

Outpatients' preference and associated factors for pharmacist counseling medium at University of the Philippines-Philippine General Hospital

Kriza Rosette A. Cadorna¹, Jesca Joi A. Macalalad¹, Krizza Camilla M. Santos¹ and Mac Ardy J. Gloria^{1,2,*}

¹ College of Pharmacy, University of the Philippines Manila, Manila, Philippines

² Department of Pharmacy, College of Pharmacy, University of the Philippines Manila, Manila, Philippines

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* Corresponding author
Department of Pharmacy, College of
Pharmacy, University of the Philippines
Manila, Manila, Philippines
E-mail: mjgloria@up.edu.ph

ABSTRACT

Patient medication counseling uses various communication media to optimize patient-centered pharmaceutical care. However, studies on assessing patients' preferences for these communication media and their predictors have been limited nationally and globally. Hence, this study aimed to determine outpatients' preference for patient counseling communication media at the University of the Philippines-Philippine General Hospital (UP-PGH). It employed a descriptive, correlational design and purposive sampling technique among adult Filipino outpatients in UP-PGH pharmacies. A total of 159 respondents participated in the study. Majority were 41–60 years old, female, married, from urban areas, high school graduates, unemployed, and had an income below PhP 20,000 (USD 400). Results showed that they had high knowledge on patient counseling, were very satisfied with their experiences, and were willing to be counseled by a pharmacist. Overall, face-to-face was the most preferred communication medium. Among the studied variables, education ($p=.035$, adj $R^2=0.22$) significantly predicted preference for text messaging. Age ($p=.008$, adj $R^2=0.038$), knowledge score ($p=.007$, adj $R^2=0.075$), and residence ($p=.035$, adj $R^2=0.096$) predicted preference for telephone medium. Age ($p=.001$, adj $R^2=0.142$), education ($p<.001$, adj $R^2=0.090$), and willingness ($p=.004$, adj $R^2=0.182$) predicted preference for online medium. However, these predictors only explained less than 20% of their preference for communication medium for patient medication counseling. Other variables not included in the study may significantly influence the variability of the respondents' perception on patient medication counseling medium, like their medication usage and health status.

Key words: outpatients' preference, patient counseling, counseling communication media, UP-PGH, Philippine General Hospital

1. Background

Together with other healthcare professionals, pharmacists have an essential role in improving patients' healthcare outcomes. The scope of practice of the pharmacy profession has significantly expanded throughout the years, shifting from a product-centered to a patient-centered service focusing on improving patients' health outcomes (Dahiya et al., 2012; Kelly et al., 2014). Patient-centered pharmaceutical service requires collaborative work among patients and other healthcare professionals to promote health and ensure safe and effective drug regimens. One of the patient-centered pharmaceutical services is patient medication counseling

(Loquias and Robles, 2012). Patient counseling is the process in which healthcare professionals attempt to increase patient knowledge on healthcare issues. Performing patient counseling helps the patients recognize the importance of their well-being, improves the coping strategies of the patients to deal with medication side effects, motivates them to take medicine for improvement of their health, and makes them well-informed, efficient and adherent toward disease treatment and self-care management (Ashokkumar, N.D.). A good patient interview performed by the pharmacist is a foundation for good patient medication counseling (Earl and Reinhold, N.D.). Failure by a hospital pharmacist to communicate with patients effectively may affect the patients'

understanding of the medication issues contributing to medication non-adherence (Chevalier et al., 2016).

Traditionally, doctors are viewed as the dominant healthcare professionals and, therefore, are more trusted by the population regarding their health (Cooper et al., 2011; van Geffen et al., 2011). In the Philippines, one of the top six perceived barriers to the provision of pharmaceutical care in both private and public hospitals, as identified by Agaceta et al. (2014), is the lack of patient demand for pharmaceutical care services, which include patient medication counseling. This may be because pharmacists are traditionally known and expected only to “mainly practice dispensing” (Ocampo, 2012). However, one of the roles of pharmacists as medication managers and counselors is to help patients achieve the optimum benefits of medication. The University of the Philippines-Philippine General Hospital (UP-PGH) is one of the five hospitals in the country that have invested in pushing pharmacists to take their roles as medication managers and counselors actively (Samaniego, 2011). However, according to the PGH Pharmacy Department data, an average of only 113 out of 9,800 (1.15%) patients are being counseled by pharmacists in the said hospital every month. Face-to-face counseling is presently used as the medium of communication with patients. The service is free of charge, and all patients are encouraged to avail it.

Many new technologies and ways can enhance counseling, such as online counseling, computer-mediated therapy, and distance counseling (Reljic et al., 2013). According to Timothy Dy Aungst (Erickson, 2013), technology allows hospital pharmacists to counsel more patients, provide greater visibility on hospital floors, and expand clinical roles. With these, patient medication counseling can be conducted through different communication media like face-to-face, text message, telephone, and online counseling, which can address barriers to patient medication counseling. Other media, such as online, text messaging, and telephone counseling, have been developed and used in other countries. In UP-PGH, only face-to-face counseling is presently being offered.

Currently, in the Philippines, there are limited studies regarding patients' preference for communication media for patient medication counseling, and there are no studies that focus on the factors that may affect the preference for counseling media. To provide a patient-centered counseling service and improve the ways pharmacists can reach out to patients, patients' preference regarding communication media for patient medication counseling and the factors that may affect it must be considered.

The study generally aims to determine the UP-PGH outpatients' preference for communication medium for patient counseling. Specifically, it aims to (1) describe outpatients' socio-demographic characteristics in terms of age, sex, marital status, place of residence, highest educational attainment, occupation, and monthly family

income; (2) assess the level of knowledge of outpatients about patient medication counseling; (3) evaluate outpatients' satisfaction of prior counseling experience; (4) determine outpatients' degree of willingness to be counseled by a pharmacist and; (5) determine the predictors of preferred communication medium.

