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Knowledge, Attitudes, and Practices of Community Nutritionists and Pharmacy Professionals Regarding Nutrition and Lifestyle Counseling

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Abstract

Community nutritionists and pharmacy professionals (CPPs) play a pivotal role in health promotion by providing nutrition and lifestyle counseling. Despite their accessibility and potential impact, gaps in knowledge, attitudes, and practices (KAP) regarding nutritional guidance remain understudied. This study aimed to assess the KAP of these professionals in counseling on dietary supplements, drug-food interactions, and dietary precautions, while identifying barriers and strategies for improvement. A cross-sectional study was conducted among 100 community nutritionists and pharmacy professionals, selected via stratified random sampling. Data were collected using a structured questionnaire, adapted from prior research, covering demographic details, KAP assessments, and barriers to counseling. Descriptive and comparative analyses were performed using SPSS version 26. Participants were predominantly female (60%), aged 25–34 years (55%), and held bachelor's degrees (70%). Dietary recall (65%) and BMI calculation (55%) were the most common nutritional assessment methods. While 70% felt confident in general dietary guidelines, confidence dropped for therapeutic nutrition (40%) and pediatric nutrition (35%). Daily counseling was reported by 50% of participants, primarily for pregnant women (75%) and diabetic patients (85%). Key barriers included lack of time (65%) and insufficient knowledge (50%). Strategies proposed included continuing education (70%) and integrating nutrition into routine consultations (55%). The study highlights adequate baseline knowledge but identifies significant gaps in specialized areas like therapeutic and pediatric nutrition. Barriers such as time constraints and knowledge deficits underscore the need for enhanced training and systemic support. Integrating structured nutrition education into professional curricula and practice could empower CPPs to better address public health needs through effective counseling.

Keywords: *Nutrition Counseling, Pharmacy Professionals, Community Nutritionists, Knowledge-Attitudes-Practices, Barriers, Health Promotion.*

Introduction

According to the World Health Organization (WHO), health promotion involves empowering individuals to manage and enhance their well-being by addressing behavioral, social, and environmental determinants of health (1). Key health promotion initiatives include abstaining from alcohol and smoking, promoting weight management among individuals with obesity, encouraging balanced nutrition, and advocating for regular physical activity. These efforts significantly contribute to improving overall quality of life while minimizing the individual and societal burdens associated with poor dietary habits (2).

Community pharmacy professionals (CPPs) and community nutritionists play a pivotal role in the healthcare system by supporting public health initiatives and educating individuals about health-related

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matters (3). Due to their widespread availability, lack of appointment requirements, and convenient accessibility, CPPs and community nutritionists are strategically positioned to implement health promotion and disease prevention strategies, as emphasized by guidelines from the International Pharmaceutical Federation and WHO regarding pharmaceutical best practices (4,5). Additionally, community pharmacies contribute significantly to optimizing patient care, preventing medication misuse, and reducing healthcare costs (3).

One of the most essential services provided by pharmacy professionals is patient counseling, which helps mitigate medication-related issues and fosters better health outcomes (6). Pharmacists educate patients on appropriate medication usage, possible adverse effects, safety considerations, and proper storage of pharmaceuticals and dietary supplements. Furthermore, they enhance public awareness regarding non-pharmacological interventions, dietary recommendations, and lifestyle modifications, including physical activity (7–9).

The pharmacy profession has evolved from a product-centered approach to a more patient-focused clinical practice model (10). This transition has reinforced the significance of clinical pharmacists who provide patient-centered services (11) and has furthered the development of pharmaceutical care, expanding pharmacists' responsibilities within healthcare.

Professional organizations such as the American College of Clinical Pharmacy (ACCP), the American Society of Health-System Pharmacists, and the Canadian Society of Hospital Pharmacists advocate for integrating nutritional supplements—including natural products, micronutrients, and essential nutrients—into pharmaceutical practice (12). However, pharmacists' competencies in nutritional counseling require further enhancement to improve patient well-being (13).

