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Research Article

Predisposing Factors for Communicating Effectively in Providing Drug Information

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ABSTRACT

Effective communication in providing drug information is essential to achieve the expected outcome in implementing pharmaceutical care. This study aims to analyze factors that influence the occurrence of effective communication in providing drug information. Data were collected using a Likert-scale questionnaire survey technique with a cross-sectional design. The study involved 100 samples from all districts in Denpasar City, which were taken by convenience sampling technique. The characteristics of the respondents are described descriptively. Bivariate and multivariate tests are used to analyze the effect of independent variables on effective communication. The pharmacy atmosphere has no significant impact on effective communication. Pharmacists' technical and interpersonal communication skills can facilitate effective communication on the Chi-squared test, but only the interpersonal communication competencies of pharmacists can encourage effective communication in the logistic regression analysis (p-value 0.008; CI: 95%; OR 4.751: 1.492-15.133). Communication factors, in general, predispose to effective communication. Besides paying attention to the message's contents, pharmacists must pay more attention to how drug information is conveyed to patients. Thus, there is a common understanding between the communicator and the communicant. The patient will also be encouraged to use the drug according to the instructions given so that the ultimate goal of treatment can be achieved.

INTRODUCTION

The quality of healthcare services can be described by user satisfaction and the conformity of services with professional standards and codes of ethics (Hutagalung and Wau, 2019). Pharmaceutical services are carried out following applicable regulations to obtain definite results in improving the patient's health status. The services provided include providing information about the medication used by the patient and monitoring the patient's medication use (Antari *et al.*, 2023; Astuti *et al.*, 2022). Monitoring drug use in community pharmacy services in Indonesia has yet to be implemented optimally, so awareness is needed from every patient to use the drug obediently and with discipline. Community pharmacy personnel have an essential role in informing the correct use of drugs. Pharmacy staff can also encourage patients to use their medicine according to the provisions to achieve treatment goals (Antari *et al.*, 2023).

Collaboration, information exchange, and coordination to reduce errors or delays in information occur through effective communication (Musiana *et al.*, 2020). Communication will be effective when the communication goal is achieved. The goal is to make the recipient understand the message the communicator conveys (Syahputri, 2019). If the patient understands the message conveyed, there will be a change in attitude according to the instructions given by the pharmacy personnel (Antari *et al.*, 2023; Halimatussa'diah *et al.*,

2022). The understanding and willingness of the patient to follow the given instructions are indicators of effective communication.

Providing drug information is the responsibility of pharmacy personnel to support rational drug use (Ylä-Rautio *et al.*, 2020; Young *et al.*, 2018). However, the study by Young *et al.*, (2018) mentioned that some drug information is only provided if the patient actively requests it. Antari *et al.* (2019) also stated that pharmacy personnel tend to lack in the collection of in-depth information about the patient's condition. Due to the differing perceptions between pharmacy personnel and patients, patients are often not provided with the information they desire (Young *et al.*, 2018). Wang *et al.* (2022) also stated that patients and doctors have different perspectives on quality communication. Pharmacy personnel often need help to engage patients in pharmaceutical dialogues (Seubert *et al.*, 2018).

Patient engagement and openness in health communication are crucial (Chegini *et al.*, 2020; Fielding *et al.*, 2018; Listiowati *et al.*, 2023), enabling pharmacy personnel to tailor information to each patient's specific circumstances. Hartati (2019) stated that the communicator's communication style significantly affects the recipient's understanding. Patient engagement can be related to effective communication and the attitude of healthcare professionals (Chegini *et al.*, 2020; Qudah *et al.*, 2021). Pharmacy personnel must create a conducive communication climate and possess proficient communication skills (Putri *et al.*, 2021).

