

บทความวิชาการ

Academic Articles

ความรู้ ทักษะ และพฤติกรรมการใช้วิตามินและอาหารเสริมในกลุ่มวัยรุ่นและเยาวชนไทย: การทบทวนอย่างเป็นระบบเกี่ยวกับแนวโน้มปัจจุบันปัจจัยกำหนดและนัยสำคัญทางสาธารณสุข

เมธวิน ประพัทธาภินิ¹¹โรงเรียนราชสีมาวิทยาลัยอัคนันท์ จรัสวรารณ²²โรงเรียนโพธิสารพิทยากรเหมรัมย์ ปรายญนคร³³โรงเรียนกลินธรเซนต์ปีเตอร์พิมพ์มาดา บุญญอาหาร⁴⁴โรงเรียนปอคอนเฮาส์แยมส์อาดหัวหินพลอยธีรา สิริพัฒน์⁵⁵โรงเรียนเบญจมราชูทิศพฤษา มะธูระนัทร⁶⁶โรงเรียนสรวงวิทยรชภา หาญไกรพงศ์⁷⁷โรงเรียนวัฒนาวิทยาลัยศุภิมณ มังคลรังษี⁸⁸นักวิจัยอิสระ

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บทคัดย่อ

การใช้วิตามินและอาหารเสริมในกลุ่มวัยรุ่นและเยาวชนไทยมีแนวโน้มเพิ่มขึ้นอย่างต่อเนื่อง จากมีรูปแบบการดำเนินชีวิตที่เปลี่ยนแปลงไปจากการตลาดที่มีอิทธิพลและความเชื่อว่าเป็นประโยชน์ต่อสุขภาพ อย่างไรก็ตาม การขาดความรู้ ความเข้าใจที่ถูกต้องเกี่ยวกับในการบริโภคผลิตภัณฑ์เหล่านี้ โดยปราศจากคำแนะนำจากผู้เชี่ยวชาญ อาจทำให้เกิดปัญหาด้านสาธารณสุขในระยะยาว การศึกษาเชิงประจักษ์เกี่ยวกับความรู้ ทักษะ และพฤติกรรมการใช้วิตามินและอาหารเสริมในกลุ่มวัยรุ่นและเยาวชนไทยนี้ เพื่อค้นหาปัจจัยกำหนดที่มีอิทธิพลต่อพฤติกรรมนี้ ผลกระทบต่อสุขภาพและประเด็นเชิงนโยบายที่เกี่ยวข้องด้วยวิธีการทบทวนอย่างเป็นระบบตามแนวทาง PRISMA โดยสืบค้นข้อมูลจากฐานข้อมูลต่าง ๆ ทั้งภาษาไทยและภาษาอังกฤษที่ตีพิมพ์ระหว่างปี พ.ศ. 2543 ถึง กรกฎาคม พ.ศ. 2568 โดยคัดเลือกบทความที่มีการประเมินความรู้ ทักษะ พฤติกรรม หรือปัจจัยที่เกี่ยวข้องกับการใช้วิตามินและอาหารเสริมในกลุ่มวัยรุ่นอายุ 10-19 ปี และเยาวชนอายุ 20-24 ปี จากนั้นทำการวิเคราะห์และสังเคราะห์ผลการศึกษาระงับอคติ

ผลการศึกษาพบว่า การใช้วิตามินและอาหารเสริมมากมีแรงจูงใจจากค่านิยมด้านความงามอิทธิพลจากเพื่อน และการตลาด มากกว่าความจำเป็นทางการแพทย์ ความรู้ของกลุ่มตัวอย่างที่ศึกษามีความหลากหลายมีความเข้าใจผิดเกี่ยวกับประโยชน์และความปลอดภัย ทักษะโดยรวมเชิงบวกเชื่อว่าส่งผลดีต่อสุขภาพ ส่วนใหญ่ซื้อด้วยตนเองหรือทางออนไลน์ โดยไม่ปรึกษาผู้เชี่ยวชาญ ผลกระทบต่อสุขภาพมีทั้งด้านบวกและความเสี่ยงต่อผลข้างเคียง ส่วนด้านนโยบายพบว่า มีข้อจำกัดด้านการกำกับดูแลการโฆษณาและการดำเนินการมาตรการสาธารณสุขที่ตรงกลุ่มเป้าหมาย