The study's results can contribute to the current provision of pharmaceutical care. The effective relay of information can be done with the knowledge of outpatients' preferred communication medium for patient medication counseling. Learning the effects of the factors on counseling medium preference of outpatients will provide a better understanding of their pharmaceutical education needs to give better patient-centered services. Patients can be offered a choice of media based on their preferences. This study may also provide information for UP-PGH in integrating an improved patient counseling service where they can incorporate more communication media in patient medication counseling. Having this in UP-PGH can be considered a model for other hospitals in the country in providing better patient medication counseling services to Filipinos.

2. Methodology

2.1. Study design

A descriptive, correlational research design was used in the study. This study described the respondents in terms of socio-demographic characteristics, level of knowledge on counseling, satisfaction with prior counseling experience, degree of willingness to be counseled by a pharmacist, and preference for communication media of patient counseling. Using cross-sectional semi-structured interview, it also determined if these factors significantly predict their preferred communication medium.

2.2. Population sampling plan

The study focused on the outpatient pharmacies (Outpatient Department Pharmacy (OPD) and Main Pharmacy) of UP-PGH. These departments offer free patient medication counseling services, and outpatients generally interact less with healthcare professionals than inpatients for their health guidance. The research study employed a non-probability sampling technique - purposive sampling technique since there were no existing records for all the outpatients in UP-PGH. Also, due to time constraints presented by the investigators' availability and data collection time allowance, this sampling offered the advantage of data collection facilitated in a short duration of time. A power analysis for a linear multiple regression f-test indicated that the minimum sample size to yield a statistical power of at least 0.95 with an alpha of .05, a small effect size ($d=0.2$), and ten (10) covariates is 132. Considering a dropout rate of 10%, at least 145 were considered in the study. Outpatients who were at least 18 years old, could read, write, communicate, and were not mentally disabled, and had prior

experience in patient counseling by a pharmacist in UP-PGH or in other institutions that were present and available at the UP-PGH OPD and Main pharmacies during pre-testing, pilot testing, and data collection period, were the target participants. The participants were approached and asked if they could lend their time. The details and the purpose of the study were then explained to the participants. The participant's consent to participate by filling out the informed consent form was obtained before conducting the interview.

2.3. Data collection procedure

A semi-structured interview was used to collect data in the study. An interview checklist was developed by adapting and modifying the questionnaires of Ely (2008), van Geffen et al. (2011), and Wang (2014). Pre-testing and pilot testing were conducted with 11 and 22 respondents. Data collection was performed with 159 respondents. The study was done with outpatients from the UP-PGH OPD and Main Pharmacy who qualified with the predetermined inclusion criteria. The interview checklist was written in both English and Filipino languages. Back translation was conducted to verify the Filipino version of the interview checklist under the guidance of a professor at a university. Data collection was conducted for one month, and the time varied depending on the investigator's availability.

2.4. Instrumentation

The interview checklist was divided into five different parts, namely: (1) socio-demographic characteristics; (2) knowledge on patient medication counseling; (3) satisfaction with prior patient medication counseling experience; (4) willingness to undergo patient medication counseling; and, (5) preferred communication media for patient counseling. All parts underwent reliability and validity testing.

The first part gathered the socio-demographic characteristics of the respondents, namely age, sex, marital status, place of residence, highest educational attainment, occupation, and monthly family income.

The second part is a developed nine-item checklist, which was answered by true or false, to assess the knowledge of the respondents about patient medication counseling. The number of items answered correctly will determine the scores. A mean percentage score of 80.01–100.00 is very high, 60.01–80.00 is high, 40.01–60.00 is average, 20.01–40.00 is low, and 20 and below is very low. The third part was a 9-item checklist, adopted and modified from questionnaires developed by Ely (2008) and van Geffen et al. (2011), evaluating their satisfaction with their previous patient medication counseling experiences. Respondents were asked for their level of agreement, five (5) as 'strongly agree' and one (1) as 'strongly disagree' with the statements. A mean score of 4.50–5.00 means very satisfied, 3.50–4.49 is satisfied, 2.50–3.49 is neutral, 1.50–2.49 is dissatisfied, and 1.00–1.49 is very dissatisfied. The fourth part asked the

respondents for their degree of willingness by answering 'willing, somewhat willing, undecided, not really willing, and not willing.' The reason/s for their answer and when and what situations where they were willing to undergo patient medication counseling were also included. The last part included the availability of information and communication technology resources such as gadgets, load, internet access, use of email, and online messaging services. Respondents were asked how frequently they use text messaging, telephone, and online platforms. In addition, respondents were asked to choose their most (rank score of 4) to least (rank score of 1) preferred communication medium in the stated situations, describing different criteria addressing barriers to counseling (effective communication, nonverbal communication, confidentiality, affordability, accessibility, and ease of use). This also included overall preference and why they chose their preferred medium.

Since the interview checklist was adapted from several studies and modifications were made, it was subjected to pre-testing to establish its validity and reliability. Cronbach alpha and KR20 were used to test the reliability of the instrument. The interview checklist was checked and validated by experts in the field of pharmacy. The second, third, and fifth parts of the instrument have reliability coefficients of 0.78, 0.81, and 0.78, respectively. After applying the necessary adjustments, pilot testing was conducted to evaluate the feasibility, costs, time, and possible unexpected events. Data collected from the pre-test and pilot tests were excluded from data analysis.

2.5. Data processing and analysis

Mean and Frequency were used to present the descriptive results of the study. In addition, Statistical Package for Social Sciences version (SPSS) version 20 was used to analyze the data. Stepwise Multiple Regression Analysis, specifically forward selection regression, was used to determine the best set of predictors of the different communication media preferences of the respondents. All results with $p < .05$ were considered significant.

2.6. Ethical approval

As this study involved human respondents, considerations regarding informed consent, voluntary aspects of participation, and confidentiality of data and information were addressed. Ethical approvals were granted by the University of the Philippines Research Ethics Board (UPM REB) and the Expanded Hospital Research Office of PGH (PGH-EHRO) before conducting the study. Approval from UPM REB was received on February 27, 2018. The permit from PGH-EHRO was received on March 19, 2018.

3. Results

3.1. Socio-demographic characteristics

A total of 159 respondents participated in the study. As seen in Table 1, most of the respondents in UP-PGH

Table 1. Socio-demographic characteristics of the outpatients (n=159).