Although numerous studies have proven the importance of quality communication in healthcare services (Antari *et al.*, 2021; Guo and Wang, 2021; Howick *et al.*, 2018; Listiowati *et al.*, 2023; Wang *et al.*, 2022). Nichols *et al.* (2021) stated that communication in healthcare services still needs to be further explored. Young *et al.*, (2018) state that there are still differences between ideal pharmaceutical practices and their implementation in the real world. Healthcare professionals need to be trained to communicate empathetically and positively, and there is still a need for a clear understanding to implement it effectively (Antari *et al.*, 2021; Howick *et al.*, 2018; Qudah *et al.*, 2021; Wahyuni *et al.*, 2021). Accordingly, understanding the predisposing factors that pharmacy personnel can apply to create effective communication is crucial. This study aims to examine the influence of communication factors on the development of effective communication. The hypothesis taken in this study is that the support of communication factors in this study can help facilitate effective communication. The research uses the perspective of Shannon-Weaver's communication theory (1949) to explain the research findings. This approach allows for a specific depiction of the communication process in pharmaceutical services, particularly in the Denpasar region, since the quality of pharmaceutical services in Denpasar still needs improvement (Novianita *et al.*, 2016; Wintariani *et al.*, 2018).

METHODS

The research was conducted using a quantitative survey with a cross-sectional approach. The study results are reported following the STROBE checklist guidelines (von Elm *et al.*, 2008). The study's independent variables are the four domains' communication factors. The dependent variable of the study is effective communication.

The study population consists of all pharmacy customers in the Denpasar region. The minimum sample size is 96 respondents, selected using a convenience sampling technique. The sample size is determined using the formula proposed by Lemeshow *et al.*, (1997), considering a 95% confidence level, 50% population proportion, and 10% precision level/deviation from the population. The respondents included in the study are at least 18 years old, have visited the pharmacy more than once, give consent to become a respondent after being given information about the research, and can communicate effectively. Respondents were excluded from the research sample if they did not answer the questions completely or decided to withdraw from the study.

The research instrument is a Likert-scale questionnaire developed by the researcher. The researcher constructed the list of questions in the research instrument by taking themes from previous research (Finney Rutten *et al.*, 2015; Hassali *et al.*, 2018; Lai *et al.*, 2018; Larson *et al.*, 2002; Manzoor *et al.*, 2019; Sakharkar *et al.*, 2015) combined with qualitative research themes (previously conducted by the researcher and published in a separate article, themes available in the supplementary file "Theme from qualitative study"). A peer review was conducted to refine the questionnaire design. Two experienced researchers in questionnaire development and a practicing pharmacist were involved in the process. Validity and reliability testing were performed by distributing the questionnaire to 40 individuals outside the

research sample. The questionnaire was valid if the calculated Pearson's Product Moment correlation coefficient "r" was higher than the tabled value (tabled r = 0.312 for 40 respondents). The questionnaire was reliable if Cronbach's alpha value was >0.60. Any questionnaire statements with a calculated r value <0.312 were eliminated. This process was conducted to reduce bias resulting from differences in patient perceptions when interpreting the questionnaire content. The questionnaire's final version, ready for data collection, consisted of 29 items to assess the communication factors and five to assess effective communication. The questionnaire assessing communication factors was reliable, with a Cronbach's alpha value of 0.921. The questionnaire on effective communication was reliable, with a Cronbach's alpha value of 0.681.

The data was collected from pharmacy customers from November 2022 to April 2023 using Google Forms. Respondents were taken by contacting pharmacy customers in the Denpasar city area using social media. The research obtained Ethical Clearance No. 2089/UN14.2.2.VII.14/LT/2022 from the Research Ethics Committee of the Faculty of Medicine, Universitas Udayana. Respondents' answers were scored on a Likert scale (1-4 for environmental conditions and pharmacy services assessment, 1-5 for patient understanding assessment). The total score was grouped in binary through a coding process. If the patient assesses environmental conditions and pharmacy services above the average score of total respondents, the effective communication factor is classified as "supportive"; otherwise (if the score of certain respondents is below the average score of total respondents), the environmental conditions and pharmacy services is classified as "not supportive." If the respondent's score is above the average effective communication score of total respondents, then the effective communication is classified as "occur." Effective communication is classified as "not occurred" if the respondent's score is below the average satisfaction score.