การใช้วิตามินและอาหารเสริมอย่างแพร่หลาย โดยขาดการกำกับดูแลในกลุ่มวัยรุ่นและเยาวชนไทยควรเน้นย้ำความจำเป็นในการพัฒนาความรู้เท่าทันด้านสุขภาพ ควรดำเนินการจัดการให้ความรู้ ควรมีมาตรการดำเนินการในการควบคุมการตลาดที่เข้มงวด เพื่อส่งเสริมการบริโภคอย่างปลอดภัยและมีข้อมูลประกอบการตัดสินใจ

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Knowledge, Attitudes, and Practices on Vitamin and Dietary Supplement Use Among Thai Adolescents and Young Adults: A Systematic Review of an Exiting Trends, Determinants, and Public Health Implications

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Abstract

Vitamin and dietary supplement use increasingly among Thai adolescents and young adults driven by many factors including lifestyle trends, marketing, and information of health benefits. However, from limitation of health literacy, self-directed consumption without instruction from professional, these lead to a public health take a consideration. This study aims for an evidence on the knowledge, attitudes, and practices (KAP) also to identify key determinants, health implications, and policy considerations. A systematic review was conducted following PRISMA guidelines, with searches of PubMed, Scopus, Web of Science, ThaiJO, and Google Scholar for studies published between January 2000 and July 2025. Eligible studies focused on KAP or determinants of supplement use in Thai adolescents (10-19 years) and young adults (20-24 years), and data were extracted and synthesized, narratively.

From the study results, vitamin and dietary supplement use was prevalent, often motivated by beauty ideals, peer influence, and targeted marketing rather than a clinical need. Knowledge was variable, with common misconceptions regarding benefits and safety. Attitudes were generally positive, with perceived health improvement as a key driver. Practices included high rates of self-purchase and online ordering, often without professional advice. Reported health implications ranged from perceived benefits to potential adverse effects. Policy analysis highlighted limited regulation of marketing claims and insufficient targeted public health interventions.

Self-directed supplement use among Thai adolescents and young adults requires a need for enhanced health literacy, evidence-based education, and stricter marketing regulation to ensure safe and informed consumption.

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Introduction

Over the past few decades, Thailand has experienced a profound nutrition and health transition driven by rapid urbanization, economic development, and lifestyle changes. Traditional diets based on rice, vegetables, and fresh production have gradually shifted toward Westernized eating patterns, characterized by higher intake of processed foods, animal products, sugar, and

fats⁽¹⁾. These shifts mirror global patterns observed across many middle- and high-income settings, where increasing availability of ultra-processed foods has been linked to rising noncommunicable disease burdens. This transition has contributed to rising rates of overweight, obesity, and diet-related chronic diseases among both adults and youth^(1,2). Among adolescents and young adults, the growing consumption of convenience foods, fast food, and ready-to-eat products is further reinforced by busy lifestyles, peer influences, and aggressive food marketing particularly through social media platforms⁽²⁾. Comparable dynamics have been documented internationally, underscoring the cross-border impact of digital marketing on youth dietary choices.

Parallel to these dietary shifts, interest in vitamins and dietary supplements (VDS) has risen substantially among young people. Drivers include heightened health awareness, beauty and body image concerns, pressure to enhance academic and athletic performance, and exposure to online advertising and influencer marketing^(3,4). Similar demand surges have been reported in North America, Europe, and East Asia, suggesting that youth-oriented supplement consumption is part of a broader global wellness and appearance-focused trend. Although VDS are often perceived as a convenient way to improve health, prevent illness, or enhance appearance, inappropriate or excessive use especially without professional guidance can lead to adverse effects, nutrient toxicity, and unnecessary financial burden^(4,5). These safety concerns parallel international warnings that unsupervised supplement use can pose risks and may not substitute for balanced diets.

Evidence from studies among Thai nursing and health sciences students shows that while nutritional knowledge is moderate to good, gaps remain in understanding safe dosage, recommended daily allowances, and potential interactions with medications^(4,5). Attitudes toward supplementation are generally positive, but actual practices often diverge from recommended guidelines, with patterns shaped by body image ideals, weight control behaviors, and social media exposure^(3,6). This knowledge–practice gap is consistent with observations in other countries where adolescent health literacy is challenged by pervasive marketing and peer norms. These findings highlight a mismatch between perceived and evidence-based health behaviors, reflecting limited functional and critical health literacy in this population.