Variable	Descriptor	N	%
Age	18–25 years old	20	12.58
	26–40 years old	53	33.33
	41–60 years old	63	39.62
	>60 years old	23	14.47
Sex	Male	24	15.09
	Female	135	84.91
Marital Status	Single	44	27.67
	Married	94	59.12
	Separated	5	3.14
	Widowed	16	10.06
Place of Residence	Urban	112	70.44
	Rural	47	29.56
Highest Educational Attainment	Post-Graduate	2	1.26
	Baccalaureate	53	33.33
	Technical Vocational	15	9.43
	High School	74	46.54
	Elementary	15	9.43
	Pre-School	0	0.00
Occupation	Permanent	37	23.27
	Temporary (<i>temporary employment</i>)	3	21.89
	Contractual (<i>employment on a contract basis</i>)	10	6.29
	Part-time (<i>working less than full-time hours</i>)	7	4.40
	Not working	102	64.15
Monthly Family Income	Php 20, 000 and above	43	27.04
	Php 15, 000 – 19, 999	23	14.47
	Php 10, 000 – 14, 999	25	15.72
	Php 5, 000 – 9, 999	35	22.01
	Below Php 5, 000	33	20.75

outpatient pharmacies are 41–60 years old (39.62%), female (84.91%), married (59.12%), and living in an urbanized area (70.44%). Most had an education until high school (46.54%) and are currently unemployed (64.15%). The total family income of the patients is mostly above Php 20,000.00 (27.03%).

3.2. Knowledge on patient medication counseling

Respondents have a high level of knowledge on patient medication counseling (mean percent score=66.53 out of 100). However, misconceptions, such as patient medication counseling is only done by teaching patients about medications and is only usually done by doctors, still exist.

3.3. Satisfaction with prior patient medication counseling experience

As shown in Table 2, the respondents showed high satisfaction with prior patient medication counseling experience, with a mean score of 4.19. Most respondents strongly agreed that their prior experience was helpful (72.33%; mean=4.67) and had confidence in their counselor's knowledge (62.89%; mean=4.51). Among all the statements, the pharmacist query whether the respondent “was taking other medicines or supplements along with

prescription medication” and “experienced side effects with their medications” have the lowest mean.

Among 159 respondents, 109 (68.55%) were willing to undergo patient medication counseling, and 38 (23.90%) were somewhat willing. Respondents willing to seek medication counseling from a pharmacist said they trust pharmacists' capabilities and need more information about their medications. Those respondents who were less than willing (n=50, 31.45%) stated that they have more trust in doctors, there is unreliable information and dispensing errors from pharmacists, and limited counseling areas in pharmacies.

3.4. Information, communication and technology resources

Information, communication, and technology resources are essential for other communication media in patient medication counseling. Mobile phones are the predominantly used gadget by the respondents (94.34%), and more than half (58.67%) usually have a load. A large part of the respondents (69.81%) have access to the internet, and among them, more than half (52.83%) have email, and (61.64%) use online messaging services such as Facebook Messenger, Viber, Line, Skype, Imo, and WhatsApp.

Table 2. Satisfaction of prior patient medication counseling experience.

Statements	Mean	Description
1. The information I received from my counselor was accurate.	4.47	agree
2. The pharmacist asked for my experiences with my medication.	3.93	agree
3. The pharmacist asked whether I experienced side effects of my medication.	3.66	agree
4. The pharmacist was well acquainted with the medicines I was using.	4.42	agree
5. The pharmacist asked whether I used other medicines or supplements along with my prescription medication.	3.65	agree
6. My counselor answered my questions adequately.	4.43	agree
7. The counseling session was helpful.	4.67	strongly agree
8. My counselor was supportive.	4.03	agree
9. I had confidence in my counselor's level of knowledge.	4.51	strongly agree
Mean Score		4.19
Overall Level		High

Note: Norm (level of perception)

4.50–5.00 =	strongly agree	Overall very high
3.50–4.49 =	agree	high
2.50–3.49 =	neutral	average
1.50–2.49 =	disagree	low
1.00–1.49 =	strongly disagree	very low

Table 3. Level of preference on the communication medium for patient counseling (n=159).

Criteria	Mean Rank ± SD			
	Face to Face	Text Message	Telephone	Online
Effective Communication	3.56 ± 0.84	2.56 ± 0.82	2.35 ± 0.9	2.10 ± 0.98
Non-verbal Communication	3.82 ± 0.53	2.44 ± 0.75	2.42 ± 0.82	1.97 ± 0.91
Confidentiality of information	3.54 ± 0.86	2.69 ± 0.75	2.54 ± 0.88	1.98 ± 0.93
Affordability	3.13 ± 1.04	2.83 ± 0.90	2.46 ± 0.94	2.19 ± 1.03
Accessibility	2.99 ± 1.10	2.95 ± 0.85	2.52 ± 0.93	2.26 ± 1.07
Ease of use	2.72 ± 1.16	2.93 ± 0.88	2.62 ± 0.92	2.28 ± 1.11
Mean Preference	3.29 ± 0.92	2.73 ± 0.83	2.48 ± 0.90	2.13 ± 1.01

In the daily lives of the respondents, most tend to use online communications (40.88%) compared to text messaging (39.62%) and telephone (15.09%). Telephone is the least frequently used communication medium, with about half (50.31%) of the respondents who do not use it.

3.5. Preferred communication medium for patient counseling

The respondents have different preferences with respect to the different situations addressing the barriers to counseling. Overall, as shown in Table 3, face-to-face is the most preferred communication medium for patient counseling and online is the least preferred communication medium for patient counseling by the respondents regarding the criteria in addressing the barriers to patient counseling. In all criteria except the ease of use, face-to-face had the highest level of preference. This is followed by text messaging, phone, and online being the last. For ease of use, text messaging has the highest level of preference; followed by face-to-face and telephone; and online still has the lowest level. Meanwhile, online ranked least in all criteria. Most respondents stated that they would still seek a pharmacist personally because they can obtain a more extended explanation, and the exchange of information is easier than with other media.