Descriptive analysis was used to obtain an overview of the data. The characteristics of the respondents were described using frequency distributions to depict the background of the data providers. The influence of each communication factor on effective communication in receiving drug information was examined using bivariate chi-square tests. Prediction model Logistic regression analysis with a backward method was used to determine the predisposing factors of effective communication in providing drug information. Respondent's characteristics can be a cofounder of the study. Risk factor models using logistic regression analysis with the enter method were used to determine confounding factors that interfere with the effect of the independent variable on the dependent variable. All statistical tests were conducted at a 95% confidence interval (CI) using SPSS Statistics Version 22 (IBM Corp., Chicago, USA).

RESULTS AND DISCUSSION

This study collected data from 100 respondents who met the criteria and provided complete information. The pharmacies evaluated by the respondents were evenly distributed across four districts in the Denpasar City area (25 respondents for each district). Table 1 describes the characteristics of the study respondents. The respondents in the study were predominantly female (72%), most respondents (86%) were in the adult age range (20-44 years), and 54% of the respondents were non-healthcare professionals.

Chi-square analysis was used to determine the influence of communication factors on the actualization of effective communication (Table 2). This study categorized communication factors into four domains: pharmacy environment/atmosphere, the appearance of pharmacy personnel, pharmacist technical competence, and pharmacist interpersonal communication competence (details are available in supplementary files “Summary of descriptive data”). There are several assessment indicators for each domain. Effective communication was assessed using indicators such as patient understanding, ability to repeat the information provided, understanding of medication use, willingness to seek additional information, and willingness to use medication according to instructions. Twenty-eight respondents reported that the communication factors in providing medication information at the pharmacies they visited were supportive and resulted in effective communication. The research findings indicate that communication factors, in general, significantly influence the dependent variable (p-value 0.011, 95% CI). Supporting communication factors provide a 3.121 times greater chance (min 1.375, max 7.084) of improving effective communication in receiving medication information.

Seventeen respondents evaluated the pharmacy atmosphere as supportive and

experienced effective communication. The indicators used to assess the pharmacy atmosphere were pharmacy noise, availability of health information brochures, and waiting time for service. Several studies have shown that the use of visual aids can help improve the effectiveness of communication between healthcare professionals and patients in a pharmacy setting. Additionally, visual aids can attract patients' attention and enhance their learning retention and memory absorption (Dowse, 2021; Hafner *et al.*, 2022). According to Dale's Cone of Experience, combining reading and listening makes it easier for individuals to remember and explain something (Sari, 2019). A comfortable atmosphere and fast service can help reduce anxiety or tension that patients may feel, making it easier for them to communicate and share important information about their health needs.

Moreover, a conducive environment can foster trust between healthcare providers and patients, enabling communication to be more open and efficient (Faisal *et al.*, 2020; Pratiwi *et al.*, 2020). Contrary to that statement, the research findings indicate that the atmosphere/environment of the pharmacy does not have a significant influence on the occurrence of effective communication (p-value 0.752, 95% CI). Pharmacies in Indonesia are primarily designed in the form of an open counter. Patients may be accustomed to the pharmacy environment, which often lacks privacy and comfort (Qudah *et al.*, 2021).

A total of 36 respondents rated the appearance of the pharmacy staff as supportive and experienced effective in communication. The appearance of pharmacy staff was assessed using several indicators, including clothing, hairstyle, cosmetics, and accessories. One's appearance is the most noticeable aspect during interactions. Initial judgments about someone are often based on their appearance. Therefore, a professional appearance should be maintained while working (Tampubolon *et al.*, 2022).