Given the increasing prevalence of self-directed VDS use and its potential health implications, there is an urgent need to systematically synthesize evidence on this issue. Positioning the Thai experience within the international literature can clarify which determinants are context-specific and which reflect global forces thereby informing both national and cross-country policy learning. Understanding the prevalence, motivations, and determinants of supplement use as well as common misconceptions and risks can inform targeted public health strategies, regulatory measures, and educational interventions. This review therefore aims to (1) describe current trends and patterns of VDS consumption among Thai adolescents and young adults, (2) identify socio-demographic, psychological, behavioral, and environmental determinants, (3) assess knowledge, attitudes, and practices (KAP), and (4) highlight implications for health literacy, policy, and safe supplement use.

This systematic review followed PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines. A comprehensive search was conducted in PubMed, Scopus, Web of Science, ThaiJO, and Google Scholar for English- and Thai-language studies published between January 2000 and July 2025, using keywords related to vitamins, dietary supplements, knowledge, attitudes, practices, adolescents, young adults, and Thailand. Eligible studies included Thai adolescents (10–19 years) and/or young adults (20–24 years), assessed KAP or determinants of supplement use, and employed observational or qualitative designs. Two reviewers independently screened titles, abstracts, and full texts, with disagreements resolved by consensus.

Literature Review

1. Nutrition and Health Transition in Thailand, over the past few decades, Thailand has undergone a profound nutrition and health transition driven by rapid economic growth, urbanization, and globalization⁽¹⁾, comparing with traditional life style for food, in the past, diet was centered on rice, vegetables, fruits, legumes, and moderate amounts of fish, with limited intake of animal fats and processed foods.

This transition is marked by a reduction in the consumption of whole grains, fresh fruits, and vegetables, and a significant increase in refined carbohydrates, processed foods, sugar-sweetened beverages, and high-fat animal-based products⁽²⁾. Urbanization has facilitated the expansion of convenience stores, fast-food chains, and online food delivery services, making high-calorie and nutrient-poor foods more accessible and affordable for young people⁽⁷⁾ leading to double burden of malnutrition, persistent micronutrient deficiencies in vulnerable groups alongside rising rates of overweight, obesity, and diet-related non-communicable diseases (NCDs) such as type 2 diabetes, cardiovascular diseases, and certain cancers⁽⁸⁾. Adolescents and young adults are particularly affected due to increased exposure to aggressive food marketing, peer influence, and social media trends promoting both unhealthy foods and dietary supplements⁽⁹⁾.

2. Current Trends in Vitamin and Dietary Supplement Use, in recent years, Thailand has witnessed a marked increase in vitamin and dietary supplement (VDS) consumption among adolescents and young adults, reflecting both global and domestic trends in health consciousness, body image ideals, and consumer marketing^(4,5).

Prevalence and Patterns of Use, studies⁽²⁾ indicate that VDS use is common among Thai youth, with prevalence rates varying by gender, age, and socio-economic status. Female adolescents often report higher rates of supplement consumption, particularly products marketed for skin health, beauty, and weight management such as collagen, vitamin C, and glutathione⁽³⁾. Male adolescents and young adults, on the other hand, tend to focus on supplements that support muscle growth, strength, and energy, including protein powders, branched-chain amino acids (BCAAs), and performance boosters⁽⁹⁾.

In urban centers, VDS usage is facilitated by easy access to products through pharmacies, supermarkets, convenience stores, beauty shops, fitness centers, and online

platforms⁽⁷⁾. Social media and e-commerce have become dominated distribution channels, with influencers and celebrity endorsements shaping brand preference and perceived value⁽²⁾.

