





## Community pharmacy services in Vietnam: Consumer demand for nutrition services in pharmacies

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### ABSTRACT

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#### Keywords

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Community pharmacies play an important role in providing nutrition services and supporting consumers to receive accurate information and quality products in their healthcare process. This study is one of the few that have examined consumer needs related to nutrition services provided by community pharmacies in Vietnam. The main objective was to identify consumer needs for nutrition services at community pharmacies. Methodology involved a cross-sectional study conducted on 417 respondents who answered questionnaires online and in person in Ho Chi Minh City, Vietnam. The results indicate that almost 100% (417) of consumers usually search the internet first, then seek expert advice to confirm or clarify information. Additionally, 58.2% (243) of consumers are afraid that pharmacists advising on nutritional products in the form of functional foods are often misunderstood as “medicines.” Furthermore, 79.7% (332) of consumers believe that pharmacists are responsible for drugs, not for nutritional advice. The article demonstrates that there is a consumer demand for nutrition services in the healthcare sector. Community pharmacies are at the forefront of providing reliable, responsible, quality products, and nutrition services directly to consumers. Insights into the needs of consumers of nutrition services in community pharmacies are invaluable, and community pharmacists can deliver more valuable nutrition services to primary healthcare. The study recommends that pharmacists working in pharmacies need to update their clinical nutrition knowledge and improve nutrition services to consumers in the context of e-commerce and telehealth services.

**Contribution/Originality:** The primary contribution of this paper is the discovery that there is consumer demand for nutrition services from community pharmacies in Vietnam. Community pharmacies are positioned at the forefront of providing responsible information, high-quality products and services, and product traceability directly to consumers in the digital age, especially with the growth of e-commerce.

## 1. INTRODUCTION

In Vietnam, the explosion of Internet services and e-commerce has encouraged consumers to easily access information and purchase health care products related to functional foods. Functional foods are also known by four other names: real micronutrient supplements, dietary supplements, health foods, and nutritional drugs [1, 2]. Functional foods play a prominent role in meeting the desire to improve longevity and quality of life among the elderly [1]. Today, functional foods are often marketed to large target groups within the total population [3]. With the popularity of functional foods, people are increasingly aware of the food quality and health benefits associated with different types of functional foods [4]. Therefore, people's interest in consuming functional foods and the demand for quality functional food products have increased significantly [5]. Vietnam has a population of 96.2 million, and growing consumer concerns about health and clinical nutrition issues represent a significant market opportunity

for healthy healthcare nutritional products such as functional foods. Functional foods are now the largest health and wellness product category in the country. The functional foods market has attracted both domestic and international companies [6].

The rapid development of the internet in the digital age has occurred through digital platforms such as media and e-commerce. The product information provided is not transparent about quality and origin. The demand for functional food products is increasing rapidly in the market [2]. However, developing new functional foods is a complex, expensive, and risky process. Consumer acceptance of new products is also a complex and slow process that depends on many factors [7]. Consumer uncertainty and skepticism toward new functional foods can influence their acceptance of the products, so understanding consumer responses to functional food products is important [8]. In many countries, including Vietnam, specific regulatory frameworks for e-commerce platforms selling medicines and health products online are still not strictly regulated [9]. To ensure accurate information sources and quality products, it is important to investigate the needs of the general population regarding the search for information and quality products appropriate to their health status, but little research has been done on this topic [10, 11].

This study investigated consumer needs for clinical nutrition advice and quality products provided by community pharmacies in Vietnam. Nutrition services for healthcare are increasingly becoming a concern for everyone in society. Nutrition products related to nutrition services are diverse and serve many different purposes, from disease prevention to treatment and recovery. Community pharmacies play an important role in providing nutrition services and supporting users to receive accurate information and quality products suitable for the healthcare process. In Vietnam, there has not been much research on consumer needs related to nutrition services at community pharmacies in the health supply chain [12]. To fill this gap, this study assessed consumers' needs for appropriate nutrition knowledge and product sources, consumers' clinical nutrition consultation needs when interacting with pharmacists, and consumers' psychological barriers to consulting pharmacists for clinical nutrition at community pharmacies in the healthcare supply chain in Vietnam.