Table 1. Characteristics of Respondents

Information	Number of Respondents	Percentage
Age (year)		
Teenager: 10 - 19	-	-
Adults: 20 - 44	86	86%
Pre-elderly: 45 - 59	14	14%
Elderly: > 60	-	-
Total	100	100%
Gender (people)		
Male	28	28 %
Female	72	72 %
Total	100	100 %
Occupation		
Healthcare Professional	46	46 %
Non-healthcare Professional	54	54 %
Total	100	100 %
Place of Residence (born/raised in Bali)		
Yes	91	91 %
No	9	9 %
Total	100	100 %
Visiting the pharmacy in the last one month		
Yes	90	90 %
No	10	10 %
Total	100	100 %
Respondent's perception of their relationship with pharmacy personnel		
Not acquainted	81	81 %
Acquainted enough	10	10 %
Very well aquainted	9	9 %
Total	100	100 %

Table 2. Bivariate Analysis of Supporting Factors for Effective Communication in Receiving Drug Information.

Variable	effective		ineffective		Total	P-value	OR	CI (95%)	
	n	n / ∑ (%)	n	n / ∑ (%)				Min	Max
Communication Factors									
Supportive	28	59.6	19	40.4	100	0.011	3.121	1.375	7.084
Not Supportive	17	32.1	36	67.9					
A. Pharmacy Atmosphere									
Supportive	17	48.6	18	51.4	100	0.752	1.248	0.547	2.847
Not Supportive	28	43.1	37	56.9					
B. Appearance of Pharmacy Personnel									
Supportive	36	50	36	50	100	0.165	2.111	0.843	5.286
Not Supportive	9	32.1	19	67.9					
C. Technical Competence of Pharmacy									
Supportive	29	55.8	23	44.2	100	0.040	2.522	1.119	5.681
Not Supportive	16	33.3	32	66.7					
D. Interpersonal Communication Competence									
Supportive	29	64.4	16	35.6	100	0.001	4.418	1.901	10.267
Not Supportive	16	29.1	39	70.9					

CI, confidence interval; min-max, minimum-maximum; OR, odds ratio.

Appearance reflects a personality that is appropriate for the situation. A suitable appearance can help a communicator approach and influence others through the information conveyed (Anggarini, 2021). Despite that, the study result shows that the appearance of pharmacy personnel does not significantly affect communication (p value 0.165, 95% CI). Patients build their perceptions based on their previous experiences with pharmaceutical services (Antari *et al.*, 2019). The appearance of pharmacy personnel will be considered normal if it is similar to their previous experiences. Therefore, patients will only notice the appearance of pharmacists in communication if some unique distinction is found.

Twenty-nine respondents assessed the support of pharmacist technical competence and experienced effective communication. Competence refers to the ability to perform tasks based on skills and knowledge. This ability is supported by the work attitudes established by the occupation (Hasim *et al.*, 2018). The technical competence of pharmacy personnel in this study was assessed using several indicators, including providing explanations and solutions for medication use, selecting appropriate medications, informing patients about potential medication-related issues, providing reliable information, and being meticulous in preventing medication errors. The Chi-Square analysis indicates that the technical competence of pharmacy personnel significantly influences the occurrence of effective communication (p value 0.040, 95% CI). Effective communication is likely to occur 2.522 times higher (min 1.119, max 5.681) when pharmacy personnel have supportive technical competence in providing medication information. The performance of pharmacy personnel is highly dependent on their competencies. As stated in the research conducted by Putri (2019), pharmacy personnel can achieve optimal performance when they have competencies aligned with their profession. Competence involves various aspects, including knowledge. With deep knowledge, individuals have a higher ability to effectively apply that knowledge and communicate it to others clearly and in detail (Colnar *et al.*, 2022).

Twenty-nine respondents assessed that the pharmacist's interpersonal communication competency was supportive, and effective communication was observed. Interpersonal communication was assessed using several indicators, including a friendly, polite, and professional attitude. Other indicators included

involving patients in finding solutions to their problems, considering the price of medication, providing concise and easily understandable explanations, ensuring patient understanding of the given explanations, confidence, attentive listening, providing assurance, maintaining privacy, and understanding patient information. Interpersonal communication competency significantly impacts effective communication (p value 0.01, 95% CI) with an odds ratio (OR) of 4.481; min 1.901, max 10.267). In line with the study, Sitompul and Pohan, (2020) stated that the better interpersonal communication, the higher the motivation of the patients to recover. With this motivation, patients will pay close attention to the information provided.