Types of Supplements Consumed, the most popular supplements among Thai adolescents and young adults include: 1) Vitamins and minerals: Vitamin C (for immunity and skin), multivitamins, calcium, iron, zinc⁽⁵⁾ 2) Protein supplements: Whey protein, casein, soy protein for sports and fitness goals⁽⁹⁾ 3) Beauty-related supplements: Collagen, glutathione, and antioxidant blends for skin fairness and anti-aging⁽⁴⁾ and 4) Herbal and natural extracts: Garcinia cambogia for weight control, ginseng for energy, turmeric for anti-inflammatory purposes⁽²⁾

Motivations for Use, the decision to consume VDS among young people is influenced by multiple overlapping motivations: 1) Preventive health; boosting immunity, preventing illness, maintaining energy⁽¹⁰⁾, 2) Aesthetic goals; improving skin clarity, lightening skin tone, anti-aging⁽⁴⁾, 3) Performance enhancement; improving athletic ability, muscle strength, academic concentration⁽⁹⁾, and 4) Compensating for poor diets; addressing perceived nutritional gaps due to irregular eating patterns or fast-food consumption⁽²⁾.

Trends in Consumption Behavior, consumption patterns often reflect episodic or event-driven use. For example, students may increase supplement intake during exam periods for concentration or in preparation for sports competitions for energy and recovery⁽¹¹⁾. Others use supplements, seasonally, such as higher vitamin C consumption during flu season⁽¹⁰⁾. The dose and duration of use vary, widely, with some youth following product labels and others exceeding recommended amounts based on peer advice or online claims⁽²⁾. This significant portion of purchases occur without medical or nutritional consultation, relying instead on social networks and online reviews⁽⁷⁾.

Emerging Market Influences, the Thai supplement industry has adapted rapidly to these trends, with active marketing campaigns targeting adolescents through TikTok, Instagram, and YouTube⁽²⁾. The growth of cross-border e-commerce has also expanded access to international brands, some of which bypass domestic safety and quality regulations⁽⁸⁾.

3. Determinants of Supplement Consumption

3.1 Socio-Demographic Factors, several studies indicate that gender, age, and socio-economic status are consistent predictors of VDS use. Female adolescents tend to have higher consumption rates, often motivated by beauty and skin health goals^(3,4). Young adults, particularly university students, may exhibit greater autonomy in purchasing supplements, driven by perceived health maintenance and academic performance benefits⁽⁵⁾. Socio-economic status also plays a significant role. Adolescents from higher-income households are more likely to afford premium supplements, including imported or branded beauty-products⁽²⁾, while those from lower-income backgrounds may opt for locally available or single-nutrient supplements such as vitamin C or iron⁽⁹⁾. Urban residents, with better access to pharmacies, supermarkets, and online platforms, show markedly higher consumption than their rural counterparts⁽⁷⁾.

3.2 Behavioral and Lifestyle Factors, dietary habits and physical activity levels influence supplement use patterns. Adolescents with irregular eating schedules, frequent fast-food

consumption, and low fruit and vegetable intake are more likely to use supplements as a perceived means to “compensate” for nutritional gaps⁽²⁾. participation in sports or fitness activities is another determinant, especially among young men. Gym-goers and athletes often consume protein powders, amino acids, and performance-enhancing supplements to improve endurance, muscle recovery, and strength⁽⁹⁾. Additionally, students preparing for exams may increase the use of products marketed for mental focus and energy⁽¹¹⁾.

3.3 Psychological and Cognitive Factors, perceptions of health, body image, and self-efficacy significantly drive supplement consumption. Adolescents with high health consciousness are more likely to use multivitamins or herbal supplements for preventive health⁽¹⁰⁾. In contrast, those influenced by beauty ideals, particularly fair skin, slimness, and youthfulness, are drawn to collagen, glutathione, and skin-brightening products⁽⁴⁾. Risk perception also plays a role; young people who believe their diet is inadequate or who feel more susceptible to illness are more inclined to take preventive supplements⁽⁵⁾. Peer influence and the desire to conform to social norms within friend groups can further encourage regular use⁽⁷⁾.

3.4 Cultural and Social Influences, Thailand’s cultural emphasis on appearance, wellness, and social status reinforces the appeal of supplements, especially those associated with visible results such as clearer skin or enhanced physique⁽⁸⁾. Social media platforms amplify these cultural drivers by normalizing daily supplement routines, often showcased by influencers and celebrities⁽²⁾. Peer testimonials, and online reviews frequently shape purchasing decisions, sometimes more strongly than scientific evidence⁽⁷⁾. In addition, certain supplements are linked to cultural practices and traditional beliefs in herbal remedies, creating a bridge between modern consumerism and long-standing traditions⁽²⁾.

