

RESEARCH ARTICLES

Nutrition Knowledge Improves Capabilities Educational Information Communication Service (EIC) Practice Community Pharmacist Health Supplement

Rizki Siti Nurfitria, Tiara Ismadewi Hastuty, Ni Nyoman Sri Mas Hartini

Faculty of Pharmacy, Universitas Bhakti Kencana,
Jl. Soekarno Hatta No. 754 Bandung 40617 Jawa Barat Indonesia, Telp. 081312221255

Corresponding email: rizki.sitinurfitria@bku.ac.id

Abstract: Community pharmacists as the spearhead of pharmacy services may be asked to provide advice on the use of health supplements through Information Communication and Education services (EIC) such as counselling and drug information. Knowledge of nutrition and health supplements is very important to prevent misuse in consuming these products. The purpose of the study was to determine the extent of the relationship between nutritional knowledge and community pharmacist practice in EIC health supplements. The method used is observational analytic with a cross-sectional approach in Purwakarta Regency in March – April 2022. Data was taken using questionnaires on 59 community pharmacists and then processed qualitatively and quantitatively through the Spearman Rank correlation test using SPSS version 25.0. The results showed that all community pharmacists routinely conduct EIC (100%), most have positions as the first pharmacist practice license (SIPA) (88.6%) and practice in pharmacies (50%). The level of knowledge of nutritional counselling and community pharmacist practice in EIC health supplements falls into the good category (85.8% and 81.32%). The level of knowledge of nutritional counselling and community pharmacist practice in EIC health supplements falls into the good category (85.8% and 81.32%). There was a significant positive relationship between nutritional knowledge and community pharmacist practice in the EIC of health supplements at a significance value of 0.000 ($p < 0.05$) and a correlation coefficient value of 0.769 indicating that the relationship is strong.

Keywords: Community pharmacist, nutrition knowledge, health supplement counselling practices

INTRODUCTION

In 2018 in the United States, the Council for Responsible Nutrition (CRN)

surveyed adults, then stated that as many as 75% of adults take health supplements.¹ Similarly, sales of herbal supplements in

the country increased by a record-breaking 17.3% in 2020.² These sales include immune-boosting products, stress relievers, and heart health supplements that grew rapidly during the COVID-19 pandemic.² Meanwhile, Indonesia experienced a 5.28% increase in the growth rate of household consumption in the health sector.³ This indicates an increase in demand for health supplement products.³

Intake of health supplements is intended to complement, not replace the nutritional needs of food.⁴ However, with the development of the economy, technology, lifestyle, and diet of people who consume junk food or ready-to-eat foods that are low in nutrition but high in calories, the role has changed.⁵ Food supplements are believed to replace vitamins and minerals that are not sufficient for food.⁶

American College of Clinical Pharmacy (ACCP) Calls for pharmacists to explore safety concerns about the use and suggest health supplements appropriately.⁷ Bebeci et al. (2015) stated pharmacists in the practice need to be vigilant in monitoring possible interactions of nutritional supplements with drugs by asking patients about nutritional supplements and medications they take at once and advising them about nutritional supplements that should be avoided when taking certain medications.⁹ According to Marupuru et al. (2019), pharmacists can also help patients to make appropriate and safe dietary health supplement choices.⁸

However, unfortunately, community pharmacists' knowledge about dietary supplements seems to be lacking because

pharmacist education or counselling training does not provide sufficient knowledge about nutrition which results in a lack of confidence and skills in monitoring therapy.^{10,11}

Information and Education Communication Services (EIC) such as counselling and drug information are needed by patients for educational purposes on drug use so that medication errors do not occur.¹² According to Ernawati (2022), improper consumption of vitamins and supplements can cause unexpected effects and interactions with other drugs that may be taken together.¹³

This study aimed to determine the extent of the relationship between nutritional knowledge and community pharmacist practice in the EIC of health supplements.