## 2. LITERATURE REVIEW

In the healthcare supply chain, end users are the direct beneficiaries of healthcare products and services. Some of the key customer groups include: (i) Patients are the most important subjects, directly using drugs, medical equipment, and healthcare services; (ii) People supporting patients, including family members, professional caregivers in hospitals, or home health workers; (iii) People who purchase non-prescription drugs, functional foods, personal medical equipment (blood pressure monitors, thermometers, support tools); (iv) People who access preventive health services such as vaccinations, regular health check-ups, or nutritional counseling. End users have a major influence on the entire supply chain, from manufacturing to distribution, as their needs and consumer behaviors shape the healthcare market, ensuring consumers receive safe and quality products [13]. The healthcare supply chain plays an essential role in ensuring the provision of quality products, reasonable prices, and availability at service points such as community pharmacies and hospitals [14, 15].

Community pharmacies play a pivotal role in the healthcare supply chain, being the primary point of contact with the public and often the closest healthcare facility to patients. As such, they have a significant and undeniable impact on the health of the population. This proximity makes them an ideal setting for implementing simple, proactive screening programmes, which often include physiological measurements, questionnaires, and risk assessment forms [16]. Community pharmacists possess a unique set of competencies, including clinical knowledge and skills, that make them ideally positioned to contribute to the provision of nutritional support therapy to patients. Indeed, the professional role of the pharmacist has evolved from the traditional preparation and dispensing of medications to the provision of modern, direct patient care within multidisciplinary healthcare teams. Pharmaceutical care is a practice philosophy in which pharmacists are responsible for providing drug therapy to patients to achieve tangible outcomes,

improving their quality of life. There is a growing body of evidence supporting the positive impact of pharmaceutical care on patient care and healthcare costs [17].

Community pharmacies play an important role in the health supply chain, serving as the final connection point between healthcare products and consumers. They ensure that consumers have access to necessary healthcare products and services that accompany products in the healthcare supply chain [18]. Pharmacy nutrition services are a specialized form of health care within the health care supply chain, where pharmacists or pharmacy professionals become nutritionists who directly advise customers through popular services [17]: Dietary advice suitable for each age, gender, health status, or specific diseases such as diabetes, obesity, osteoporosis...; instructions on the proper, safe, and effective use of functional foods and nutritional supplements; assessment of clinical nutritional status through body indexes such as BMI, fat ratio, muscle mass...; building personalized menus according to needs or diseases; nutritional advice for children, the elderly, pregnant, or lactating women. Healthcare products are diverse and serve a variety of purposes, from disease prevention to treatment and rehabilitation. The need for healthcare product advice in pharmacies is important, as end users often require clear information about the use, effectiveness, and side effects of a product. Some of the key factors in the need for advice include [19]: (i) Users need to know how to use the medicine in the correct dosage, time of taking it, and precautions when using it. (ii) Pharmacists help customers choose products suitable for their health condition, from treatment drugs to functional foods; (iii) users are often worried about side effects of drugs and need advice on safe use; (iv) some pharmacies provide services to monitor customers' health status after using the product; (v) in addition to drugs, customers are also interested in nutrition, lifestyle, and disease prevention measures.

Today, the rapidly growing popularity of social media is making the problem of identifying quality information more urgent [20]. Many websites target vulnerable populations who may be receptive to the promise of a quick and easy cure or an alternative to the recommendations of the medical establishment. Health-related misinformation can be viewed on a continuum, ranging from deliberately misleading content with the intent of promoting unsubstantiated products to sites that may harmlessly promote a product or claim that lacks scientific credibility. The epidemic of fake or controversial health information poses significant challenges for consumers and health educators. It also presents exciting research opportunities for the consumer health informatics community. The risk of inaccurate health information is heightened by the potential vulnerability of the public. Factors that increase an individual's vulnerability range from a desperate desire to be cured to dissatisfaction with traditional health care and limited health literacy. Health literacy can be defined as "the extent to which individuals can obtain, process, and understand basic health information and services needed to make informed health decisions." Knowledge and skills related to health literacy are particularly lacking among vulnerable populations such as the elderly, disadvantaged youth, or those with lower levels of education [21].