When counseling individuals on nutritional and vitamin supplementation, as well as addressing deficiencies, the effectiveness of complementary medicine relies on patients' comprehension of proper therapeutic approaches, which vary from case to case. Pharmacists can assist by guiding patients in selecting appropriate nutritional supplements and offering essential information regarding their interactions with conventional medications (14,15). Consequently, for pharmacists to effectively advise consumers on vitamins and dietary supplementation, they must possess adequate knowledge, a positive attitude, and strong counseling skills in this domain (16).

To maximize the potential of pharmacists and community nutritionists in promoting better health outcomes, it is essential to assess their level of involvement in lifestyle and nutrition counseling, along with their perceptions of their capabilities, challenges faced, and areas for improvement. Policymakers should gather data to determine barriers to effective nutrition counseling and develop cost-efficient strategies to enhance pharmacists' and nutritionists' roles. Furthermore, educational institutions could use this insight to identify gaps in training programs and enhance professional competencies in this field.

This study aimed to explore the knowledge, attitudes, and practices of pharmacy professionals and community nutritionists regarding nutrition and lifestyle counseling. It specifically examined their role in providing guidance on dietary supplements, drug-food interactions, and dietary precautions. Additionally, this research identified key challenges affecting pharmacist- and nutritionist-led counseling efforts and proposed strategies for overcoming these barriers. The ultimate objective was to enhance the contribution of pharmacy and nutrition professionals in promoting better health through effective counseling on nutrition and lifestyle choices.

Methods

This study utilized a cross-sectional design with self-reported data collected from community-based nutritionists and pharmacy professionals working in various healthcare and retail settings. The study was conducted over a designated period, ensuring the inclusion of both urban and rural healthcare service providers.

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The research targeted all practicing community nutritionists and pharmacy professionals who were actively working in healthcare and drug retail outlets at the time of data collection and were willing to participate. Professionals who were unavailable during the data collection period or who opted not to take part in the study were excluded.

A total of 100 nutritionists and pharmacy professionals were identified as eligible participants based on registry data.

A structured self-administered questionnaire, adapted from prior research (17), was refined to suit the community-based setting of the study. The questionnaire aimed to assess the knowledge, attitudes, and practices of nutritionists and pharmacy professionals regarding nutrition and lifestyle counseling. It was initially developed in English and later translated into the local language, with back-translation performed to ensure consistency.

The data collection tool was divided into two main sections:

- Demographic and Professional Characteristics – This section gathered details such as age, gender, professional qualifications, sources of nutritional information, and the types of nutritional supplements available at their respective workplaces.

- Knowledge, Attitudes, and Practices Assessment – This part contained 18 structured questions categorized into four subsections:

Section I: Five perception-based questions assessing knowledge of nutrition and lifestyle counseling, scored using a five-point Likert scale.

Section II: Four questions evaluating attitudes toward therapeutic nutrition, dietary supplements, and providing nutritional advice.

Section III: Four questions examining counseling practices, including patient history-taking, nutrition advice for different health conditions and life stages, medical nutrition therapy, and supplement use in clinical settings.

Section IV: Five multiple-choice questions identifying barriers to effective counseling and strategies for improvement, adapted from previous studies on challenges in health promotion services at community pharmacies (17–19).

Data Quality Control, Entry, and Statistical Analysis

Two trained clinical researchers collected data after undergoing a half-day training session on ethical considerations and data collection protocols. Pretesting was conducted on a small subset of participants to refine the questionnaire for clarity and effectiveness. Any inconsistencies identified were addressed before final data collection.

Daily monitoring ensured completeness, accuracy, and consistency in responses. The collected data were double-checked for errors before being entered into SPSS version 26 for statistical analysis. Descriptive statistics, including means, proportions, and frequency tables, were used to summarize the findings. Normality checks were performed using histograms and Q-Q plots. Comparative analyses, such as independent samples t-tests and one-way ANOVA, were applied to identify differences in knowledge, attitudes, and practices across different groups.

