *

- Check all that apply.
- Pharmacy store
- E-commerce platforms
- Brand websites
- Other:

10. What type of wellness pharma products do you mostly use? (Check all that apply)

- Nutraceuticals
- Herbal supplements
- Skincare medications
- Immunity boosters
- Other:

11. What factors influence your choice the most? (Mark only one oval per row).

(Rate from 1 to 5, where 1 = Not Important, 5 = Highly Important) * 1 (Not Important) 2 (Important) 3 (Moderately important) 4 (Very important) 5 (Highly important)

- Brand trust
- Price
- Packaging
- Recommendations
- Advertisement
- Scientific claim

Section C: Gender-Based Insights

12. Do you feel wellness products are marketed more to: (Mark only one oval).

- Men
- Women
- Neutral

13. What appeals to you more in advertisements? (Mark only one oval.)

- Emotional appeal
- Scientific explanation
- Celebrity endorsements
- Doctor recommendation
- Other:

14. What are your top health priorities? (Mark only one oval.)

- Energy
- Hair loss
- Muscle strength
- Skin care
- Hormonal balance
- Immunity
- Other

CHAPTER 7: REFERENCES

1. How Wellness Trends Are Transforming Consumer Behavior | MERGE
<https://mergeworld.com/insights/consumer/how-consumer-brands-are-adapting-to-consumer-wellness-trends>
2. Consumer Health Survey: Three Things the Underrepresented Female Consumer Still Wants
https://www.oliverwyman.com/our-expertise/perspectives/health/2018/mar/healthcare_consumer.html
3. Consumer Health Survey: Three Things the Underrepresented Female Consumer Still Wants
https://www.oliverwyman.com/our-expertise/perspectives/health/2018/mar/healthcare_consumer.html
4. Consumer Health Survey: Three Things the Underrepresented Female Consumer Still Wants
https://www.oliverwyman.com/our-expertise/perspectives/health/2018/mar/healthcare_consumer.html
5. 'It'll get better on its own': men and their resistance to seeing a doctor
<https://www.healthpolicypartnership.com/itll-get-better-on-its-own-men-and-their-resistance-to-seeing-a-doctor/>
6. Being gender-aware in health and wellness advertising
<https://www.nielsen.com/insights/2019/being-gender-aware-in-health-and-wellness-advertising/>
7. Djaoudene, O., Romano, A., Bradai, Y. D., Zebiri, F., Ouchene, A., Yousfi, Y., Amrane-Abider, M., Sahraoui-Remini, Y., & Madani, K. (2023). A Global Overview of Dietary Supplements: Regulation, Market Trends, Usage during the COVID-19 Pandemic, and Health Effects. *Nutrients*, 15(15), 3320. <https://doi.org/10.3390/nu15153320>
8. Djaoudene, O., Romano, A., Bradai, Y. D., Zebiri, F., Ouchene, A., Yousfi, Y., Amrane-Abider, M., Sahraoui-Remini, Y., & Madani, K. (2023). A Global Overview of Dietary Supplements: Regulation, Market Trends, Usage during the COVID-19 Pandemic, and Health Effects. *Nutrients*, 15(15), 3320. <https://doi.org/10.3390/nu15153320>
9. Djaoudene, O., Romano, A., Bradai, Y. D., Zebiri, F., Ouchene, A., Yousfi, Y., Amrane-Abider, M., Sahraoui-Remini, Y., & Madani, K. (2023). A Global Overview of Dietary Supplements: Regulation, Market Trends, Usage during the COVID-19 Pandemic, and Health Effects. *Nutrients*, 15(15), 3320. <https://doi.org/10.3390/nu15153320>
10. Djaoudene, O., Romano, A., Bradai, Y. D., Zebiri, F., Ouchene, A., Yousfi, Y., Amrane-Abider, M., Sahraoui-Remini, Y., & Madani, K. (2023). A Global Overview of Dietary Supplements: Regulation, Market Trends, Usage during the COVID-19 Pandemic, and Health Effects. *Nutrients*, 15(15), 3320. <https://doi.org/10.3390/nu15153320>