3.5 Environmental and Market Factors, the Thai supplement market is highly competitive, with active advertising strategies targeting adolescents and young adults. Accessibility through e-commerce platforms, convenience stores, and fitness centers lowers barriers to purchase⁽⁷⁾. The rapid growth of cross-border online shopping has expanded access to foreign brands, including some with questionable safety and efficacy profiles⁽⁸⁾. Regulatory gaps such as limited enforcement of marketing claims and insufficient public education further contribute to high consumption rates⁽¹⁾. In some cases, misleading advertisements promote supplements as alternatives to a balanced diet, reinforcing misconceptions about their necessity⁽⁵⁾.

4. Knowledge and Misconceptions, knowledge regarding vitamin and dietary supplement (VDS) use among Thai adolescents and young adults is often fragmented, with varying degrees of understanding about their benefits, recommended dosages, and potential risks. Many young consumers possess a general awareness that vitamins and supplements can support health, improve skin appearance, or boost immunity^(3,5), yet this knowledge is frequently based on marketing claims, peer advice, and social media content rather than evidence-based health information^(2,7). While some adolescents recognize the importance of micronutrients such as vitamin C for immunity or calcium for bone health⁽¹⁰⁾, they often lack understanding of safe dosage limits, the potential for overdose, and interactions with medications⁽²⁾. Misconceptions are widespread, including beliefs that supplements can fully replace a balanced diet, prevent all illnesses, or yield instant physical and cosmetic results^(4,9).

The influence of beauty and body image ideals reinforces the perception that certain supplements such as collagen, glutathione, or herbal slimming products are essential for attractiveness, despite mixed or insufficient scientific evidence^(8,11). Furthermore, trust in product branding and packaging often outweighs critical evaluation of ingredient lists or safety certifications, leaving consumers vulnerable to misleading claims and substandard products⁽¹⁾. Some students also misunderstand the role of supplementation in academic performance, assuming that products marketed for “brain health” or “energy” can significantly enhance cognitive abilities during exam periods⁽¹¹⁾.

5. Attitudes Toward Supplement Use, attitudes toward vitamin and dietary supplement (VDS) use among Thai adolescents and young adults are shaped by a combination of health beliefs, beauty ideals, lifestyle aspirations, and social influences. Many young consumers perceive supplements as an essential part of maintaining or enhancing health, particularly for boosting immunity, improving skin complexion, and compensating for perceived dietary deficiencies^(3,5). This positive orientation is reinforced by a widespread belief that supplements are inherently safe and beneficial if taken, regularly^(2,10). Aesthetic motivations are particularly strong among female adolescents, who often associate products such as collagen, glutathione, and vitamin E with attractiveness, fairness, and youthful appearance^(4,8). Male adolescents, while less influenced by beauty norms, frequently adopt a performance-focused attitude, viewing protein powders, amino acids, and energy boosters as necessary tools for sports performance and physical fitness⁽⁹⁾. Social media platforms and celebrity endorsements further normalize supplement use, creating a perception that it is both fashionable and a marker of self-care and social status^(2,7). However, these generally favorable attitudes coexist with limited critical assessment; few young users question the scientific validity of health claims or consider potential side effects, and some express skepticism only after experiencing adverse reactions or hearing about counterfeit products⁽¹⁾.

6. Practices and Patterns of Use, practices and patterns of vitamin and dietary supplement (VDS) use among Thai adolescents and young adults reveal diverse behaviors in terms of product choice, frequency, dosage, purchasing channels, and usage context. The most commonly used supplements include vitamin C, multivitamins, calcium, collagen, glutathione, protein powders, and herbal products such as ginseng or turmeric^(4,5). Beauty-oriented supplements, particularly collagen and glutathione, dominate among female adolescents, while male adolescents more often opt for protein powders, branched-chain amino acids, and muscle gain formulas⁽⁹⁾. Frequency of consumption varies widely, ranging from daily long-term routines to short-term, goal-specific use such as increased intake during exam periods, sports competitions, or seasonal illness outbreaks^(10,11). Dosage practices often lack medical guidance, with many relying on product labels, peer recommendations, or online influencers, leading to risks of overconsumption or inappropriate combinations^(2,7). Purchasing behaviors show a strong preference for easily accessible retail channels such as convenience stores, supermarkets, pharmacies, and beauty shops, as well as a growing shift toward e-commerce and social media platforms that offer rapid delivery and promotional bundles⁽²⁾. Social media sellers often provide unverified health claims and bundle supplements

with skincare or weight-loss products to appeal to young consumers⁽⁸⁾. Peer networks also influence product selection, with adolescents often sharing or gifting supplements within friend groups⁽¹¹⁾. Patterns of use further reflect Thailand's nutrition and health transition, with many adolescents adopting supplements as a routine "health insurance" against poor dietary habits rather than as part of a balanced diet⁽¹⁾.