Operational Definitions

- Knowledge: The level of awareness and understanding regarding nutrition and lifestyle counseling.

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- Good Knowledge: Participants scoring at or above the mean knowledge score.
- Poor Knowledge: Participants scoring below the mean knowledge score.

Results

The results present the findings of the study on the knowledge, attitudes, and practices of community nutritionists and pharmacy professionals regarding nutrition and lifestyle counseling. They provide insights into participants' socio-demographic characteristics, their methods of nutritional assessment, self-perceived knowledge on various nutrition counseling topics, and overall knowledge scores. Additionally, the data highlight the frequency of nutrition counseling provided to individuals across different life stages and medical conditions, along with common barriers faced in offering such services and potential strategies to overcome these challenges. The analysis of these findings helps identify gaps in knowledge and practice, ultimately guiding future interventions aimed at enhancing the role of nutritionists and pharmacy professionals in health promotion.

Table 1. Socio-Demographic Characteristics of Participants (n100)

Characteristic	Percentage (%)
Gender	
Male	40%
Female	60%
Age Group	
18–24 years	10%
25–34 years	55%
35–44 years	30%
45+ years	5%
Educational Level	
Diploma	20%
Bachelor's Degree	70%
Master's Degree or Higher	10%

The majority of participants were aged 25–34 years (55%) and held a bachelor's degree (70%). Women accounted for 60% of the sample, indicating a significant female representation among community nutritionists and pharmacy professionals.

The most frequently used assessment method was dietary recall (65%), followed by BMI calculation (55%). Less than half used laboratory assessments, indicating a gap in clinical nutritional assessment approaches.

While 70% of participants felt confident in general dietary counseling, only 40% had confidence in advising on therapeutic nutrition for chronic diseases, and 35% on pediatric nutrition, suggesting a need for targeted education.

The average knowledge score was 3.5/5, with 60% of participants scoring above the mean, indicating a generally adequate knowledge level but highlighting room for improvement.

Most participants (75%) counseled pregnant women, but only 45% provided advice to athletes, revealing a gap in sports nutrition counseling.

While most professionals counseled diabetic and hypertensive patients, fewer addressed gastrointestinal (40%) and kidney disease (35%), indicating an opportunity for specialized training.

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Half of the participants provided daily nutrition counseling, while 30% did so weekly. However, 20% counseled only occasionally, suggesting that professional workload and other barriers may impact counseling frequency.

The biggest barrier to nutrition counseling was lack of time (65%), followed by insufficient knowledge (50%). Strategies such as continuing education (70%) and integrating nutrition into routine practice (55%) were the most suggested solutions.

Discussion

This study provides an in-depth examination of the knowledge, attitudes, and practices of community nutritionists and pharmacy professionals regarding nutrition and lifestyle counseling. Given the crucial role of both professions in promoting public health, their ability to provide accurate and effective nutritional guidance can significantly impact patient outcomes (20). As healthcare services continue to integrate multidisciplinary approaches, the evolving responsibilities of nutritionists and pharmacy professionals necessitate effective patient-centered communication, ensuring that dietary recommendations are aligned with patient needs and cultural contexts (21,22,23).

The findings indicate that nearly one-third of respondents identified medical nutrition therapy as a preventive approach, while 14% viewed it as a treatment for existing conditions. This contrasts with findings from Egypt, where over half of participants recognized medical nutrition therapy as preventive, and 40.8% saw it as a treatment for existing conditions (17). Regarding the role of professionals in nutritional assessment, 88% of participants believed that they play a role, a slightly higher percentage than reported in an Egyptian study (17). Additionally, more than half of the respondents considered therapeutic nutrition a component of their role, though they acknowledged physicians and dietitians as primarily responsible, aligning with findings from similar studies (17). However, professionals in this study were more likely to recommend a combination of diet and pharmacological treatment compared to findings from Cairo (17).