A multivariate analysis is needed to determine the predisposing factors to communicate effectively in providing drug information. Multivariate analysis using Logistic regression involves all independent variables simultaneously. The analysis allows interactions and adjustments among all tested independent variables. The chi-square test was also used as a preliminary test to determine the factors that can be further tested in logistic regression. The appearance of pharmacy personnel, technical competence, and interpersonal communication competence meet the criteria to be included in the logistic regression analysis (p-value <0.25). The test results are shown in Table 3.

Only the domain of interpersonal communication competence has a significant independent influence on effective communication (Logistic Regression with a P-value of 0.008, 95% CI). Pharmacy personnel who demonstrate interpersonal communication competence are 4.751 times more likely to actualize effective communication compared to those who do not demonstrate interpersonal communication competence (adjusted OR with a range of 1.492 to 15.133). The obtained model shows an explained variance of 18.5% (Nagelkerke R2) and can correctly classify 69.0% of the cases. The significant influence of independent variables in the bivariate analysis may weaken and become insignificant in the multivariate analysis due to adjustments with other tested variables. The adjustment is presumed to have occurred in the domain of pharmacist technical competence in pharmacy. In line with the research finding, Wu *et al.*, (2021) state that patients focus more on a doctor's benevolence than their competence during interactions.

Table 3. Results of Multivariate Analysis: Communication Factors and Effective Communication in Receiving Drug Information (Before and after confounding adjustment)

Before Adjustment								
Variable	Coefficient	S.E.	Wald	df	P-value	OR	CI (95%)	
							Min	Max
Appearance of Pharmacy Personnel	0.450	0.549	0.672	1	0.412	1.568	0.535	4.596
Technical Competence of Pharmacy	-0.162	0.618	0.068	1	0.794	0.851	0.253	2.856
Interpersonal Communication Competence	1.558	0.591	6.953	1	0.008	4.751	1.492	15.133
After Adjustment								
Variable	Coefficient	S.E.	Wald	df	P-value	OR	CI (95%)	
							Min	Max
Appearance of Pharmacy Personnel	0.446	0.550	0.658	1	0.417	1.562	0.531	4.591
Technical Competence of Pharmacy	-0.192	0.620	0.096	1	0.757	0.826	0.245	2.783
Interpersonal Communication Competence	1.666	0.604	7.614	1	0.006	5.290	1.620	17.270
Age (confounding)	-0.923	0.641	2.074	1	0.150	0.397	0.113	1.396

CI, confidence interval; min-max, minimum-maximum; OR, odds ratio; SE, standard error.

The characteristics of the respondents can influence their assessment of the factors of effective communication and communication that occur in providing drug information. Researchers suspect that the characteristics of the respondents can be a confounding variable in the analysis that has been done. There are three the characteristics of the respondents can influence their assessment of the factors of effective communication and communication that occur in providing drug information. Researchers suspect that the characteristics of the respondents can be a confounding variable in the analysis that has been done. There are three characteristics of the responders who meet the requirements to be analyzed as confounding variables: age, gender, and occupation. The results of the logistic regression test using the risk factor model show that the respondent's age is proven to be a confounding variable. The test results are shown in Table 3. Considering age as confounding, interpersonal communication competence has a significant independent influence on effective communication (Logistic Regression with a p-value of 0.008, 95% CI; adjusted OR 5.290 (1.620 to 17.270)). A person's experience tends to increase with age, but an increase in age does not necessarily result in an immediate increase in understanding (Azizah and Budi, 2020). Elderly patients and those with lower levels of education often face difficulties in understanding medical information. They need more detailed explanations and additional clarification from healthcare professionals (Clarke *et al.*, 2020; Payung and Mambela, 2018)