Despite high prevalence of use, self-monitoring and professional consultation are rare; few adolescents seek medical advice before starting supplementation, and even fewer undergo follow-up evaluations to assess necessity or side effects⁽¹⁰⁾. Some report adjusting or stopping supplement intake only after experiencing adverse effects such as gastrointestinal discomfort, allergic reactions, or skin problems⁽²⁾. Seasonal and situational patterns are also evident vitamin C and multivitamin sales peak during cold and flu seasons, while slimming supplements and detox products surge before school breaks or special events⁽⁴⁾.

7. Health Implications, the health implications of vitamin and dietary supplement (VDS) use among Thai adolescents and young adults are complex, encompassing both potential benefits and significant risks. On the positive side, appropriate supplementation can help address micronutrient deficiencies common in this age group, such as inadequate intake of calcium, vitamin D, iron, and vitamin C, which are linked to bone health, immune function, and overall growth^(1,5). For adolescents with limited dietary diversity, particularly those with high fast-food consumption and low fruit and vegetable intake, supplementation may serve as a short-term compensatory measure⁽²⁾. Sports and physically active youth may benefit from targeted products like protein supplements or electrolyte formulations to support training recovery and performance⁽⁹⁾.

However, the risks associated with inappropriate or excessive use are substantial. Unsupervised self-dosing often based on influencer marketing or peer advice can lead to vitamin and mineral toxicity, such as hypervitaminosis A, excess iron accumulation, or high-dose vitamin C-induced kidney stones^(2,10). Combining multiple supplements without professional oversight increases the risk of harmful interactions, especially when products contain overlapping ingredients or are taken alongside prescription medications⁽⁷⁾. The widespread use of beauty-oriented supplements, such as collagen, glutathione, and skin-whitening herbal products, raises concerns about long-term safety and efficacy, as many of these products lack robust clinical evidence and may be adulterated with undeclared or unsafe substances^(4,8). Psychological health can also be affected; overreliance on supplements to achieve beauty or body image goals may reinforce unhealthy self-perception, increase anxiety about physical appearance, and encourage disordered eating behaviors⁽³⁾. Furthermore, some adolescents delay seeking medical care for health issues under the mistaken belief that supplements alone can prevent or treat illnesses⁽¹¹⁾. The unregulated online marketplace exacerbates these risks by facilitating access to counterfeit or unregistered products, some of which have been found to contain harmful contaminants⁽¹⁾.

8. Policy, Regulation, and Public Health Interventions, policy, regulation, and public health interventions of vitamin and dietary supplement (VDS) use in Thailand remain fragmented and inconsistently enforced, creating both opportunities and challenges for

safeguarding adolescent health. The Thai Food and Drug Administration (FDA) under the Ministry of Public Health regulates supplements as “health foods” rather than pharmaceutical drugs, meaning that products do not undergo the same rigorous pre-market clinical evaluation required for medicines⁽¹⁾. While manufacturers must register products, declare ingredients, and comply with labeling requirements, enforcement is often limited, particularly in the rapidly growing online marketplace where counterfeit, unregistered, or adulterated supplements are easily accessible^(2,8). Marketing oversight remains a pressing issue. Many supplement advertisements, especially on social media use exaggerated or unsubstantiated claims, celebrity endorsements, and before after imagery to appeal to youth^(4,11). Although Thai law prohibits false or misleading health claims, the monitoring of online platforms is resource-intensive, and penalties for violations are often insufficient to deter repeat offenders⁽²⁾. The lack of systematic consumer education further compounds the problem, as adolescents often rely on marketing content and peer recommendations rather than verified health information⁽⁷⁾. From a public health perspective, interventions should aim to balance accessibility with safety. School-based nutrition and health literacy programs can be effective platforms for integrating accurate, age-appropriate education on supplement use, addressing both benefits and potential risks^(9,10). Public awareness campaigns could leverage digital platforms popular among adolescents to disseminate evidence-based messages, counteract misinformation, and promote critical thinking about marketing claims⁽⁵⁾. Additionally, expanding regulatory surveillance to include AI-driven monitoring of online sales, establishing a publicly accessible database of verified supplements, and strengthening penalties for non-compliance could reduce the circulation of unsafe products⁽¹⁾. Collaborative approaches between government agencies, schools, healthcare providers, and youth organizations could further enhance the effectiveness of interventions. For example, partnerships with pharmacists and primary care clinics could enable free or low-cost consultations before starting supplementation, while community-based initiatives could encourage dietary improvements as a first-line approach before considering supplements⁽³⁾.