METHODS

This research is an analytical observational study with a cross-sectional approach conducted in March-April 2022 in Purwakarta Regency. The total population according to data from IAI Purwakarta Regency is 198. The respondents' inclusion criteria include Pharmacists who practice or work in community pharmacies service facilities such as Pharmacies, Clinics, *Pusat Kesehatan Masyarakat*/Community Health Center (PUSKESMAS) and Hospitals and carry out EIC activities in practice at these facilities. Exclusion criteria include community pharmacists who do not meet their practice hours, do not complete questionnaires and are unwilling to complete questionnaires. The number of

samples of community pharmacists who practice or work and routinely conduct Educational Information Communication (EIC) at community pharmacy service facilities is 59 people. Samples are taken by accidental sampling technique and calculated using Lemeshow's formula.¹⁴

$$n = \frac{Z^2 \cdot 1 - \frac{\alpha}{2} \cdot p(1-p) \cdot N}{d^2 \cdot (N-1) + Z^2 \cdot 1 - \frac{\alpha}{2} \cdot p(1-p)}$$

$$n = \frac{(1,65)^2 \cdot 0,5 \cdot 0,5 \cdot 198}{0,10^2 \cdot (198-1) + (1,65)^2 \cdot 0,5 \cdot 0,5}$$

$$n = \frac{134,763}{2,650625}$$

$$n = 50,841$$

Information:

N = Sample Size

N = Population (198 Respondents)

$Z^2 \cdot 1 - \frac{\alpha}{2}$ = Z score (Trust level 90%)

p = Maximum Estimate (0,5)

d = alpha (0,10) or 10% from the level of trust 90%

So, the number of respondents needed is 51 respondents.

Univariate analysis was conducted to describe the characteristics of each study variable, which included gender, age frequency, job title, length of practice and other occupations other than in pharmacies.¹⁵ The category of knowledge

and practice level of pharmacists is divided into three. The¹⁶ categories are:

1. Either with a score or a score of 76-100%
2. Enough with a score or score of 60-75%
3. Less with a score or score of < 60%

After knowing the characteristics of respondents, then bivariate analysis of two variables that are considered related where this analysis is influenced by the type of data. The Spearman Rank correlation test is used to check whether there is a relationship between two variables, both of which have ordinal-scale measurement levels.¹⁵ This test is used to determine the relationship between nutritional knowledge and community pharmacist practice in health supplement EIC.

The researcher asked permission from the local Health Office, and the Board of the Indonesian Pharmacists Association Purwakarta Branch and pursued research ethics at the Health Research Ethics Committee of Bhakti Kencana University. Research ethics (No.: 020/09.KEPK/UBK/III/2023) includes confidentiality and anonymity where the data taken in this study is confidential. The name of the respondent and the place of research is kept secret in all forms of writing research results.

RESULTS

Table 1. Frequency Distribution of Respondents' Characteristics and Level of Nutritional Knowledge and EIC Community Pharmacist Service Practices

Variable	Category	Frequency (n=70)	Percentage (%)
Gender	Man	13	18,6
	Woman	57	81,4
Age	Adult (18-45)	66	94,3

Variable	Category	Frequency (n=70)	Percentage (%)	
Health Facilities	Pre-elderly (45-59)	4	5,7	
	Hospital	19	27,1	
	Puskesmas	5	7,1	
	Clinic	11	15,7	
	Pharmacy	35	50	
Duration of Practice	1-5 year	57	81,4	
	6-10 year	10	14,3	
	11-15 year	3	4,3	
Position	First SIPA	62	88,6	
	Second SIPA	8	11,4	
Other work	None	20	28,6	
	Housewives	13	18,6	
	Civil servants	13	18,6	
	Entrepreneurial	10	14,3	
	Teacher	7	10,0	
	Lecturer	4	5,7	
	Farmer	3	4,3	
	Practice hours: 1. Per day (hour)	1-5	24	34,3
		6-10	44	62,9
11-15		2	2,9	
2. Per week (hour)	5-15	15	21,4	
	16-25	11	15,7	
	26-35	4	5,7	
	36-45	22	31,4	
	46-55	12	17,1	
	56-65	3	4,3	
	66-75	1	1,4	
	76-85	2	2,9	
	Knowledge	Good	52	74,3
Enough		18	25,7	
Less		0	0	
Practice	Good	48	68,6	
	Enough	19	27,1	
	Less	3	4,3	

