

KNOWLEDGE AND PRACTICES OF PHARMACY PROFESSIONALS TOWARDS DIETARY SUPPLEMENTS: A CROSS-SECTIONAL STUDY IN COMMUNITY PHARMACIES OF LALITPUR

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Abstract

Background: This study aims to assess the knowledge and practices of pharmacy professionals regarding dietary supplements (DS) in community pharmacies in Lalitpur, Nepal. It also seeks to explore their role in counseling patients on the safe use of DS. **Materials and Methods:** A cross-sectional descriptive study was conducted among 252 pharmacy professionals working in community pharmacies of Lalitpur. Participants were selected through purposive sampling with simple random sampling to ensure representativeness across pharmacies. Data were collected using a structured questionnaire and analyzed using SPSS. Key variables included knowledge, practices, and counseling behavior regarding dietary supplements. Descriptive and inferential statistics were applied to interpret the findings. **Result:** The study found that 97.2% of the respondents had sufficient knowledge about dietary supplements, and 96.8% demonstrated proper practices in their use and recommendation. However, counseling skills were not as well developed, with some pharmacists lacking confidence in providing professional advice on DS. Most counseling occurred during pregnancy (97.2%), childhood (84.9%), and lactation (88.9%). Commonly dispensed supplements included multivitamins, vitamin D, iron, calcium, and folic acid. Despite the overall positive knowledge and practices, a small proportion of participants (2.8%) exhibited insufficient knowledge, and 3.2% showed improper practices. **Conclusion:** The study highlights that while pharmacy professionals in Lalitpur demonstrate adequate knowledge and proper practices regarding DS, there is room for improvement in counseling and patient interaction. Training programs should focus on enhancing pharmacists' counseling skills to ensure better patient care. Increased educational efforts are recommended to align pharmacy practices with the growing consumer demand for dietary supplements.

INTRODUCTION

Dietary supplements (DS) play a significant role in promoting health and well-being by providing essential nutrients, yet concerns persist about their misuse, adverse effects, and interactions with medications.^[1,2] Community pharmacists, being easily accessible healthcare providers, are well-positioned to counsel patients regarding the safe use of DS.^[3] A study in Malaysia reported that 72.5% of pharmacists dispensed DS regularly, but only 42% felt adequately trained to counsel patients on proper use.^[4] Similarly, research conducted in South Korea indicated that only 55% of pharmacy professionals were familiar with drug-supplement interactions, raising safety concerns.^[5]

Studies from various countries show varying knowledge and practices among pharmacists. In Ethiopia, for instance, while 66.7% of pharmacists possessed adequate knowledge, poor counseling practices were common.^[6] Research from Saudi Arabia highlights that although pharmacists were knowledgeable about DS, only moderate engagement was observed in patient counseling.^[7] In Nepal, studies focusing on community pharmacy practices related to DS remain scarce, creating a gap that this study aims to address. The study assesses the knowledge, practices, and counseling behavior of pharmacy professionals in community pharmacies of Lalitpur, Nepal. It aims to explore whether pharmacists are equipped to guide patients on DS use while identifying areas for improvement.

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted over a two-month period in community pharmacies of Lalitpur, Nepal. Ethical approval for the research was obtained from the relevant authorities of the Department of Pharmacy, JF Institute of Health Sciences, Tribhuvan University, Kathmandu, Nepal. Written informed consent was obtained from all participants before data collection.

The study population consisted of 252 pharmacy professionals working in community pharmacies. Purposive sampling was used, followed by simple random sampling to select participants. The sample size was calculated using the Yamane formula, based on a total of 676 retail community pharmacies registered with the Department of Drug Administration (DDA) in Nepal. Only community pharmacies that were operational during the data collection process were included, while hospital, homeopathic, veterinary, and non-health professional pharmacies were excluded.

Data were collected using a structured questionnaire, which was developed following extensive literature review and validated through consultation with research advisors and pilot testing. The questionnaire covered socio-demographic characteristics, knowledge, practices, and counseling behavior regarding dietary supplements. Participants completed the questionnaire independently, and the data were entered into Microsoft Excel for management.

Statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) software. Descriptive statistics, including frequencies and percentages, were used to summarize the data.

RESULTS

A total of 252 pharmacy professionals from community pharmacies in Lalitpur participated in the study. Of these, 68.8% (174) were male and 30.8% (78) were female, with most participants (48.4%) being 25 years or younger. In terms of academic qualifications, 67.2% (170) held a diploma in

pharmacy, 28.9% (73) had a bachelor's degree, and only 3.6% (9) held a master's degree in pharmacy. Regarding professional roles, 58.5% (148) were assistant pharmacists, 34.8% (88) were pharmacists, and 6.3% (16) were classified as *bebasayi*. (Table 1) The majority of participants (69.2%) earned between 15,000–30,000 NPR per month, with 22.1% earning 30,000–50,000 NPR, and 8.3% earning more than 50,000 NPR. [Table 1]

In terms of knowledge, 97.2% (245) of pharmacy professionals demonstrated sufficient knowledge of dietary supplements. Specifically, 98% reported having information on DS dosage and administration, and 93.3% believed additional education on DS should be included in the pharmacy curriculum. However, 79.8% were aware of drug-supplement interactions, and 72.3% had knowledge of contraindications in special patient groups (e.g., hypertensive or renal patients). [Table 2]

Regarding practices, 96.8% (244) demonstrated proper practices in handling dietary supplements. A total of 95.2% reported allotting sufficient time to advise customers, but only 33.2% had studied scientific references on supplements, and 26.6% referred to valid online resources when necessary. Furthermore, 95.6% asked consumers about their medical history before recommending supplements. [Table 2]

Counseling was most frequent during pregnancy (97.2%), childhood (84.9%), and lactation (88.9%). Counseling was provided for various clinical conditions, such as obesity management (88.9%) and cardiovascular disorders (72.6%), but was less frequent for psychiatric disorders (28.2%) and cancer (7.9%). [Table 2]

Commonly dispensed dietary supplements included multivitamins, vitamin D, iron, calcium, folic acid, and probiotics. Less frequently dispensed products included alpha-lipoic acid, ginseng, and herbal tea.