The growth of e-commerce and online shopping has provided customers with the ability to search for products in a wide and deep range of product offerings. At the same time, it has also required customers to break away from their usual shopping habits in offline retail stores. Online shoppers need to learn new technological skills to identify, evaluate, and purchase products. The application of online shopping is to describe the characteristics of a creative individual. However, online stores also have limitations compared to offline stores. In an online store, customers do not understand any of the products they find on the Internet (see, touch, taste, smell, and hear) when they search for and buy products. In online stores, consumers may develop low trust and perceive increased risk due to the lack of direct communication. Customers consider the various risks involved before deciding to buy a dietary supplement product [1]. Consumers who need information about functional foods are often interested in the following factors: (i) consumers want to know what health benefits the product can provide, such as boosting immunity, improving digestion, supporting the heart, or beautifying the skin; (ii) there is increasing attention paid to the origin and natural ingredients, free of harmful chemicals, and with clear origins; (iii) specific instructions on dosage and correct usage to achieve the best results without causing side effects; (iv) they want to know the safety of the product and whether

it has been quality tested by a health authority or has a safety certificate; (v) some people prefer products that are specifically designed for their personal health needs, such as vitamins for their age or physical condition; (vi) they are concerned about side effects and contraindications, especially when there is an underlying medical condition or when taking other medications [22, 23].

Pharmacists in community pharmacies play an important role in ensuring that the origin, quality, and correct product information are directly available to consumers. Consumers better understand the role of nutrition in disease prevention and treatment; support the improvement of overall health through a scientific diet; and enhance treatment effectiveness by combining nutrition with medicine and a healthy lifestyle [23]. Some of the key roles that pharmacists perform at community pharmacies include: (i) ensuring that products are purchased from reputable suppliers, with legal business licenses and complete accompanying documents; (ii) checking certifications related to quality, ingredients, and manufacturing processes before distributing products to consumers; (iii) storing products according to the manufacturer's recommendations to maintain effectiveness and safety; (iv) tracking information about the origin of products, including suppliers, production batches, and expiry dates, so that they can be traced when necessary; (v) recognizing signs of counterfeit products and immediately reporting to authorities if substandard products are detected [16]. Evidence from previous studies suggests that pharmacists in community pharmacies lack nutritional advice and patient education in general primary health care nutrition knowledge in the community. A Scottish study supported this by identifying lack of awareness, privacy concerns, discomfort in talking to pharmacy staff, and pharmacists' lack of clinical nutrition knowledge as key factors preventing the public from seeking advice from pharmacists. Consumers were unaware of the educational qualifications involved in becoming a pharmacist or the services that pharmacists could provide. The role of community pharmacies in the health supply chain in providing nutrition services to consumers was of interest to researchers. Additionally, many consumers do not view pharmacists as nutrition experts and believe that pharmacists do not have the time to provide advice. Barriers include lack of time, space, education, and insurance reimbursement policies [22].

Pharmacists around the world contribute to the healthcare supply chain. They are on the front line, a place to listen and solve drug problems, making pharmacists more trustworthy, and also the link between manufacturing companies and patients. Pharmacists communicate with patients, understand their problems, and report to other authorities to find solutions. Pharmacists play an essential role on both sides of the supply chain. First, they have to select healthcare products for the benefit of the users. Secondly, they have to supply and distribute healthcare products to the users and provide information to the customers on how to use the products. The role of the healthcare supply chain is increasing in every country due to its beneficial guidelines, providing information on good storage and distribution [18]. The primary objective of this study was to identify consumer needs for nutrition services in community pharmacies and the role of pharmacists providing nutrition services. Specific objectives included: examining consumer needs in response to questions about experiences of nutrition counseling from pharmacists in community pharmacies; determining the amount of interaction and experiences that consumers have with pharmacists; and understanding consumers' perceived barriers to the role of pharmacists in providing nutrition services in pharmacies.

### 3. METHODOLOGY

A qualitative research design was implemented to gain a deeper insight into consumer nutritional needs, as well as consumer perceptions of nutritional information needs and products [22]. This is a cross-sectional study, an anonymous questionnaire survey. The study conducted a survey on 417 participants who answered the questionnaire online and in person. The survey was conducted in Vietnamese (the country's native language). To survey consumers for the study, the questionnaire was sent to pharmacy students at Nguyen Tat Thanh University to support the survey of consumers in the residential community of pharmacy students in Ho Chi Minh City.

The study was conducted from January 2024 to June 2024. Each participant completed a survey questionnaire. In Part 1 of the survey, these consumers reported their epidemiological characteristics, such as gender, age, education level, occupation, and monthly income. The demographic components were developed based on previous studies, with adjustments made to suit the consumer context in Ho Chi Minh City. Part 2 includes three sections: (1) consumers use sources to search for nutrition and product knowledge; (2) consumers interact with pharmacists for nutrition and product advice; (3) consumers' psychological barriers to consulting pharmacists about nutrition. The assessment questions according to the topics of the research objectives were synthesized by the author, reviewing published studies according to Table 1 [57, 58].

