

# A Review on the Role of Pharmacists in Safe and Rational Use of Dietary Supplement

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**Abstract:** *Increasingly popular worldwide, vitamins, minerals, herbal supplements, and amino acids are all types of dietary supplements which many people use to improve their health and also prevent deficiency diseases, as well as to manage chronic illnesses. Some contributing factors to their growing popularity include: increasing awareness of the importance of health; health-related lifestyle changes; an increase in the use of supplements; and easy access to over-the-counter sources of supplementation (Bailey et al., 2013; Dickinson et al., 2016; Gahche et al., 2017). Similar trends can be observed in India, where many people take dietary supplements without the guidance of a qualified healthcare professional (Patel & Shah, 2020). However, the irrational use of diabetic supplements as well as the lack of proper guidance from qualified healthcare professionals can create significant health risks, including the risk of toxicity, overdose, adverse drug reactions, and drug-supplement interaction (Geller et al., 2018; Sood et al., 2008). Other major concerns include misleading marketing of dietary supplements, self-medication practices, poor or limited consumer knowledge about dietary supplements, and limited monitoring and reporting systems for the safety of dietary supplements (Ventola, 2015; Denham, 2011; Gardiner et al., 2013).*

*The role of pharmacists in helping ensure the rational and safe use of dietary supplements is critical due to their accessibility to patients and their extensive education. Pharmacists are in a unique position to counsel patients on supplement use, evaluate patients' medication profiles to identify drug interactions, and recommend proper evidence-based use of dietary supplements (Kwan et al., 2017; Sharma & Verma, 2022). In addition, pharmacists play an important role in pharmacovigilance by monitoring adverse reactions from the use of dietary supplements and reporting these events therefore enhance patient safety and overall healthcare outcomes (WHO, 2019; FDA, 2020). This review discusses the necessity of empowering pharmacists*

**Keywords:** *Dietary supplements, Pharmacist role, Rational use, Patient safety, Drug-supplement interactions, Self-medication, Pharmacovigilance, Patient counseling, Evidence-based practice, Adverse drug reactions, Healthcare professionals, Regulatory aspects*

## I. INTRODUCTION

Dietary Supplements (like vitamins and minerals) are popular for improving health and preventing deficiencies/diseases. They have become even more popular due to increased health awareness, changing lifestyles, and the ability to obtain without a prescription. But due to not being used rationally or under supervision can put a patient at serious risk of toxicity or drug interactions and/or create adverse effects; more-so in patients taking multiple medications. Additionally to irrational, unsupervised use is misuse due to misleading advertising, self-medicating with an inappropriate product incorrectly without the knowledge of what would be the appropriate dose or duration.

Pharmacists, as an accessible and knowledgeable source of health care, play an important role in assuring safe e/rational use of dietary supplements by providing counseling to patients, evaluating their medication history, and assisting in determination of potential interactions, and promoting evidence based use of these products. Furthermore, pharmacists participate in pharmacovigilance processes that monitor and report adverse events associated with the use



of dietary supplements. In strengthening the pharmacist role through education/awareness may significantly improve patient safety and resultant therapeutic outcomes.

AIM – To review the role of pharmacists in ensuring the safe and rational use of dietary supplements

### **OBJECTIVE**

1. To look over published research on dietary supplements and the safety issues that come with them.
2. To look into what pharmacists do to make sure that dietary supplements are used safely and sensibly.
3. To assess the role of pharmacists in advising and educating patients about dietary supplements.
4. To find common problems that come up when people use dietary supplements in ways that don't make sense, like self-medication, overdose, and drug-supplement interactions.
5. To evaluate the significance of pharmacists in overseeing and documenting adverse effects associated with dietary supplements (pharmacovigilance).
6. To look at Indian and international studies that talk about how pharmacists handle dietary supplements

### **METHODOLOGY**

Study used a review-based approach (a systematic method of collecting, evaluating, and interpreting previously published scientific literature on dietary supplements and the role of pharmacists in using supplements safely and rationally). A qualitative narrative review design was used to evaluate and summarize the results of both Indian and international studies within three to four months. The review focused on the areas of supplement safety, misuse, rational use, pharmacist counselling and pharmacovigilance.

Relevant data were obtained from credible sources, such as Google Scholar, PubMed and ScienceDirect, by applying keywords to search for studies published between 2000 and 2010; strict inclusion and exclusion criteria were established in order to exclude studies that were not peer-reviewed, recent or in English (only peer-reviewed literature was to be included). Six studies were ultimately selected for further examination on a wide range of topics, including usage patterns, adverse effects, and the pharmacist's role.

Qualitative analysis was used to categorise key findings from each study into common themes, including drug/supplement interactions, awareness of patients about supplements and the role of the pharmacist. All ethical standards were maintained by providing reference to all sources used in this paper. The final limitation of this study was due to the limited quality of the studies selected and restricted access to many of the databases containing sufficient literature for this review.

### **RESULTS**

Based on the review of six studies, the results showed an increase in the overall use of dietary supplements for:

- Healthy living and disease prevention;
- Managing diseases and preventing nutrient deficiencies.

Various people take dietary supplements because of the benefits associated with taking them, such as improved immunity or physical performance. However, most people take dietary supplements without consulting with a healthcare professional.

The increasing number of people taking dietary supplements creates several public health concerns, including:

- Lack of regulation or supervision of the products;
- Potential for adverse effects from dietary supplements (e.g., toxicity and/or allergic reaction);
- Issues regarding product quality and contamination;
- Interaction between supplements and medications, which could potentially decrease the effectiveness of the drug or increase the risk of toxicity, especially in patients taking multiple drugs; and
- Low level of awareness by patients about the risk of taking both supplements and medications.



The pharmacists' responsibilities in ensuring that dietary supplements are used properly and safely are also emphasized. As accessible healthcare providers, pharmacist's role in providing education to patients, counseling patients about dietary supplements, and identifying potential drug/supplement interactions is crucial in promoting the safe, effective, and rational use of dietary supplements. By evaluating patients' medical history and use of medications, pharmacist's can recommend appropriate alternatives to dietary supplements for patients based on his/her individual medical condition. Additionally, by monitoring and reporting adverse reactions to dietary supplements, pharmacist's play an important role in pharmacovigilance because they assist in the early detection of safety issues. Ultimately, the pharmacist's education and ongoing professional development are fundamental to improving patient awareness, decreasing misuse, and enhancing positive health-related outcomes.

## **DISCUSSION**

The review outlines the rapid increase in the use of supplements by members of the community with the intention of improving health or preventing illnesses. Many of the individuals who use supplements have done so on their own without consulting a healthcare provider for advice. Some of these individuals may assume that since the products are "natural," that they have no side effects; however, the literature reveals that inappropriate use can result in side effects, toxicity, concerns regarding product quality, and negative drug-supplement interactions, which may produce a decrease in the effectiveness of the medications or increase the risk of adverse side effects.

Pharmacists play an essential role in ensuring the safe and appropriate use of dietary supplements by the members of the community. Of all the healthcare providers, pharmacists are the most accessible to patients in their community and are able to provide counseling to patients, enhance the patients' knowledge, identify inappropriate use, and detect potential interactions between supplements and drugs. Pharmacists are essential contributors to patient education as well as pharmacovigilance, as evidenced by the outcomes of these activities. The participation of pharmacists is necessary to promote safe use of dietary supplements and to improve patient safety.

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