3.6. Predictors of communication medium preference for patient counseling

With forward stepwise regression analysis, the variables were deemed significant predictors of the preference for the different communication media for patient medication counseling. Stepwise regression is a hierarchical regression method where statistical algorithms choose predictors. It starts without any predictors and adds significant ones until a stopping point is reached. The F-statistic and p-value are used as criteria for a predictor's inclusion in the model (Forward Stepwise Regression, n.d.). Initially, all the ten (10) variables (age, sex, marital status, place of residence, highest educational attainment, occupation, monthly family income, level of knowledge on patient medication counseling, level of satisfaction with prior patient medication counseling experience, willingness to be counseled by a pharmacist) were entered into the stepwise regression analysis for all the communication media. These variables were added/removed one by one on the model based on their partial F-test result, particularly on the set significance level (.05). Only the variables that attained the set significance level were entered into the regression model. The others, which failed to attend significance, were removed.

For the face-to-face medium, no variables were

Table 4. Best set of predictors communication medium preference for patient counseling resulting from stepwise multiple linear regression analysis.

Step	R	R Square	Adjusted R ²	Std. Error of Estimate	Change Statistics		
					R Square change	F Change	Sig F
Text Message							
1	0.167 (a)	0.028	0.022	0.58590	0.028	4.531	0.035
Telephone							
1	0.210 (b)	0.044	0.038	0.67566	0.044	7.218	0.008
2	0.295 (c)	0.087	0.075	0.66241	0.043	7.344	0.007
3	0.336 (d)	0.113	0.096	0.65501	0.026	4.546	0.035
Online							
1	0.309 (a)	0.090	0.090	0.77007	0.096	16.631	<0.001
2	0.391 (e)	0.153	0.142	0.74780	0.057	10.488	0.001
3	0.445 (f)	0.198	0.182	0.72989	0.045	8.749	0.004

Note: a. Predictors: (Constant), highest educational attainment
 b. Predictors: (Constant), age
 c. Predictors: (Constant), age, knowledge
 d. Predictors: (Constant), age, knowledge, place of residence
 e. Predictors: (Constant), highest educational attainment, age
 f. Predictors: (Constant), highest educational attainment, age, willingness

determined to be significant predictors of the respondents’ preference for face-to-face communication for patient medication counseling.

For the text message medium, the highest educational attainment (HEA) (p=.035, adj R²=0.22) is the best predictor as the preferred communication medium (see Table 4). The respondent’s highest educational attainment, with a standardized beta of –0.167, is a negative predictor for using text message as a communication medium. The regression model is as follows:

$$\text{Use of text message as preferred communication medium} = 3.057 - 0.093 \times \text{HEA}$$

The model shows that for every level increase in educational attainment, the use of text message as the preferred communication medium decreases by 0.093 units. This means that the higher the respondent’s educational attainment, the less likely he/she is to use text message as the communication medium for patient counseling. However, the preference for text messages is only 2.2% explained by education.

For the telephone medium, Table 4 shows that three out of ten variables were significant predictors on the use of telephone as a preferred communication medium. These are age (A) (p=.008, adj R²=0.038), level of knowledge (K) (p=.007, adj R²=0.075), and place of residence (PR) (p=.035, adj R²=0.096). Among the three variables, age has the highest contribution to the preference level for telephone as a communication medium. Age has the highest standardized beta, 0.235, among the three variables. The level of knowledge has a 0.179 standardized beta, while the place of residence has –0.164. The regression model is given below:

$$\text{Use of telephone as preferred communication medium} = 1.820 + 0.182A + 0.008K - 0.247PR$$

This means that, taking level of knowledge and place of residence constant, for every unit increase in age, the preference for use of telephone increases by 0.182 units. Taking age and place of residence constant, every unit increase in the level of knowledge increases the preference for use of telephone by 0.008. Lastly, taking age and level of knowledge constant, respondent’s living in rural areas decreases the preference for the use of telephone by 0.247. This means that older respondents with higher knowledge and those living in urban areas have a higher preference for telephone. However, these variables only explain 9.6% of the preference for telephone.

For the online medium, highest educational attainment (HEA) (p<.001, adj R²=0.090), age (A) (p=.001, adj R²=0.142), and willingness (W) (p=.004, adj R²=0.182) are the best predictors of the level of utilization of online as a communication medium (see Table 4). Singly, highest educational attainment has the highest contribution to the preference level of online as a communication medium. When the variables were taken singly, highest educational attainment yielded a beta weight of 0.291. Nevertheless, when combined with age, beta weight decreases to –0.260. When the three variables are combined, the beta weight is –0.215. The respondents with high educational attainment at the same time are older and have a high level of willingness to undergo patient medication counseling contributes to a lower preference for online as a communication medium for patient medication counseling. The regression model is as follows:

$$\text{Online as a Communication Medium} = 2.860 + 0.220\text{HEA} - 0.236A - 0.208W$$

This means that taking age and level of willingness constant, for every unit increase in the highest educational attainment, the use of online as a preferred communication

medium increases by 0.220 units. Taking the highest educational attainment and level of willingness constant, every unit increase in age decreases the use of online as a preferred communication medium by 0.236. Lastly, taking educational attainment and age constant, every level increase of willingness decreases the use of online as a preferred communication medium by 0.208. Nevertheless, only 18.2% of the preference for online was explained by age, highest educational attainment, and willingness.

4. Discussion

4.1. Knowledge on patient medication counseling

The respondents understand the functions and purposes of medication counseling. However, they have the notion that counseling is just a mere medication education, typically conducted by doctors. This may be due to the current situation in the Philippines, where counseling from pharmacists is not widely practiced, leading patients to be unaware of its benefits and prioritize seeking information from their doctors (Ocampo et al. as cited by Agaceta et al., 2014). Patients may not be aware of the degree and extent of information a pharmacist can provide (Brinkerhoff et al., 2016). However, respondents know that medication counseling is beneficial for their health and is ideally practiced by pharmacists.