**Table 1.** Contents of consumer needs for nutrition services at pharmacies.

Consumer demand for nutritional and product knowledge.		
Code	Statements	References
TK01	Consumers want advice tailored to their age, gender, underlying medical conditions, lifestyle, and personal goals.	De Hoogh, et al. [24]; Chambers [25]; Celis-Morales, et al. [26]; Eysenbach [27]; Cline and Haynes [28]; Medhat, et al. [29]; Elsayed [30]; Meier, et al. [22]; Mai [31]; [32]; Braun, et al. [33]; Alamgir [34]; Meijboom [35]; Boon [36]; Robinson [37]; Wheatley [38] and Harrison [39].
TK02	Consumers often search the internet first, then seek out experts to confirm or clarify information.	
TK03	Consumers who “take nutritional advice” from pharmacists at the pharmacy expect to receive information that is scientifically based.	
TK04	Consumers want pharmacists to advise them on how to combine foods, when to eat, and what to keep in mind when using functional foods and medications when they go to the pharmacy.	
TK05	Consumers prefer to meet pharmacists for direct consultation in special cases, such as children, the elderly, or people with medical conditions, when using nutritional products.	
Consumers interact with pharmacists for advice and nutritional products.		
TT06	Pharmacists provide nutritional counseling for primary health care in community pharmacies.	Harnett [40]; Medhat, et al. [29]; Alshahrani [41]; Katoue [42]; Ogbogu [43]. Eussen, et al. [3]; Blandon [44]; Singla [45]; Kelly [46]; Belachew, et al. [47]; Gregório [32]; Elsayed [30]; Harrison [39]; Robinson [37] and Borralho and Reschke [48].
TT07	Consumers are concerned that pharmacists recommend nutritional products in the form of functional foods, which are often misunderstood as “medicines.”	
TT08	Pharmacists have the skills to provide nutritional counseling and instructions on how to use nutritional products for customers coming to the pharmacy.	
TT09	Pharmacists know about nutritional counseling within the scope of their expertise for consumers coming to the pharmacy.	
TT10	Consumer demand for pharmacists to provide nutritional and health care advice in pharmacies	
Psychological barriers for consumers to consult pharmacists about nutrition		
KK11	Consumers access health nutrition information through the media rather than pharmacists.	Cain, et al. [49]; Ostry and Mendoza [50]; Pollard, et al. [51]; Assemi, et al. [52]; Eades [53]; Meier, et al. [22]; Rasmussen [54]; Borralho and Reschke [48]; Boullata [55] and Kwan, et al. [56].
KK12	At the pharmacy, there is usually not much time for nutritional advice for consumers.	
KK13	Consumers are reluctant to go to the pharmacy to consult a pharmacist if they do not want to buy the product.	
KK14	Consumers trust pharmacists for nutritional advice instead of doctors or nutritionists.	
KK15	Consumers believe that pharmacists are responsible for medications, not for nutritional advice.	

#### 4. RESULTS AND DISCUSSION

The study sample included 417 participants, of whom 48.7% were female. The average age of the participants ranged from 20 to 40 years old, representing 66.4%. The educational level of the participants, specifically those with a university degree, accounted for 38.6%, consistent with the survey content; students comprised 28.8%, followed by unskilled workers at 19.4%. Notably, respondents in the income group earning over 10 million VND accounted for 37.6%. Additional details on the socio-demographic characteristics of the study population are presented in Table 2. The results were compared with a study by Quy et al. [59], showing that demographic characteristics are similar.



According to [Quy et al. \[59\]](#), the decision of customers to buy medicine in Ho Chi Minh City. This study has a research sample of 599 participants, of which women account for 51.8%. The age of the participants is mostly 18-25 years old, accounting for 32.6%. The number of participants with university degrees accounts for 64.4%. The number of respondents in the income group over 9 million VND accounts for 31.1% [\[59\]](#).