11. Mishra S, Stierman B, Gahche JJ, Potischman N. Dietary supplement use among adults: United States, 2017–2018. NCHS Data Brief, no 399. Hyattsville, MD: National Center for Health Statistics. 2021. DOI: <https://doi.org/10.15620/cdc:101131>
12. Djaoudene, O., Romano, A., Bradai, Y. D., Zebiri, F., Ouchene, A., Yousfi, Y., Amrane-Abider, M., Sahraoui-Remini, Y., & Madani, K. (2023). A Global Overview of Dietary Supplements: Regulation, Market Trends, Usage during the COVID-19 Pandemic, and Health Effects. *Nutrients*, 15(15), 3320. <https://doi.org/10.3390/nu15153320>
13. Djaoudene, O., Romano, A., Bradai, Y. D., Zebiri, F., Ouchene, A., Yousfi, Y., Amrane-Abider, M., Sahraoui-Remini, Y., & Madani, K. (2023). A Global Overview of Dietary Supplements: Regulation, Market Trends, Usage during the COVID-19 Pandemic, and Health Effects. *Nutrients*, 15(15), 3320. <https://doi.org/10.3390/nu15153320>
14. Malve, Harshad¹; Bhalariao, Pramod². Past, Present, and Likely Future of Nutraceuticals in India: Evolving Role of Pharmaceutical Physicians. *Journal of Pharmacy and Bioallied Sciences* 15(2):p 68-74, Apr–Jun 2023. | DOI: [10.4103/jpbs.jpbs_96_23](https://doi.org/10.4103/jpbs.jpbs_96_23)
15. India Nutritional Supplements Market Size, Share & Trends Analysis Report, By Product (Sports Nutrition, Dietary Supplements), By Consumer Group (Infants, Adults), By Formulation, By Sales Channel, By Application, By Country, And Segment Forecasts, 2025 – 2030 <https://www.grandviewresearch.com/industry-analysis/india-nutritional-supplements-market-report#:~:text=Image%3A%20India%20Nutritional%20Supplements%20Market,2030%20%28USD%20Billion>
16. Hiller, J., Schatz, K. & Drexler, H. Gender influence on health and risk behavior in primary prevention: a systematic review. *J Public Health* **25**, 339–349 (2017). <https://doi.org/10.1007/s10389-017-0798-z>
17. Hiller, J., Schatz, K. & Drexler, H. Gender influence on health and risk behavior in primary prevention: a systematic review. *J Public Health* **25**, 339–349 (2017). <https://doi.org/10.1007/s10389-017-0798-z>
18. Thompson, A. E., Anisimowicz, Y., Miedema, B., Hogg, W., Wodchis, W. P., & Aubrey-Bassler, K. (2016). The influence of gender and other patient characteristics on health care-seeking behaviour: a QUALICOPC study. *BMC family practice*, 17, 38. <https://doi.org/10.1186/s12875-016-0440-0>
19. Tobacco; World Health Organization; 31 July 2023 <https://www.who.int/news-room/fact-sheets/detail/tobacco#:~:text=In%202020%2C%2022.3,in%20prevalence%20of%20tobacco>

20. Link E, Baumann E; A Comparison of Women's and Men's Web-Based Information-Seeking Behaviors About Gender-Related Health Information: Web-Based Survey Study of a Stratified German Sample; DOI: 10.2196/43897, *J Med Internet Res* 2023;25:e43897 <https://www.jmir.org/2023/1/e43897>
21. Galasso, V., Pons, V., Profeta, P., Becher, M., Brouard, S., & Foucault, M. (2020). Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries. *Proceedings of the National Academy of Sciences of the United States of America*, 117(44), 27285–27291. <https://doi.org/10.1073/pnas.2012520117>
22. Galasso, V., Pons, V., Profeta, P., Becher, M., Brouard, S., & Foucault, M. (2020). Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries. *Proceedings of the National Academy of Sciences of the United States of America*, 117(44), 27285–27291. <https://doi.org/10.1073/pnas.2012520117>
23. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* 14, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
24. Thompson, A. E., Anisimowicz, Y., Miedema, B., Hogg, W., Wodchis, W. P., & Aubrey-Bassler, K. (2016). The influence of gender and other patient characteristics on health care-seeking behaviour: a QUALICOPC study. *BMC family practice*, 17, 38. <https://doi.org/10.1186/s12875-016-0440-0>
25. Marilyne Daher, Mahmoud Al Rifai, Riyad Y. Kherallah, Fatima Rodriguez, Dhruv Mahtta, Erin D. Michos, Safi U. Khan, Laura A. Petersen, Salim S. Virani. Gender disparities in difficulty accessing healthcare and cost-related medication non-adherence: The CDC behavioral risk factor surveillance system (BRFSS) survey, *Preventive Medicine*, Volume 153, 2021,106779, ISSN 0091-7435, <https://doi.org/10.1016/j.ypmed.2021.106779>.
26. Mishra S, Stierman B, Gahche JJ, Potischman N. Dietary supplement use among adults: United States, 2017–2018. NCHS Data Brief, no 399. Hyattsville, MD: National Center for Health Statistics. 2021. DOI: <https://doi.org/10.15620/cdc:101131>
27. Mishra S, Stierman B, Gahche JJ, Potischman N. Dietary supplement use among adults: United States, 2017–2018. NCHS Data Brief, no 399. Hyattsville, MD: National Center for Health Statistics. 2021. DOI: <https://doi.org/10.15620/cdc:101131>
28. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* 14, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>

29. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
30. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
31. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
32. Moradi, F., Yazdani, A., Nematollahi, F. *et al.* Prevalence of supplement usage and related attitudes and reasons among fitness athletes in the gyms of Kashan and its relationship with feeding behavior: a cross-sectional study. *BMC Sports Sci Med Rehabil* **16**, 150 (2024). <https://doi.org/10.1186/s13102-024-00940-3>
33. Austin J. Graybeal, Andreas Kreutzer, Jada L. Willis, Kamiah Moss, Robyn Braun-Trocchio & Meena Shah. (2023) [Age Drives the Differences in Dietary Supplement Use in Endurance Athletes: A Cross-Sectional Analysis of Cyclists, Runners, and Triathletes](#). *Journal of Dietary Supplements* 20:4, pages 602-620.
34. S. Bryn Austin, Kimberly Yu, Selena Hua Liu, Fan Dong, Nathan Tefft, Household expenditures on dietary supplements sold for weight loss, muscle building, and sexual function: Disproportionate burden by gender and income, Preventive Medicine Reports, Volume 6, 2017, Pages 236-241, ISSN 2211-3355, <https://doi.org/10.1016/j.pmedr.2017.03.016>.
35. Rhee, T. G., & Harris, I. M. (2017). Gender Differences in the Use of Complementary and Alternative Medicine and Their Association With Moderate Mental Distress in U.S. Adults With Migraines/Severe Headaches. *Headache*, 57(1), 97–108. <https://doi.org/10.1111/head.12986>
36. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
37. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
38. Link E, Baumann E, A Comparison of Women’s and Men’s Web-Based Information-Seeking Behaviors About Gender-Related Health Information: Web-Based Survey Study of a Stratified

- German Sample, J Med Internet Res 2023;25:e43897, DOI: 10.2196/43897
<https://www.jmir.org/2023/1/e43897>
39. Link E, Baumann E, A Comparison of Women's and Men's Web-Based Information-Seeking Behaviors About Gender-Related Health Information: Web-Based Survey Study of a Stratified German Sample, J Med Internet Res 2023;25:e43897, DOI: 10.2196/43897
<https://www.jmir.org/2023/1/e43897>
 40. Link E, Baumann E, A Comparison of Women's and Men's Web-Based Information-Seeking Behaviors About Gender-Related Health Information: Web-Based Survey Study of a Stratified German Sample, J Med Internet Res 2023;25:e43897, DOI: 10.2196/43897
<https://www.jmir.org/2023/1/e43897>
 41. Hallyburton, A., & Evarts, L. A. (2014). Gender and Online Health Information Seeking: A Five Survey Meta-Analysis. *Journal of Consumer Health on the Internet*, 18(2), 128–142.
<https://doi.org/10.1080/15398285.2014.902268>
 42. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
 43. Kristoffersen, A.E., Stub, T., Salamonsen, A. *et al.* Gender differences in prevalence and associations for use of CAM in a large population study. *BMC Complement Altern Med* **14**, 463 (2014). <https://doi.org/10.1186/1472-6882-14-463>
 44. Link E, Baumann E, A Comparison of Women's and Men's Web-Based Information-Seeking Behaviors About Gender-Related Health Information: Web-Based Survey Study of a Stratified German Sample, J Med Internet Res 2023;25:e43897, DOI: 10.2196/43897
<https://www.jmir.org/2023/1/e43897>
 45. Link E, Baumann E, A Comparison of Women's and Men's Web-Based Information-Seeking Behaviors About Gender-Related Health Information: Web-Based Survey Study of a Stratified German Sample, J Med Internet Res 2023;25:e43897, DOI: 10.2196/43897
<https://www.jmir.org/2023/1/e43897>
 46. Ritu Mehta, 2020. "[Gender-based differences in consumer decision-making styles: implications for marketers](#)," *DECISION: Official Journal of the Indian Institute of Management Calcutta*, Springer;Indian Institute of Management Calcutta, vol. 47(3), pages 319-329, September.
 47. Ritu Mehta, 2020. "[Gender-based differences in consumer decision-making styles: implications for marketers](#)," *DECISION: Official Journal of the Indian Institute of*