Findings

This systematic review aims to synthesize national and international evidence on vitamin and dietary supplement (VDS) use among Thai adolescents and young adults, with a focus on:

1. Describing current trends in VDS consumption, including prevalence, types of supplements used, and patterns of use in this population.
2. Assessing knowledge, attitudes, and practices (KAP) related to VDS use, identifying common misconceptions and gaps in nutritional understanding.
3. Identifying determinants socio-demographic, psychological, behavioral, and environmental factors that influence VDS use.
4. Evaluating public health implications of VDS consumption, including potential benefits, risks, and the role of regulation, health promotion, and education in ensuring safe and informed use.

From the systematic review conducted independently by the two reviewers, Reviewer 1 identified a total of 82 studies, while Reviewer 2 identified 76 studies during the search

process. After applying the eligibility criteria and resolving discrepancies by consensus, 11 studies were included in the final analysis. The findings were synthesised into eight determinants.

1. Nutrition and Health Transition in Thailand

The combination of changing food environments, evolving health perceptions, and active commercial marketing forms the backdrop against which supplement consumption behaviors emerge and persist.

2. Current Trends in Vitamin and Dietary Supplement Use

The current trend in VDS use among Thai adolescents and young adults is characterized by increasing prevalence, diverse product selection, and strong marketing influence the absence of adequate evidence-based education on safety and necessity.

3. Determinants of Supplement Consumption

Vitamin and dietary supplement (VDS) use among Thai adolescents and young adults is shaped by a complex interplay of socio-demographic, behavioral, psychological, cultural, and environmental factors. These also affect the type, frequency, and duration of use.

4. Knowledge and Misconceptions

Overall knowledge of vitamin and dietary supplement use among Thai adolescents and young adults was not enough and uneven. Although many understood basic functions of common nutrients, most lacked awareness of safe dosages, potential side effects, product interactions, and evidence-based indications. Misconceptions were widespread, including beliefs that supplements can replace balanced diets, that high-dose vitamin C prevents all illnesses, and that collagen or glutathione directly whitens skin. Marketing messages, peer influence, and online content were primary information sources, leading to overconfidence in product safety and frequent self-directed use without professional guidance. These gaps in understanding contribute to inappropriate or excessive supplement consumption in this population.

5. Attitudes Toward Supplement Use

Attitudes tend to favor regular use, sustained by both personal aspirations and external influences.

6. Practices and Patterns of Use

Practices illustrate a supplement culture that is highly habitual, socially reinforced, and commercially driven.

7. Health Implications

From a public health perspective, while moderate, evidence-based supplement use can be beneficial in targeted cases, the current trends of commercially driven, perception-based consumption among Thai adolescents highlight an urgent need for stronger regulation, consumer education, and integration of supplementation guidance into school health programs.

8. Policy, Regulation, and Public Health Interventions

Ultimately Strengthening policy frameworks, improving regulatory enforcement/re-enforcement, and embedding public health interventions within education systems are critical to addressing the current patterns of VDS use and safeguarding the long-term health of Thai adolescents and young adults.

Discussion

This systematic review reveals that vitamin and dietary supplement (VDS) use among Thai adolescents and young adults is widespread, with patterns shaped by nutritional, aesthetic, and social drivers. While some consumption reflects a legitimate need to address dietary gaps such as insufficient calcium, vitamin D, and iron intake most reported usage is not clinically guided and is instead influenced by beauty ideals, peer behavior, and social media marketing^(1,2). The findings indicate a tendency toward self-directed and commercially influenced supplementation, raising concerns about misuse and potential health risks.