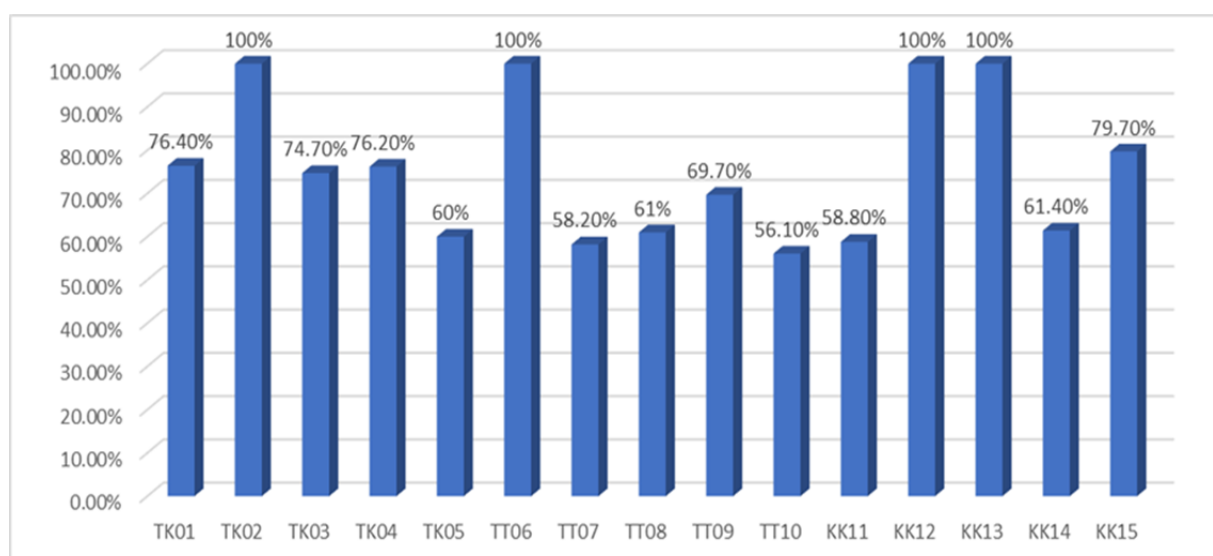
**Table 2.** Socio-demographic characteristics.

Variable	N= 417	%	Variable	N= 417	%
Gender			Job		
Male	214	51.3	General Labor	81	19.4
Female	203	48.7	Business / Self-employed	62	14.9
Age (Years)			Student	120	28.8
20 – 40 years old	277	66.4	Office Administration	72	17.3
40 – 60 years old	107	25.7	Retired	28	6.7
Over 60 years old	33	7.9	Other	54	12.9
Education			Income in one month* (VND)		
Not yet graduated from high school	42	10.1	No stable income source	51	12.2
High school graduate	91	21.8	Income source < 5 million	95	22.8
University	161	38.6	Income source from 5-10 million	114	27.4
Postgraduate	89	21.3	Income source > 10 million	157	37.6
University in the health sector	34	8.2			

The study provides key findings from the collected data, and the statements of the three main themes coded are presented in [Figure 1](#). The results of the study are evaluated and discussed together with published studies of the same theme group, addressing the objectives of the study.

#### 4.1. Consumers' Need for Access to Nutrition Information

The study results show that almost 100% (417) of consumers often look up information online first, then seek out experts to confirm or clarify information. 74.7% (311) of consumers who "listen to nutritional advice" from pharmacists at the pharmacy want to receive information based on scientific grounds. 76.2% (318) of consumers want pharmacists to advise them on how to combine foods, when to eat, and what to keep in mind when using functional foods and medicines when visiting the pharmacy. 76.4% (318) of consumers want nutritional advice appropriate to their age, gender, underlying medical conditions, lifestyle, and personal goals. 60% (250) of consumers prefer to meet pharmacists for direct consultation in special cases, such as children, the elderly, or people with medical conditions, when using nutritional products shown in [Figure 1](#).



**Figure 1.** Consumers' perceptions of nutritional services at pharmacies.

Meier et al. [22], study found that most consumers get their nutrition knowledge from the internet, and of those who reported using the internet, 41% searched the internet ("Dr. Google") for nutrition information. For the most part, consumers do not rely solely on healthcare professionals for their nutrition and health knowledge. Other sources include health professionals, relatives, books, personal experience, and a combination of sources. In terms of trusted sources, consumers consider healthcare professionals, the internet, and academic researchers to be the most trustworthy, with 74.9% of consumers believing nutritionists to be the most trustworthy due to their profession-specific education. Furthermore, consumers do not seek out other sources, such as pharmacists, because they are satisfied with their current sources and believe they are optimizing their health without consulting a pharmacist [22].