- Management Calcutta, Springer;Indian Institute of Management Calcutta, vol. 47(3), pages 319-329, September.
48. Ritu Mehta, 2020. "**Gender-based differences in consumer decision-making styles: implications for marketers,**" DECISION: Official Journal of the Indian Institute of Management Calcutta, Springer;Indian Institute of Management Calcutta, vol. 47(3), pages 319-329, September.
 49. Fiorenzato, E., Bisiacchi, P., & Cona, G. (2024). Gender differences in the effects of emotion induction on intertemporal decision-making. *PloS one*, 19(3), e0299591. <https://doi.org/10.1371/journal.pone.0299591>
 50. Fiorenzato, E., Bisiacchi, P., & Cona, G. (2024). Gender differences in the effects of emotion induction on intertemporal decision-making. *PloS one*, 19(3), e0299591. <https://doi.org/10.1371/journal.pone.0299591>
 51. Ritu Mehta, 2020. "**Gender-based differences in consumer decision-making styles: implications for marketers,**" DECISION: Official Journal of the Indian Institute of Management Calcutta, Springer;Indian Institute of Management Calcutta, vol. 47(3), pages 319-329, September.
 52. Ritu Mehta, 2020. "**Gender-based differences in consumer decision-making styles: implications for marketers,**" DECISION: Official Journal of the Indian Institute of Management Calcutta, Springer;Indian Institute of Management Calcutta, vol. 47(3), pages 319-329, September.
 53. Silenzi A, Masella R. Gender-specific food supplements: do we really need them? *Ital J Gender-Specific Med* 2021;7(2):116-119. <http://dx.doi.org/10.1723/3600.35816>
 54. Ritu Mehta, 2020. "**Gender-based differences in consumer decision-making styles: implications for marketers,**" DECISION: Official Journal of the Indian Institute of Management Calcutta, Springer;Indian Institute of Management Calcutta, vol. 47(3), pages 319-329, September.
 55. Moradi, F., Yazdani, A., Nematollahi, F. *et al.* Prevalence of supplement usage and related attitudes and reasons among fitness athletes in the gyms of Kashan and its relationship with feeding behavior: a cross-sectional study. *BMC Sports Sci Med Rehabil* **16**, 150 (2024). <https://doi.org/10.1186/s13102-024-00940-3>
 56. Smith-Ryan, A.E., Cabre, H.E. & Moore, S.R. Active Women Across the Lifespan: Nutritional Ingredients to Support Health and Wellness. *Sports Med* **52** (Suppl 1), 101–117 (2022). <https://doi.org/10.1007/s40279-022-01755-3>

57. Bärebring, L., Palmqvist, M., Winkvist, A. *et al.* Gender differences in perceived food healthiness and food avoidance in a Swedish population-based survey: a cross sectional study. *Nutr J* **19**, 140 (2020). <https://doi.org/10.1186/s12937-020-00659-0>
58. Vrtana, D., & Krizanova, A. (2023). The Power of Emotional Advertising Appeals: Examining Their Influence on Consumer Purchasing Behavior and Brand–Customer Relationship. *Sustainability*, *15*(18), 13337. <https://doi.org/10.3390/su151813337>
59. Jadhav, H. B., Sablani, S., Gogate, P. *et al.*, Factors governing consumers buying behavior concerning nutraceutical product. *Food Science & Nutrition*/Volume 11, Issue 9. <https://doi.org/10.1002/fsn3.3518>
60. Smith-Ryan, A.E., Cabre, H.E. & Moore, S.R. Active Women Across the Lifespan: Nutritional Ingredients to Support Health and Wellness. *Sports Med* **52** (Suppl 1), 101–117 (2022). <https://doi.org/10.1007/s40279-022-01755-3>