Intelligence is closely related to the level of understanding, since individuals who can quickly grasp information tend to have an easier time understanding it (Azizah and Budi, 2020). However, Puspitasari *et al.* (2019) stated that intelligence level is unrelated to gender. Gender differences may affect the language style used, but gender does not influence the formation of effective communication between healthcare professionals and patients (Ananda and Irma, 2018). Low health literacy among patients can be a barrier to engaging patients in healthcare services (Chegini *et al.*, 2020; Listiowati *et al.*, 2023; Wahyuni *et al.*, 2021). Patients who are healthcare professionals (with good health literacy) tend to establish symmetrical communication with pharmacists that provide medication information. Healthcare professionals are more likely to understand health-related information quickly, making effective communication easier among healthcare professionals. However, occupation (Healthcare Professional/Non-healthcare Professional) and gender were not proven to be confounding variables in this study because the change in OR value shown when occupation and gender were removed from the study did not exceed 10% (Mendra *et al.*, 2021) (Details are available in the supplementary file" Statistical analysis of confounding variables")

Interpersonal communication involves the exchange of messages between two individuals or within a small group, with immediate effects and feedback. Interpersonal communication has been proven highly effective in influencing someone's attitudes, opinions, or behaviors (Dionty Putri and Abdurrahman, 2020). The interaction, relationship, and interpersonal communication between patients and healthcare professionals are interconnected and mutually influential. The process begins with face-to-face interpersonal interaction, forming an interactive, dynamic, and transactional interpersonal relationship where both parties mutually influence and interact. A quality relationship between patients and healthcare professionals is necessary to influence the patient's perception of the healthcare professional's competence, patient satisfaction, and commitment to implementing the agreed-upon plans. Furthermore, this interpersonal relationship is the foundation for effective interpersonal communication, where the individuals involved convey, understand, and accept messages and information effectively (Haq *et al.*, 2020).

The close relationship between pharmacists and patients can facilitate effective communication. The presence of a strong bond enables pharmacists to understand the patient's condition better, thus enhancing the patient's trust in healthcare professionals, understanding, and strengthening the patient's perception of the competence of healthcare providers (Antari *et al.*, 2019; Herliana and Sudharmono, 2020; Qudah *et al.*, 2021). Interpersonal communication competence influences successful message delivery in face-to-face communication, as direct communication can impact social relationships. Antari *et al.* (2019) stated that the empathy demonstrated by healthcare professionals, supported by the facilities available, can enhance public trust. Effective communication fosters understanding and an attitude of acceptance and understanding toward others' feelings.

Consequently, trust and a good relationship between healthcare providers and patients can be established (Musiana *et al.*, 2020). A good relationship between healthcare professionals and patients is essential for healthcare services (Listiowati *et al.*, 2023; Wang *et al.*, 2022; Wu *et al.*, 2021), as it can enhance patient satisfaction, knowledge, and understanding, as well as treatment adherence. The quality of such a relationship also serves as a primary factor in reducing tension and fostering improved verbal communication with patients (Liow, 2020).

Healthcare providers should be able to provide clear and easily understandable information to patients and offer appropriate advice and recommendations for their well-being (Firnanda *et al.*, 2022; Mamesah *et al.*, 2020). A conducive communication climate occurs in an equal/symmetric position where patients can honestly and clearly explain their conditions (Faisal *et al.*, 2020). Unfortunately, most communication between healthcare professionals and patients is asymmetric (Wang *et al.*, 2022; Wu *et al.*, 2021). Pharmacy personnel tend to be superior, while patients occupy an inferior position in providing drug information. In order to achieve symmetrical communication, pharmacists need to actively listen, ask open-ended questions, and acknowledge the patient's perspective (Wu *et al.*, 2021).

Effective communication by pharmacists is essential to improve the use of medications by patients and ensure optimal therapeutic outcomes (Ariyani and Hadiani, 2019). Pharmacists can improve patient adherence to drug therapy through appropriate strategies, including patient counseling and education (Al-Hashar *et al.*, 2018). Healthcare providers must prioritize communication with patients and deliver quality services to enhance patient satisfaction and build a solid patient-provider relationship, ultimately leading to optimal treatment outcomes and improved patient safe (Mentang *et al.*, 2019).