Table 2. Correlation test results from nutritional counselling knowledge and practices Community Pharmacist in EIC Health Supplements

		Knowledge	Practice
Spearman's rho	Correlation Coefficient	1,000	,769**
	Knowledge	Sig. (2-tailed)	,000
	N	70	70
Practice	Correlation Coefficient	,769**	1,000
	Sig. (2-tailed)	,000	.
	N	70	70

DISCUSSION

A. Characteristics of Respondents

Univariate analysis was conducted on 70 community pharmacists using questionnaire instruments. Table 1 shows that the most dominant gender of respondents is women as many as 57 respondents (81.4%). This is under the regional health profile of Purwakarta Regency in 2020 where the number of female pharmacists is greater than male pharmacists.¹⁷

Based on age, the most dominant age category was 18-45 years old as many as 66 people (94.3%).¹⁸ According to the Ministry of Health 2016, the age category of 18-45 is an adult age.¹⁸ This shows that respondents belong to the productive age group.¹⁹ Most respondents practice in pharmacy facilities, namely 35 people (50%). According to data from the West Java Health Office accessed on the official *website* of the West Java Communication and Information Office, the number of pharmacies in the Purwakarta area in 2020 was 89 pharmacies.¹⁹ This shows that pharmacists who practice in pharmacy facilities are more than other practice facilities²⁰. While the least respondents' practice facilities are Puskesmas as many as 5 people (7.1%).²⁰

The most dominant respondent position was the First SIPA, totalling 62 people (88.6%).²¹ Pharmacists who will practice pharmacy services must obtain a work permit in the form of a Pharmacist Practice License (SIPA) depending on the location of the establishment of pharmaceutical service facilities issued by the head of the district/city Health Office.²¹

According to the Indonesian Ministry of Health in 2016 pharmacists who practice pharmaceutical services can obtain work permits for up to three SIPA, namely the First SIPA, the Second SIPA, and the Third SIPA.²¹

The most dominant length of practice of respondents was in 1-5 years amounting to 57 people (81.4%) and the least was 11-15 years amounting to 3 people (4.3%).²² The length of work of a professional can be attributed to the amount of experience gained in the workplace.²² According to Marhenta (2021), the longer a professional works, the more knowledge and experience they have and the higher their skills.²²

Respondents with jobs other than pharmacies, namely being housewives and civil servants, each amounted to 13 (18.6%).²³ Respondents who work only in pharmacies and do not work in other facilities amounted to 20 people (28.6%).²³ Respondents who work in several places can cause fatigue, lack of energy and concentration which has the potential to cause work errors in providing information about drugs.²³

The most dominant practice hours of respondents per day are 6-10 hours for as many as 44 people (62.9%) and the most dominant practice hours of respondents per week are 36-45 hours for as many as 22 people (31.4%). This shows that most respondents have working hours or hours under legal provisions. Based on Manpower Law No. 13 of 2003 article 77 paragraph 2, employee working time is seven hours in one day and 42 hours in one week in six working days.²⁴ Decree of the Minister of Health No. 1332 of 2002 also

mentions pharmacist working hours, which is during which the pharmacy starts service activities under daily working hours of eight hours.²⁵

B. Knowledge Level of Nutrition Counselling and Community Pharmacist Practice in EIC Health Supplements

Based on data collected from questionnaires that have been distributed in the form of 14 closed questions, as many as 70 community pharmacist respondents (74.3%) have nutritional counselling knowledge which is included in the good category, while the other 25.7% are included in the sufficient category.²⁶

Pharmacists can not only be a source of information about drugs but also provide information and education services to direct patients to carry out a healthy lifestyle and monitor or monitor therapy.¹² According to Nurjanah et al. (2020), information and education are one-way pharmacists do patients prevent medication errors in taking health supplements.¹²

The most significant barriers for pharmacists to communicate about health supplements or dietary supplements are lack of availability of scientific evidence, lack of training, and lack of accurate information accessible.¹² So it is necessary to increase the role of pharmacists such as skills, behaviour and knowledge to interact directly with patients, one way is by following continuing education according to Nurjanah et al. (2020).¹² This can train the pharmacist's ability and knowledge regarding the EIC of health supplements.¹²