Overall, the results indicate that pharmacy professionals in Lalitpur possess sufficient knowledge and appropriate practices regarding dietary supplements, although areas for improvement remain, particularly in professional counseling and use of scientific resources.

Table 1: Demographics of Pharmacy Professionals

Demographic category	Sub-category	Frequency	Percentage
Gender	Male	174	68.8
	Female	78	30.8
Age	≤ 25 years	122	48.4
	26–35 years	109	43.3
	36–45 years	10	4.0
	≥ 46 years	11	4.4
Educational Qualifications	Diploma in Pharmacy	170	67.2
	Bachelor's Degree	73	28.9
	Master's Degree	9	3.6
Professional Role	Assistant Pharmacist	148	58.5
	Pharmacist	88	34.8
	<i>Bebasayi</i>	16	6.3
Monthly Income	15,000–30,000 NPR	175	69.2
	30,000–50,000 NPR	56	22.1
	> 50,000 NPR	21	8.3

Table 2: Knowledge, Practice, and Counseling Data

Category	Subcategory	Frequency	Percentage
Knowledge Level	Sufficient Knowledge	245	97.2
	Insufficient Knowledge	7	2.8
Practice Level	Proper Practice	244	96.8
	Improper Practice	8	3.2
Counseling by Life Stage	Pregnancy	245	97.2
	Childhood	214	84.9
	Lactation	224	88.9
	Adolescence	150	59.5
	Adulthood	177	70.2
	Geriatrics	151	59.9
Counseling for Clinical Conditions	Athletics	202	80.2
	Obesity Management	224	88.9
	Cardiovascular Disorders	183	72.6
	Psychiatric Disorders	71	28.2
	Cancer	20	7.9
Most Commonly Dispensed Supplements	Multivitamin	252	100.0
	Vitamin D	252	100.0
	Iron	252	100.0
	Calcium	252	100.0
	Omega-3	246	97.6
	Probiotics	234	92.9

DISCUSSION

This study assessed the knowledge, practices, and counseling behaviors of pharmacy professionals regarding dietary supplements (DS) in community pharmacies of Lalitpur, Nepal. The findings show that most participants demonstrated sufficient knowledge and appropriate practices regarding DS, but counseling practices remained inconsistent. Counseling was mainly focused on pregnancy, childhood, and lactation stages—critical life phases where nutritional needs are heightened.^[8,9] However, only a minority of participants reported consulting scientific resources or clinical guidelines, which could limit the quality of their counseling.^[10]

When compared with findings from other countries, the results align with previous studies. In Ethiopia, 66.7% of pharmacists reported adequate knowledge, but poor counseling skills were prevalent among the majority.^[6] Similarly, a survey conducted in Saudi Arabia revealed that although pharmacists had good knowledge, their counseling behavior was only moderately effective.^[7] A study in Australia suggested that pharmacists were more confident in providing general information on DS but lacked expertise in addressing specific drug-supplement interactions, reducing the quality of patient care.^[11]

Limited use of scientific resources, observed in both this study and others globally, is a recurring issue. In the United States, for example, pharmacists reported time constraints and lack of access to updated references as primary barriers to counseling on DS.^[12] In Nepal, the reliance on self-reported knowledge and insufficient training opportunities may contribute to the observed gaps in practice.^[13] This finding is consistent with a study from Pakistan, where community pharmacists identified the need for ongoing professional education on DS.^[14]

Despite these challenges, the study's strength lies in its robust methodology, including a well-defined sample size drawn from registered pharmacies. However, the study was limited to Lalitpur, which may restrict generalizability to other regions. Additionally, the reliance on self-reported data introduces the possibility of response bias, where participants may overestimate their knowledge and practices.^[15] Future research could explore strategies to improve pharmacists' access to scientific resources and promote more effective counseling behaviors to ensure optimal patient care.

CONCLUSION

This study aimed to assess the knowledge, practices, and counseling behaviors of pharmacy professionals toward dietary supplements in community pharmacies of Lalitpur, Nepal. The findings indicate that while the majority of pharmacy professionals possess adequate knowledge and demonstrate proper practices regarding dietary supplements, gaps remain in their professional counseling abilities. Counseling efforts are primarily focused on specific life stages such as pregnancy, childhood, and lactation, but are less comprehensive across other clinical conditions. Furthermore, limited use of scientific references suggests the need for additional education and resources to support evidence-based counseling.

In conclusion, although pharmacy professionals are well-equipped with knowledge and practices, there is a clear need for enhanced training focused on counseling skills and access to reliable resources. Strengthening these areas will help pharmacists provide better guidance to patients, ensuring safe and effective use of dietary supplements.

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