According to Medhat et al. [29], pharmacists practicing at pharmacies asked 63.9% of patients about diet when taking medical history; Counseling focused on adults (92.7%) and pathologies (Obesity (94%), Diabetes (89.9%). Hypertension (76.9%); Few questions were asked for consultation for children, the elderly, pregnant/lactating women, and athletes; Frequency of consultation on food-drug interactions, food supplement safety, and symptoms of vitamin deficiency/excess was still low [29]. The combination of nutrition and pharmaceuticals can be highly effective in the management of chronic diseases. Dietary supplements and functional foods need to be more closely regulated and evaluated for efficacy and safety. Increased post-marketing research on dietary supplements and monitoring of users are needed to ensure long-term benefits [3].

#### *4.2. Consumers Recognize the Role of Pharmacists in Nutritional Product Consulting*

The study results show that almost 100% (417) of consumers surveyed said that pharmacists provide nutrition counseling for primary health care at community pharmacies. 69.7% (290) of consumers said that pharmacists have the knowledge, and 61% (254) have the skills to provide nutrition counseling within their professional scope to consumers visiting pharmacies. 58.2% (243) of consumers are concerned that pharmacists advise on nutritional products in the form of functional foods, which are often misunderstood as "medicines." 56.1% (234) of consumers need pharmacists to provide nutrition counseling for primary health care at pharmacies, as shown in Figure 1.

Consumers do not interact with pharmacists about nutrition as much as with other health professionals. This may be because 33% of consumers view pharmacists as professionals who lack the appropriate training to provide nutrition advice, 25% have never considered consulting a pharmacist, and another 10% view pharmacists as too busy to provide advice. However, some consumers believe that pharmacists should be consulted about nutrition because they are trained. If a relationship is established between the consumer and pharmacist, this perception can change, as consumers will feel they are confiding in a trustworthy individual who is willing to take the time to answer their nutrition questions. There is a gap in public knowledge about the education level of pharmacists. The role of pharmacists is evolving by collaborating with other health care professionals to provide the most comprehensive nutrition care. With interdisciplinary and nutrition education, pharmacists can make an impact in improving nutrition counseling services [22].

According to Medhat et al. [29], the percentage of pharmacists with knowledge about nutritional treatment and disease prevention through food is 57.3%; 75.8% believe that pharmacists have a role in nutritional assessment. High knowledge exists regarding taking medication with or instead of meals, indications, and doses of dietary supplements. Poor knowledge is observed concerning drug-herbal interactions, nutrigenetics, symptoms of vitamin deficiency or excess, and contraindications of dietary supplements [29]. In the Assemi et al. [52] study, consumers were interested in consulting on common medical conditions: depression, hypertension, allergies, chronic pain, and infections. Product types: 49.6% related to prescription drugs, 14.7% to OTC (over-the-counter) drugs, 10% to herbal and dietary supplements. Few asked about herbal and dietary supplements possibly due to reluctance to ask pharmacists about "alternative medicine" products [52].

Pharmacists at community pharmacies always consider nutritional counseling as a responsibility (69.3%); 88.6% only provide counseling when requested by patients; only 34% proactively provide counseling when detecting signs

of poor nutrition; 57.3% believe that dietary supplements should be sold over-the-counter (OTC) under the supervision of pharmacists [Medhat et al. \[29\]](#). [Meier et al. \[22\]](#) study found that consumers interact with pharmacists: only 14% have asked a pharmacist when purchasing a dietary supplement; 65% have purchased without asking a pharmacist; 24% have never purchased a dietary supplement. In [Meier et al. \[22\]](#) study, 12.7% of pharmacists were employed in settings that require nutritional counseling, such as home care. This creates a barrier to health care because consumers lack education about the nutritional supplements they take [\[22\]](#).

#### *4.3. Barriers To Consumer Access to Nutrition Services at Community Pharmacies*

At the pharmacy, 100% (417) of consumers said that they often do not give nutritional advice, and 100% (417) of consumers are afraid to go to the pharmacy to consult a pharmacist if they do not buy the product. 79.7% (332) of consumers believe that pharmacists are responsible for drugs, not for nutritional advice. 61.4% (256) of consumers trust pharmacists for nutritional advice instead of doctors or nutritionists. 58.8% (245) of consumers access nutritional information for health through the media rather than seeing a pharmacist, as shown in [Figure 1](#).