According to research by Axon et al. (2017) and Alsharani et al. (2020), pharmacists have received education during undergraduate studies on vitamins, but they are less educated about information about side effects and interactions.^{7,26} Therefore, community pharmacists must have proper knowledge of vitamins and nutritional health supplements to suit consumer needs.²⁶

Pharmacists providing counselling to patients can be done directly or through intermediaries.²⁷ Those who can be intermediaries in counselling are patient companions such as the patient's family, patient nurses, or anyone who has responsibility in caring for patients.²⁷

Continuing Professional Development (CPD) activities or continuing education is a series of systematic lifelong learning efforts aimed at improving and developing the skills of pharmacists including involving various professional experiences or post-training programs.²⁸

Pharmacists consider continuing education to be a very important activity. This is in line with the requirements for competence and philosophical values that must be possessed by a pharmacist, namely as a life-long learner.²⁹

Based on data collected from questionnaires that have been distributed in the form of 18 closed questions about the practice of Educational Information Communication (EIC) health supplements to community pharmacists, as many as 70 respondents (68.6%) belong to the good category, 27.1% belong to the sufficient

category, while 4.3% belong to the less category.²⁹

Community pharmacists need to master knowledge related to medicines and health supplements, to provide patients with adequate information about proper use community pharmacists need to master knowledge related to medicines and health supplements, to provide patients with adequate information about proper use.²⁷ The use of Information Communication and Education (EIC) services is one form of optimization in patient-centred pharmaceutical services.³⁰ Drug information and counselling activities include providing information and education related to dosage forms, dosages, ways of administration, reactions or side effects, the safety of use by pregnant women, prices, and others.²⁷ Therefore, this service needs to be carried out properly so that drug abuse does not occur and can improve recovery from disease.²⁷

The pharmacist's role is critical as a frontline healthcare professional who may be required to provide advice on health supplement products.²⁶ Pharmacists can also help patients to make appropriate and safe dietary health supplement choices.⁸ This is reflected in the results of research by Marupuru et al. (2019) and Alshahrani et al (2020) where most pharmacists answered 'definitely do' by taking time for EIC health supplement services to patients.⁸

In practice, pharmacists are also obliged to inform patients about side effects resulting from drug interactions with health supplements.^{9,13} According to Marupuru et al., pharmacists in each practice need to be vigilant in monitoring possible interactions

by advising on nutritional supplements that should be avoided when taking certain medications.⁸

From the results of the study, it is known that most pharmacists are 'uncertain to do' monitoring patients using health supplements. Research by Alshahrani et al. (2020) In Saudi Arabia, 66.27% of community pharmacists have been monitored after administering vitamins and nutritional supplements to patients.²⁶ Concerning consideration of the patient's criteria to be given an EIC, respondents mostly answered 'will do' and 'definitely do' that.²⁶ Six patient criteria need to be given EIC, namely 1) Patients with special conditions, 2) Patients with chronic diseases or long-term therapy, 3) Patients who are currently using drugs with special instructions, 4) Patients who use narrow therapeutic index drugs, 5) Polypharmacy patients; and 6) Patients who have low adherence rates.³¹

C. Bivariate Analysis: Spearman Rank Correlation

Table 2 shows the relationship between nutritional counselling knowledge and community pharmacist practice in the EIC of health supplement relationships was at a strong level (0.60-0.799) with a correlation coefficient of 0.769. The p-value or significance obtained 0.000 ($p < 0.05$) which means H1 received H0 rejected, indicates that there is a meaningful relationship between nutritional counselling knowledge and community pharmacist practice in health supplement EIC.³¹ Test results show positive (+) or unidirectional significance values. The

better the pharmacist's knowledge of the EIC of health supplements, the better the pharmacist's practice in the EIC of health supplements.²⁶

CONCLUSION

Based on the analysis above, it can be concluded that there is a significant positive relationship with a strong correlation between pharmacist knowledge and practice in EIC health supplements in Purwakarta Regency.

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