4.2. Satisfaction with prior patient medication counseling experience

The outpatients are highly satisfied with their prior counseling experience. They are highly satisfied with their prior counseling experience in UP-PGH and/or other institutions. Luib et al. (2022) revealed that patients who received patient medication counseling in UP-PGH from 2015–2019 appreciated the service. The process of counseling has satisfied the patient's expectations on how counseling should be conducted (Yang et al., 2016). A high satisfaction rate promotes compliance, continuity with providers, and other positive health behaviors (Raza, 2013). Since patients with prior experience in patient medication counseling were proved to be highly satisfied with the service, they may also be more likely to achieve more favorable health outcomes. This just reinforces the importance of delivering patient medication counseling services to patients. Moreover, this is one of the key components in building partnership with the patient and improving their adherence to their treatment plans (Yuliandani et al., 2022).

4.3. Willingness to be counseled by a pharmacist

Respondents who were less than willing to be counseled by a pharmacist tend to seek doctors first and are only willing to be counseled about OTC drugs. The study of van Geffen et al. (2011) showed that only one in four patients consider pharmacists as the primary source of medication information and one in six contacts them for medication problems. This

could be problematic as physicians are less accessible and affordable sources of health information, and the costly fees of physicians may not address problems promptly. Pharmacists should leverage their accessibility and improve their role in patient education.

4.4. Preference for the use of communication medium

Face-to-face communication is generally preferred as communication medium. This is similar to the study of Renn et al. (2019), where in-person or face-to-face consultation is more preferred than digital consultation. However, the outpatients expressed varied preferences depending on the barriers to patient medication counseling. For effective and non-verbal communication, face-to-face is most preferred because they can convey more meaning by using non-verbal cues. Face-to-face communication is advantageous over nonverbal communication because it can lay out all the details in one go and use body language (Ashton College, 2013). Meanwhile, for confidentiality as a barrier, face-to-face is again most preferred. Face-to-face communication allows the patients to engage a person in conversation while discussing sensitive topics and confidential information with lesser fear of conversation leakage. It reduces the possibility of misinterpretation and transforms the difficult task of relaying information into an interaction that fosters trust between two parties (Baker and Milutinovic, 2016). This communication medium is the most effective way to establish a therapeutic relationship and to provide empathy and emotional support. Also, respondents feel that this mode of communication is more authentic compared to others. Since there is less chance of technological errors that could compromise client privacy (i.e., data breaches or unwanted recording or sharing of sensitive information), face-to-face counseling provides a greater sense of safety and confidentiality (Teh et al., 2014; Renn et al., 2019). Data privacy concerns may be due to the reports on data breaches and hacking incidences (Hill and Swinhoe, 2022; Powell, 2022). Furthermore, face-to-face communication is the most preferred in terms of affordability. Maloney et al. (2012) showed that from the participant's perspective, cost-benefit analysis produced the most participant benefit from face-to-face education. Regarding accessibility, face-to-face counseling areas are more accessible for the respondents than the other modalities mentioned. However, the study of Teh et al. (2014) showed that face-to-face counseling is not significantly different from online regarding accessibility. Several studies mentioned by Molfenter et al. (2021) showed that telehealth platforms offer increased access to care. As for ease of use, text message is most preferred. This communication medium is commonly used for in-hospital communication (Prochaska et al., 2015). Ease of use is one of the most important factors influencing text messaging intention after visibility and attitude (Ceccucci et al., 2010). Furthermore, since almost all the respondents own mobile

phones and use text messaging daily, they may be more accustomed to its use. Text messaging is a feasible and effective health education tool (Datta et al., 2014).

4.5. Best set of predictors for each communication medium

For face-to-face medium, no significant predictor of preference might mean that regardless of the socio-demographic characteristics, knowledge on patient medication counseling, satisfaction with prior counseling experience, and willingness to be counseled by a pharmacist, respondents will have a high preference level for the medium. The country's default medium of patient medication counseling is face-to-face, potentially influencing results due to respondents' high satisfaction with their past experiences. A study by Kitapci et al. (2014) and Ashfaq et al. (2019) found a positive and direct influence of satisfaction on repurchase intention or the intention to use a service again, which supports this.

Outpatients with lower educational attainment prefer text messaging for health information despite studies showing that more educated people prefer technological innovations. However, those with low self-report health literacy tend to prefer text messaging and radio for health information. Although health literacy was not assessed in the study, clinical interventions using text message have been identified as appropriate for people with low health literacy (Manganello et al., 2017). The level of education of Dutch patients was a predictor of health literacy (van der Heide et al. 2013), which may indirectly explain our results. The maximum character allowance of a text message might help keep the message short and easy to understand for a low literacy population (Kazi, 2017, cited by Saeed et al., 2018). Although most studies show a positive correlation of literacy with the use of text message, some studies still show negative correlations or no significant correlation. Mixed findings reveal that literacy may correlate differently with frequency of texting, use of text jargon, knowledge on text jargons, reading, writing, and spelling (Verheijen, 2013). Therefore, further studies to explore this variable to establish its effect on the preference for using text messages are recommended.

Other factors found to be significant in a study by Ceccucci et al. (2010) are the visibility of the technology, attitude towards it, and satisfaction with the general use of text messaging as a medium. However, a negative level of satisfaction was observed, probably due to its asynchronous nature and the need to exchange messages for clarification. According to the study by Greaney et al. (2012), younger age, computer comfort, and use of SMS predicts SMS preference.

For telephone medium, the level of preference for use of telephone is directly predicted by age, knowledge score, and respondents living in urban areas. This means that older respondents with higher knowledge and living in urban areas have a higher level of preference for telephone. According to a study by AARP (2008) and Baltes et al. (1999), as cited by

Mitzner et al. (2010), older adults are aware of the impact of technology on their health and are willing to use telemedicine for diagnosing and monitoring health conditions. The more informed a patient is on a service, the more open they are to the use of innovative tools that would help their disease management.

A comparative trend between the use of ICTs in rural and urban areas showed that, particularly, 22% had access to telephone in rural areas while 80% had access to telephone in metro cities. Higher usage of landline was reported for working people in metro cities compared to residents living in towns and villages. This may be due to the wide distribution of ICTs in urbanized areas compared to rural areas (Singharoy, 2014). The same trend was observed in the study, where most of the respondents living in urban areas use telephones more often than those living in rural areas.