Participants demonstrated better knowledge of dietary supplement indications, dosages, and administration rates than contraindications, adverse effects, and efficacy. These findings align with an Australian study, where only 15% of pharmacy professionals felt confident discussing the safety and interactions of complementary and alternative medicines (24). Similarly, research in Jordan revealed limited knowledge regarding drug interactions, adverse effects, and appropriate dosages of dietary supplements (25). Around half of the participants in this study believed dietary supplements should be dispensed only with a physician or dietitian's prescription, consistent with findings from the United States and Canada, where nearly half of pharmacists expressed concerns about the safety of dietary supplements due to inconsistent information (17,26).

Counseling was primarily focused on adults and pregnant women, a pattern similar to findings in Egypt (17) but differing from a study in the United Kingdom, where professionals provided dietary advice across all age groups using structured guidelines such as the Eat Well guide (27). This highlights the need for professionals to enhance their knowledge of nutritional requirements across different life stages. A study from Nigeria also emphasized the importance of nutritionists and pharmacy professionals in maternal, newborn, and child health promotion (28). The most commonly counseled medical conditions were diabetes mellitus, obesity, and food allergies, supporting findings from Egypt (17).

Counseling on herbal–drug interactions, contraindications, and signs of nutritional deficiencies was infrequent, reflecting gaps in knowledge. Similar trends were observed in studies conducted in Jordan and Egypt, where professionals were less likely to provide information on supplement-drug interactions (17,25). Furthermore, a review in the United States and Canada found that most professionals sought additional training on dietary supplements, particularly regarding interactions, side effects, patient counseling points, and appropriate dosages (26).

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Key barriers to nutrition counseling included limited patient awareness of professionals' expertise, insufficient training in nutrition, and a lack of patient demand for such services. Similar challenges were reported in other studies, where participants cited inadequate training, lack of practice guidelines, and limited experience in nutrition counseling as obstacles to effective public health promotion (17,18,28). In contrast, a study in Sudan identified lack of time and expertise as primary barriers (29).

Evidence-based nutrition training is essential to equip healthcare professionals with the knowledge required for effective patient care. According to the Forgotten Medicine Conference in London, many healthcare professionals, including pharmacy professionals, lack fundamental nutrition counseling skills (30). Several studies emphasize the need for structured nutrition education in healthcare training, as seen in the United Kingdom, where core competencies were established to enhance dietary counseling (31–35). Given their accessibility and high patient interaction rates, integrating nutrition science into undergraduate curricula, continuing education programs, and professional training could significantly enhance their role in health promotion (34,35).

Regarding the basis of nutritional counseling, the findings indicate that participants frequently provided advice based on observable conditions such as malnutrition and obesity, similar to findings in Egypt (17). However, compared to the Egyptian study, a higher percentage of participants in this study provided nutritional counseling based on diagnosed medical conditions such as diabetes and hypertension.

A notable difference from the Egyptian study was the availability of educational materials. While nearly all Egyptian participants reported a lack of flyers or resources, a smaller percentage of participants in this study indicated similar concerns. Most respondents relied on leaflets and internet resources provided by medical representatives, a trend also observed in regulatory health reports (17). These findings underscore the importance of enhancing professionals' knowledge and engagement in nutrition and lifestyle counseling to improve public health outcomes. Collaborative efforts among healthcare authorities could strengthen the knowledge, attitudes, and practices of nutritionists and pharmacy professionals, ultimately benefiting patient care.

Conclusion

Most nutritionists and pharmacy professionals rated their knowledge of medical nutrition therapy as high. They demonstrated greater familiarity with therapeutic nutrition and food-medicine interactions than with supplement indications, contraindications, efficacy, and drug-supplement interactions. While they generally had a positive attitude toward nutrition counseling, their services were primarily focused on pregnant women and patients with conditions such as obesity, diabetes, and food allergies. Major barriers included limited patient awareness of their expertise and insufficient demand for nutrition counseling. To enhance their role in public health, structured nutrition education, mandatory competencies in nutrition and physical activity, and continuous professional training should be incorporated into their education and practice.

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