The authors describe the predisposing factors for effective communication in providing drug information in Figure 1. A pharmacist is an information source and must have technical competence in conveying information. In the message delivery process, a pharmacist must be able to transform the information or message they want to convey into a form that can be transmitted through communication channels (encoding). This process involves selecting appropriate words, organizing the message structure, and expressing information so the patient can understand. This process requires interpersonal communication competence. The media or communication channels used to transmit messages from a pharmacist to a patient are also important in the communication process. In this study, the channel is described as the atmosphere/environment of the pharmacy and the appearance of the pharmacy personnel. The support of these communication factors will help patients more efficiently receive and decode the messages sent by the pharmacist and interpret or translate those messages into understanding, attitudes, and patient behaviors. Qudah *et al.* (2021) stated that the role of the patient is equally important in shaping effective communication. The research findings of Junaid and Rafi (2019) also indicated that the success of communication depends on the ability of the served patients to receive information.

This study has opened many exciting variables that can be further explored. The research has depicted the predisposing factors for effective communication in the patient's perspective played by the message sender (pharmacist) in certain environmental conditions. According to Wang *et al.* (2022), the evaluation of doctor-patient communication should focus on the patient's perspective. Nevertheless, different analytical perspectives are still needed to enhance the understanding of the underlying processes. More research is needed because, as stated by Guo and Wang, (2021), doctors and patients may have different assessments regarding the quality of communication. The sample taken is expected to reflect the actual population because it is taken evenly from all districts in Denpasar City. Statistical analysis was also carried out by considering various factors to ensure the external validity of the study result. However, this research also has limitations. This study utilized a questionnaire as the research instrument. A questionnaire is a self-reporting tool with certain assumptions that must be met. Respondents' answers were influenced by their background. Although several demographic factors have been considered confounding variables, the education level of respondents could not be analyzed in this study due to the limited data collected. Additionally, the cross-sectional design has limitations in depicting causal relationships and the underlying processes. Further research that delves deeper and clarifies the causal relationships and processes is still needed.

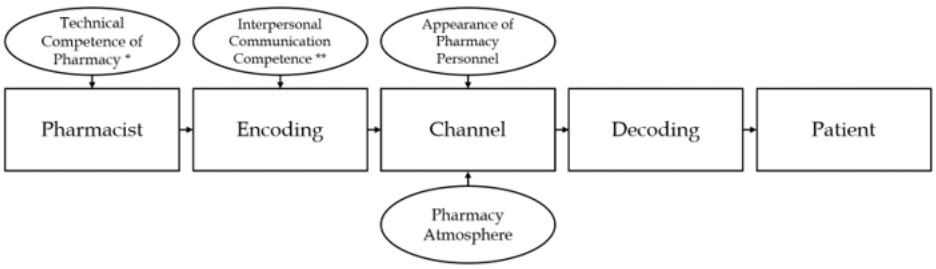

Figure 1. Effective Communication Between Pharmacist and Patient During Delivering Drug Information based on Shannon-Weaver (1949) model of communication

CONCLUSIONS

The communication factors (pharmacy atmosphere, pharmacist appearance, technical competence of pharmacists, and interpersonal communication competence of pharmacists) generally have a significant influence on effective communication during drug information delivery (Chi-Square test with a p-value of 0.011, 95%CI; OR 3.121; 1.375-7.084). According to the Chi-Square test, the technical competence of pharmacists and interpersonal communication competence significantly affect effective communication. In the multivariate analysis (Logistic Regression), only interpersonal communication competence significantly impacts the realization of effective communication (p-value 0.006, 95% CI; Adjusted OR 5.290; 1.620-17.270, with age as a confounder for the result). Pharmacists should possess interpersonal communication competence and strong pharmacy knowledge to ensure patient understanding and commitment to proper medication use. Therefore, intensive training in interpersonal communication should be provided to support the pharmaceutical knowledge of pharmacists practicing in community pharmacies.

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CONFLICT OF INTEREST

The authors declare that there is no significant competing financial, professional, or personal interests that might have affected the research performance.

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