For online medium, those with higher educational attainment, younger age, and less than willing to undergo patient medication counseling have a greater probability of using this medium. A study by Adamides et al. (2013) showed the same result wherein it was found that younger, educated farmers, or those with tertiary education, are more exposed to new technologies, leading to increased internet usage, while older farmers lack the skills and perceive the cost as high. According to Mitzner et al. (2010), older individuals often struggle with technology due to their lack of skills to use personal computers. The inverse relationship in willingness to use online communication may be because only a few respondents prefer online communication, and they view it through email or social messaging platforms, limiting their messages or queries to only being read by pharmacists when they log-in.

All in all, patients with lower educational attainment would have a higher preference for text messaging as a communication medium. In contrast, older patients living in urban areas with a high level of knowledge on patient medication counseling would tend to prefer the use of telephone. Lastly, online platform is preferred by those who are younger and educated but are less willing to undergo patient medication counseling.

To our knowledge, this is the first local study to address outpatient's preference of communication media for patient medication counseling and its factors. The findings of this study will be significant in improving the provision of pharmaceutical care in UP-PGH and other healthcare institutions. It can aid pharmacists in their proactive role in educating and helping patients make the best use of their medicines.

There may be a limit to the representativeness of the population being studied as convenience sampling was employed. The differences in the structure and presentation of the prior counseling sessions were not evaluated. Even with an interview checklist, there were still differences in the delivery of the interviewers. However, interviewers received

the same training in patient counseling and, therefore, have similar manners in dealing with the respondent. Interviewers were also given specific guidance on defining terms commonly asked by the respondents. Furthermore, selection bias might be present in the study since most respondents have only experienced face-to-face counseling. However, there were respondents in the study who were counseled by a pharmacist through the different communication media used. In addition, the educational components among the different communication media for patient medication counseling were not controlled and may have an effect on the preference of the respondents.

5. Conclusion and Recommendations

This study, despite its limitations, described the socio-demographic characteristics of outpatients from UP-PGH Main and OPD Pharmacies. Knowledge, satisfaction with patient medication counseling experience, and willingness to undergo it were also assessed. From the studied variables, predictors of level of preference for each communication medium were identified and analyzed. Face-to-face had no significant predictor. Highest educational attainment was shown to be a significant predictor for use of text message as a medium for patient counseling. For telephone, age, knowledge score, and place of residence were the best set of predictors. Lastly, preference for online was shown to be predicted by highest educational attainment, age, and willingness to undergo patient counseling. Overall, it was found that face-to-face had the highest level of preference among respondents from UP-PGH.

Patient medication counseling through face-to-face still prevailed to have the highest level of preference despite the presence of technological advancements. Despite this, development, improvement, and/or broader dissemination of other communication media platforms to offer counseling is essential so that patient medication counseling is not only confined by traditional means but also should be continually evolving to increase its reach to more patients, thereby improving health.

To improve the implementation of this study, it is recommended to perform probability sampling for better representativeness of the population. Since the study was only able to explain less than 20% of the possible predictors of the respondents' preference of communication medium for patient medication counseling, investigation on other variables such as medication usage, health status, and introversion/extraversion attitude may be performed. Studies for each medium involving patients with prior experience of the medium can be considered since experience has been shown to be correlated with the choice of performance measures and decision-making.

Using this study as a reference, it is recommended to consider incorporating other communication media in the patient medication counseling service of UP-PGH to

maximize interaction with patients in educating and helping them improve their well-being.

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APPENDIX

INTERVIEW CHECKLIST

Interview Checklist #:

SOCIO-DEMOGRAPHIC CHARACTERISTICS

(Mga Sosyo-demograpikong Katangian)

Age: (Edad)	<input type="checkbox"/> 18-25 years old (<i>18-25 taong gulang</i>) <input type="checkbox"/> 26-40 years old (<i>26-40 taong gulang</i>) <input type="checkbox"/> 41-60 years old (<i>41-60 taong gulang</i>) <input type="checkbox"/> >60 years old (<i>>60 taong gulang</i>)
Sex: (Kasarian)	<input type="checkbox"/> Male (<i>lalaki</i>) <input type="checkbox"/> Female (<i>babai</i>)
Marital Status: (Kalagayan ng Kasal)	<input type="checkbox"/> Single/Never Married (<i>Walang asawa/Hindi kailanman nag-asawa</i>) <input type="checkbox"/> Married (<i>May asawa</i>) <input type="checkbox"/> Separated (<i>Hiwalay</i>) <input type="checkbox"/> Widowed (<i>Biyudo/Biyuda</i>)
Place of Residence: (Lugar ng Tirahan)	<input type="checkbox"/> Urban (<i>Lungsod</i>) <input type="checkbox"/> Rural (<i>Probinsiya</i>)
Highest Educational Attainment: (Pinakamataas na antas ng edukasyon)	<input type="checkbox"/> Pre-School(<i>Priskul</i>) <input type="checkbox"/> Elementary (<i>Elementarya</i>) <input type="checkbox"/> High school (<i>Hayskul</i>) <input type="checkbox"/> Technical Vocational (<i>Bokasyonal</i>) <input type="checkbox"/> Baccalaureate (<i>Kolehiyo</i>) <input type="checkbox"/> Post-Graduate (<i>Kwadrado</i>)
Occupation: (Trabaho)	<input type="checkbox"/> Permanent (<i>Permanente</i>) <input type="checkbox"/> Temporary (<i>Temporaryo</i>) <input type="checkbox"/> Contractual (<i>Kontraktwal</i>) <input type="checkbox"/> Part-time (<i>Part-taym</i>) <input type="checkbox"/> Not working (<i>Hindi nagtatrabaho</i>)
Monthly Family Income: (<i>Buwanang Kita ng Pamilya</i>)	<input type="checkbox"/> Php 20,000 and above (<i>Php 20,000 o mahigit</i>) <input type="checkbox"/> Php 15,000-19,999 <input type="checkbox"/> Php 10, 000 – 14,999 <input type="checkbox"/> Php 5,000-9,999 <input type="checkbox"/> Below Php 5,000 (<i>Mas mababa sa 5,000</i>)