[Meier et al. \[22\]](#) study found that consumers perceive pharmacists as too busy to provide advice, not realizing that part of the pharmacist's role is to advise on medications and any health-related issues. Further research should show the public that pharmacists are trained to provide advice and not just dispense medication [\[22\]](#). The majority of pharmacists consider nutritional counseling as part of their responsibilities. They rate the combination of nutritional therapy and pharmaceuticals positively. Seventy-five percent regularly provide counseling on food-drug interactions. Counseling is focused mainly on pregnant women (20%) and chronic diseases such as diabetes, obesity, and food allergies. Counseling is less common in other groups such as children, adolescents, and the elderly [\[47\]](#).

Dietary supplements are widely available. However, consumer vigilance and greater regulatory oversight are needed to ensure that health claims are credible and accurate. Products are often overpriced relative to their nutritional value. Most manufacturers' claims are unsubstantiated and misleading or deceptive. Some products have even been withdrawn from the market due to insufficient evidence to support their health claims. According to [Kwan et al. \[56\]](#) said that most consumers actively look up information, mainly through the Internet, relatives, books, or other experts such as doctors and nutritionists. Many people do not think to ask pharmacists or believe that pharmacists are not qualified in this field [\[56\]](#).

Consumers also want a long-term relationship with their pharmacists and are willing to discuss it if they trust them. Pharmacists can act as neutral advisors, helping consumers analyze and choose reliable information. However, the final decision still belongs to the consumer with the products they can choose to buy [\[56\]](#). Consumers also have misconceptions and barriers to accessing pharmacists in pharmacies. [Meier et al. \[22\]](#) study found that 33% of consumers believe that pharmacists lack nutritional expertise; 10% of consumers say that pharmacists are too busy to provide advice; 25% of consumers in the study have never thought to ask a pharmacist about nutrition [\[22\]](#).

Nutrition counseling at community pharmacies is a potential model due to its convenience and low cost. Clinical nutrition counseling and the provision of functional food products at pharmacies are considered safe, effective, and time-saving. The role of the pharmacist at community pharmacies as a nutrition expert should be maintained, while the pharmacist can support at the risk detection and warning level. Consumers still value the expertise of nutritionists more than pharmacists. Research by [De Hoogh et al. \[24\]](#) found that 50% of research participants agreed with pharmacists providing nutritional advice [\[24\]](#). In the [Medhat et al. \[29\]](#) 95.4% of solutions presented suggested the need to increase nutrition knowledge training; 69.8% suggested raising public awareness about pharmacists' nutritional counseling capabilities [\[29\]](#). Pharmacists are not fully recognized by the public for their nutritional knowledge and counseling role, and awareness of pharmacist training needs to be raised. It is recommended to increase nutrition education in training programs and integrate the interdisciplinary health system to improve the quality of counseling [\[22\]](#).



## 5. CONCLUSIONS

The study focused on the needs of consumers receiving nutrition services from community pharmacies at the end of the health supply chain. The study revealed where consumers received nutrition information and their perceptions of the pharmacist's status as a nutrition advisor. The results of the study showed that consumers often searched online first, then sought expert confirmation or clarification before consulting a pharmacist at the pharmacy. Consumers reported that pharmacists at community pharmacies provide nutrition advice for primary health care. Consumers reported barriers to interacting with pharmacists regarding nutrition services and reported that pharmacists, who are trained to be more responsible for medications than for nutrition services, are too busy to provide advice. Consumers were reluctant to visit a pharmacy to consult a pharmacist if they were not purchasing a product. Overall, the research results have provided a more comprehensive understanding of the different experiences of consumers, achieving a comprehensive understanding. Insights into the needs of consumers of nutrition services in community pharmacies are extremely valuable; pharmacists in community pharmacies can provide more valuable nutrition services for primary health care. The study provides a comprehensive view of the diverse nutritional needs and experiences of consumers in Ho Chi Minh City. Future studies are recommended to expand the scope of the study to other areas in Vietnam. To achieve a more comprehensive and inclusive approach, contributing to policy recommendations for training pharmacists in nutrition and community pharmacies providing primary health care nutrition services.

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**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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**Authors' Contributions:** Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

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