The review finds vitamin C, multivitamins, calcium, collagen, glutathione, and protein powders to be the most frequently consumed products. Beauty-oriented products are dominant among female users, while male users favor supplements linked to sports performance^(4,5). The popularity of collagen and glutathione reflects a broader beauty-driven consumption culture in Thailand, where fair skin and youthful appearance are socially valued⁽⁸⁾. The seasonal increase in vitamin C use often during cold and flu seasons suggests perceived preventive benefits, even when clinical evidence does not fully support high-dose supplementation for illness prevention⁽²⁾. These trends are consistent with Thailand's nutrition transition, where modern urban lifestyles have shifted eating habits toward convenience foods, prompting consumers to use supplements as a perceived compensation for poor dietary quality⁽¹⁾.

For determinants influencing supplement consumption, I was found that there are multiple determinants including age, gender, socioeconomic status, lifestyle, body image perception, peer influence, and exposure to marketing. Female adolescents are more likely to use supplements for beauty enhancement, while males often associate use with physical performance and body mass gains^(9,10). Higher-income groups tend to purchase premium or imported supplements, frequently via online platforms⁽¹¹⁾. These determinants align with health behavior models, such as the Health Belief Model, where perceived benefits (beauty, fitness, immunity) and cues to action (advertising, peer use) strongly shape health-related decisions⁽⁷⁾. Social media amplifies these determinants by providing constant exposure to influencer-endorsed products, often without balanced health information⁽⁴⁾.

Knowledge levels among Thai adolescents and young adults are mixed. While most can identify the basic function of vitamins and minerals, many hold misconceptions for example, believing high-dose vitamin C can prevent all diseases or that collagen directly whitens skin⁽³⁾. Attitudes are overwhelmingly positive, with supplements often viewed as "health insurance" against poor diet or a shortcut to beauty goals⁽²⁾. Practices show a reliance on peer and online advice, with minimal consultation from healthcare professionals before starting supplementation⁽¹⁰⁾. These results reflect gaps in functional and critical health literacy adolescents may access and understand basic product information but lack the skills to critically evaluate marketing claims or assess the necessity and safety of use⁽⁵⁾. This gap is compounded by limited public health messaging tailored to youth audiences⁽¹¹⁾.

The patterns observed in Thailand mirror findings from other Asian countries experiencing similar nutrition transitions, such as South Korea and Japan, where beauty and body image are strong motivators for supplement use among youth. However, compared to

Western contexts where supplementation often targets sports performance or disease prevention the Thai market shows a more prominent aesthetic and social prestige orientation⁽¹⁾. The persistence of misconceptions despite product labeling suggests that marketing cues often override scientific messaging, a phenomenon documented in other adolescent health behavior studies⁽⁷⁾.

Attitudes toward supplement Use, but they are rarely grounded in comprehensive, evidence-based understanding of VDS safety and efficacy.

Practices and patterns of use, but often detached from evidence-based health guidance.

Conclusion

Vitamin and dietary supplement use among Thai adolescents and young adults is widespread, driven more by aesthetic goals, peer influence, and marketing than by clinical need. Persistent knowledge gaps and misconceptions contribute to self-directed use without professional guidance. Strengthening health literacy, enforcing accurate marketing, and integrating public health education are essential to ensure safe and evidence-based supplement use in this population.

Recommendation

To address the widespread yet often misguided use of vitamin and dietary supplements among Thai adolescents and young adults, targeted public health strategies are needed. Schools and universities should integrate evidence-based nutrition and supplement education into their curricula to improve health literacy and correct misconceptions. Regulatory authorities must strengthen oversight of supplement advertising, particularly on social media, and enhance monitoring of online sales to prevent the distribution of unsafe or unregistered products. Public awareness campaigns should promote consultation with healthcare professionals before beginning supplementation and emphasize balanced diets as the primary source of essential nutrients. Finally, sustainable solutions will require multi-sector collaboration among government agencies, educational institutions, healthcare providers, and community organizations to create an environment that supports safe and informed supplement use.

Policy recommendation

1. This combination heightens the need for targeted public health interventions and regulatory oversight.
2. Understanding these factors is critical for designing effective health promotion strategies and regulatory policies.
3. Collectively, these gaps and misconceptions reveal the need for targeted public health education to improve scientific literacy, encourage informed decision.

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