KNOWLEDGE ON PATIENT MEDICATION COUNSELING***(Kaalaman sa Pagkonsulta ukol sa Gamot)***

	True (Tama)	False (Mali)	Don't Know (Hindi ko alam)
1. Medication counseling is merely a pharmacist teaching a patient about his/her medications. <i>(Ang pagkonsulta ukol sa gamot ay pawang pagtuturo lamang ng pharmacist sa kanyang pasyente ukol sa kanyang mga gamot.)</i>			
2. Medication counseling is not a necessary step in the pharmacy dispensing process. <i>(Ang pagkonsulta ukol sa gamot ay hindi kinakailangan sa proseso ng pharmacy dispensing.)</i>			
3. Only the patient and not his/her companion or family member is allowed to undergo medication counseling. <i>(Ang pasyente lamang at hindi ang kasama o kapamilya ang maaaring kumonsulta ukol sa gamot.)</i>			
4. A patient who is healthy but is taking supplements cannot undergo medication counseling. <i>(Ang isang malusog na pasyente, ngunit umiinom ng mga suplemento, ay hindi puwedeng kumonsulta ukol sa gamot.)</i>			
5. Counseling service in hospital pharmacies is free. <i>(Libre ang serbisyong konsulta ukol sa gamot sa mga botika ng ospital.)</i>			
6. Medication counseling is usually done by doctors. <i>(Ang pagkonsulta ukol sa gamot ay karaniwang ginagawa ng mga doktor.)</i>			
7. Medication counseling is ideally performed in all pharmacies, both community and hospital, in the country. <i>(Ang pagkonsulta ukol sa gamot ay dapat na ginagawa sa lahat ng pharmacy, mapakomunidad man o ospital, sa bansa.)</i>			
8. In medication counseling, adverse effects with the use of medicines as well as how to manage it are explained. <i>(Sa pagkonsulta ukol sa gamot, ang mga side effects ng paggamit ng gamot at paano ito malulunas ay naipapaliwanag.)</i>			
9. Patients don't need counseling concerning medicines familiar to him/her. <i>(Hindi na kailangan ng pasyente na kumonsulta tungkol sa mga gamot na pamilyar na sa kanya.)</i>			

SATISFACTION OF PRIOR PATIENT MEDICATION COUNSELING EXPERIENCE

(Satispaksyon sa Nakaraang Karanasan sa Pagkonsulta ukol sa Gamot)

Adapted and modified from: Ely (2008) and Geffen *et al.* (2011)

Based on your satisfaction of prior patient medication counseling experience, please rate the statements from 5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree) and 1 (strongly disagree). *(Base sa inyong satispaksyon sa naunang karanasan ng pagkonsulta ukol sa gamot, puntosan ang mga salaysay mula 5 (sobrang sumasaang-ayon), 4 (sumasang-ayon), 3 (walang pinapanigan), 2 (hindi sumasang-ayon), 1 (sobrang hindi sumasang-ayon).)*

	5	4	3	2	1
1. The information I received from my counselor was accurate. <i>(Ang impormasyong aking natanggap ay tama.)</i>					
2. The pharmacist asked for my experiences with my medication. <i>(Tinanong ako ng pharmacist tungkol sa aking karanasan sa pag-inom ng gamot.)</i>					
3. The pharmacist asked whether I experienced side effects of my medication. <i>(Tinanong ako ng pharmacist kung nakaranas ba ako ng mga side effects.)</i>					
4. The pharmacist was well acquainted with the medicines I was using. <i>(Pamilyar ang pharmacist sa mga gamot na aking iniinom.)</i>					
5. The pharmacist asked whether I used other medicines or supplements along with my prescription medication. <i>(Tinanong ako ng pharmacist kung ako ba ay gumagamit ng iba pang gamot o suplemento kasama ng aking mga gamot.)</i>					
6. My counselor answered my questions adequately. <i>(Nasagot ng pharmacist nang mahusay ang aking mga katanungan.)</i>					
7. The counseling session was helpful. <i>(Nakatulong sa akin ang pagkonsulta ukol sa gamot.)</i>					
8. My counselor was supportive. <i>(Sinusuportahan ako ng pharmacist.)</i>					
9. I had confidence in my counselor's level of knowledge. <i>(May tiwala ako sa kaalaman ng aking pharmacist.)</i>					

How many times have you been counseled before? <i>(Ilang beses na kayong nakapagkonsulta ukol sa iyong gamot?)</i>	_____		
Which communication media was used in your previous experience of medication counseling? (check all that applies) <i>(Alin dito ang ginamit na paraan sa iyong huling pagkonsulta? Icheck ang lahat ng umaayon.)</i>			
Face to Face <i>(Harapan)</i>	Text Message <i>(Text)</i>	Telephone <i>(Telepono)</i>	Online <i>(Onlayn)</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WILLINGNESS TO UNDERGO PATIENT MEDICATION COUNSELING

(Kagustuhang Sumailalim sa Pagkonsulta ukol sa Gamot)

How much are you willing to undergo patient medication counseling under a pharmacist every time you have questions or concerns regarding your medications? <i>(Gaano ninyo po kagusto na sumailalim sa pagkonsulta ukol sa gamot na ibinibigay ng pharmacist sa tuwing may katanungan kayo tungkol sa inyong gamot?)</i>				
Willing <i>(Pumapayag)</i>	Somewhat Willing <i>(Medyo pumapayag)</i>	Undecided <i>(Nag-aalinlangan)</i>	Somewhat Not Willing <i>(Medyo hindi pumapayag)</i>	Not Willing <i>(Hindi pumapayag)</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Why? Check all that applies. (*Bakit? Icheck ang lahat ng umaayon.*)

- For additional information on their medication (*Para sa karagdagang kaalaman sa kanilang gamot*)
- Due to severity of disease (*Dahil sa tindi ng sakit*)
- Others (please specify): (*Iba pa (pakitukoy):*)

When and in what situations are you willing to undergo patient medication counseling? Check all that applies. (*Sa anong mga sitwasyon ninyo gustong kumunsulta ukol sa mga gamot? Icheck ang lahat ng umaayon.*)

- There is a more economically available drug or to inquire of a more economically available drug (*Mayroong mga gamot na mas mura at kasing epektibo ng gamot na nabebenta*)
- Not feeling well (*Hindi maganda ang pakiramdam*)
- When the service is available (*Kung mayroong serbisyo*)
- Consumed all his/her medicines (*Nainum na lahat ng gamot*)
- When buying drugs (*Kapag bumibili ng gamot*)
- If others avail of the counseling service (*Kung ang iba ay ginagamit ang serbisyo*)
- With disease (*May sakit*)
- Without disease (*Walang sakit*)
- Others (please specify): (*Iba pa (pakitukoy):*)

PREFERED COMMUNICATION MEDIA FOR PATIENT COUNSELING

Do you have a gadget? (<i>Mayroon po ba kayong gadget?</i>)	<input type="checkbox"/> Yes (<i>Oo</i>)	<input type="checkbox"/> None (<i>Wala</i>)
If yes, (<i>Kung oo.</i>)		
Mobile phone (<i>Cellphone</i>)		
Telephone (<i>Telepono</i>)		
Tablet (<i>Tablet</i>)		
Computer (<i>Kompyuter</i>)		
Others: (<i>Iba pa:</i>)		
Does your mobile device, usually have load? (<i>Ang inyong cellphone po ba ay madalas mayroong load?</i>)	<input type="checkbox"/> Yes (<i>Oo</i>)	<input type="checkbox"/> No (<i>Hindi</i>)
	<input type="checkbox"/> Not applicable (<i>Hindi akma</i>)	
Do you use the Internet? (<i>Gumagamit ba kayo ng internet?</i>)	<input type="checkbox"/> Yes (<i>Oo</i>)	<input type="checkbox"/> No (<i>Hindi</i>)
If yes, (<i>Kung oo.</i>)		
Home internet connection		
Mobile data (<i>Deyta</i>)		
Others: (<i>Iba pa:</i>)		
Do you have an email address? (<i>Mayroon po ba kayong email address?</i>)	<input type="checkbox"/> Yes (<i>Oo</i>)	<input type="checkbox"/> No (<i>Hindi</i>)
	<input type="checkbox"/> Not applicable (<i>Hindi akma</i>)	
Do you use messaging services? (<i>Gumagamit po ba kayo ng mga messaging services?</i>)	<input type="checkbox"/> Yes (<i>Oo</i>)	<input type="checkbox"/> No (<i>Hindi</i>)
	<input type="checkbox"/> Not applicable (<i>Hindi akma</i>)	
If yes, (<i>Kung oo.</i>)		
Facebook messenger		
Viber		
Line		
Others: (<i>Iba pa:</i>)		

How often do you use the following communication media? (<i>Gaano kadalas mong ginagamit ang mga sumusunod</i>)						
Communication Media (<i>Medya ng Komunikasyon</i>)	Everyday (<i>Palagi</i>)	4-5 times a week (<i>4-5 beses sa isang linggo</i>)	2-3 times a week (<i>2-3 beses sa isang linggo</i>)	Once a week (<i>1 beses sa isang linggo</i>)	Never (<i>Hindi Kailanman</i>)	Don't Know (<i>Hindi ko alam</i>)
Text Message (<i>Text</i>)						
Telephone (<i>Telepono</i>)						
Online (<i>Onlayn</i>)						

In each situation, please select your choice based on your preference by ranking the communication media from 1 (most preferred) - 4 (least preferred).

(*Sa bawat sitwasyon, pumili ng inyong gusto sa pamamagitan ng pagpuntos ng medya ng komunikasyon mula 1 (pinakagusto) - 4 (pinaka hindi gusto).*)

Situation 1. (<i>Sitwasyon 1</i>). If you do not understand/there is something unclear about your medications, this medium will allow you to ask questions and obtain answers as they arise. (<i>Kapag may di ka naiintidihan ukol sa iyong medikasyon, mas madaling magtanong at makakuha ng sagot gamit ito.</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				
Situation 2. (<i>Sitwasyon 2</i>). It allows you to add meaning to what you want to say by using as many cues (body language, voice, tone, etc.) as possible. (<i>Mas nabibigyan ko ng kahulugan ang gusto kong sabihin gamit ang mas maraming pahiwatig, gamit ang medium na ito--galaw ng katawan, boses, tono, at iba pa</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				
Situation 3. (<i>Sitwasyon 3</i>). This communication medium allows to share confidential matters with your pharmacist. (<i>Mas madali kong nasasabi ang mga kompidensiyal na impormasyon sa aking pharmacist gamit ito</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				
Situation 4. (<i>Sitwasyon 4</i>). This communication media is affordable for you. (<i>Para sa inyo, ito ay mas abot-kaya</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				

Situation 5. (<i>Sitwasyon 5</i>). This communication medium is accessible for you. (<i>Mas madali kong makuha ang medium na ito</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				
Situation 6. (<i>Sitwasyon 6</i>). It is very easy to use this communication medium. (<i>Napakadaling gamitin ng medium na ito</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				
Overall, which communication media do you prefer to be used in patient medication counseling? (<i>Sa pangkalahatan, ano sa mga sumusunod ang pinakagusto mong gamitin para sa pagkonsulta ukol sa gamot?</i>)				
Communication Media (<i>Medya ng Komunikasyon</i>)	4	3	2	1
Face to Face (<i>Harap-harapan</i>)				
Text Message (<i>Text</i>)				
Telephone (<i>Telepono</i>)				
Online (<i>Onlayn</i>)				

Why? (*Bakit?*)

- Longer explanation is given (*Mas mahabang paliwanag ang naibibigay*)
- Time is limited only (*Oras ay limitado lamang*)
- More accessible (*Mas madaling makuha*)
- Cheaper (*Mas mura*)
- The exchange of information is easier to understand (*Ang palitan ng impormasyon ay mas madaling maintindihan*)
- Do not know how to use (*Hindi alam kung paano gamitin*)
- Others (please specify): (*Iba pa (pakitukoy):*)
