(Research Article)

Pharmacists' Extent of Agreement and Level of Satisfaction on Interprofessional Collaboration with Physicians: Achievement of an Effective Medication Therapy Management in Selected Regions in the Philippines

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Abstract

Over the years, numerous studies have highlighted the pharmacist's importance as a member of the patient care team. Despite this, Interprofessional Collaboration between physicians and pharmacists appears to be uncommon in ordinary practice. One of the most significant issues facing the Philippines' health care system is the inclusion of a pharmacist in the multidisciplinary team caring for the patient, as well as the integration of cutting-edge pharmaceutical services with medical care. This study employed a descriptive quantitative-comparative study that utilized a non-probability convenience-purposive sampling technique and it is conducted through an online-based platform specifically by Google Forms using an own-based questionnaire. A thirty-two (32)-item questionnaire was completed on a sample population of one hundred sixty-six (166) licensed community and hospital pharmacists from regions IV - A, IV- B, and V. Moreover, for the exploratory analysis, mean, frequency, and percentage were used and the Wilcoxon Rum Sum Test was utilized as a statistical tool to further interpret the comparative analysis. Results revealed that 100% of the respondents perceived that Interprofessional Collaboration has improved patient care services in their facility. On the other hand, the overall results show a great extent of agreement and a high level of satisfaction in both community and hospital pharmacists' Interprofessional Collaboration with physicians. Thus, the research concluded that there was no significant difference between community and hospital pharmacists' extent of agreement and level of satisfaction with regard to Interprofessional Collaboration with physicians to achieve an effective medication therapy management.

Keywords: Interprofessional Collaboration; Pharmacists; Agreement; Satisfaction; Medication Therapy Management

1. Introduction

Interprofessional Collaboration was introduced in 1972, and it is a national conversion that began when the institute of medicine first discussed the merits of team-based care and Interprofessional Education (IPE). According to the World Health Organization, this is referred to as the collaboration of multiple professionals in which they vary among their fields of expertise in order to fully maximize patient care quality in which it is also stated according to WPHA, that the goal of interprofessional collaboration is to improve the healthcare quality worldwide, through an efficient, effective, and equitable delivery of preventive, curative, and palliative services whereas healthcare providers strive to deliver high quality services within their scope of expertise [1]. This notion enables multiple professionals to understand their roles and participate equally. Team-based collaboration in the treatment of patients will most likely achieve the best

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results [2]. However, Interprofessional collaboration barely even happens in the Philippine setting, as it lacks understanding especially from healthcare providers, specifically between pharmacists and physicians, which results in barriers that include having the perceptions of superiority complex or undervalued positions, which separates them from each other. Some factors need to be considered to achieve an effective Interprofessional Collaboration, such as; shared goals, clear understanding, mutual trust and respect, exchange of ideas and recognized shared decision are characteristics and elements needed to be practiced to achieve effective Interprofessional Collaboration [3]. Several studies have shown the benefits of a pharmacist-physician collaborative practice as it enables a group of health providers with a diverse set of skills and knowledge to collaborate and achieve a common objective. Consequently, the main thrust of the study is to determine the pharmacists' extent of agreement and level of satisfaction on Interprofessional Collaboration with physicians to achieve an effective medication therapy management in selected regions in the Philippines.

2. Material and methods

2.1. Method of Research Used

The study utilized a descriptive quantitative-comparative research method.

2.2. Survey Instrument

An own-based questionnaire is used as an aiding instrument for data collection in this research and the purpose of the study. The questionnaire was prepared by incorporating the elements that promote Interprofessional Collaboration from various studies. The questionnaire is based on a Likert scale with a 4-point Likert scale and dichotomous questions that consists of 4 parts; respondents' demographic profile, perspectives on Interprofessional Collaboration, Pharmacists' extent of agreement, and level of satisfaction on Interprofessional Collaboration. The survey includes guided-response questions, in which respondents are given options for answering a series of categorical questions. Moreover, review for validity was conducted from different experts in the field for comments and improvement of its content, and to determine the reliability, pilot testing including ten (10) community and ten (10) hospital pharmacists were conducted.

2.3. Number of Respondents and Sampling Techniques

There was no data on the total number of pharmacists working in community and hospital settings in the Philippines. The Cochran technique was used to determine an appropriate sample size given a desired level of precision, confidence, and the projected percentage of the attribute existent in the population. The computed theoretical sample size obtained is 166 community and hospital pharmacists. Thus, a non-probability convenience-purposive sampling technique was employed to collect responses.

2.4. Collection of Data

The data was collected using an online survey contained in Google forms. The survey questionnaires were distributed to the consenting pharmacists via online platforms such as e-mail and social media. Consent forms were provided prior to the collection of data, therefore there was no risk in this study in view of the fact that the researchers only gathered information online, with the use of Google forms that assure researchers and respondents safety and confidentiality.

2.5. Statistical Treatment of Data

STATA 15 Special Edition (SE) was the statistical software used for generating all the data presented. For the exploratory analysis, frequency and percentage were employed. Moreover, the Wilcoxon Rank Sum Test was used to compare the extent of agreement and level of satisfaction between community and hospital pharmacists as it is a nonparametric statistical test that compares two paired groups.

2.6. Ethical Consideration

The study research protocol is presented to the Research and Evaluation Office for assessment and approval of the Institutional Ethics Review Board (IERB) of Centro Escolar University-Manila which assures that there is privacy and confidentiality throughout the process.

3. Results and discussion

The survey questionnaire contained in Google Forms was distributed to 166 community and hospital pharmacists through email and other social media platforms in selected regions in the Philippines

3.1. Sociodemographic Profile

The representative sociodemographic profile of the community and hospital pharmacists in selected regions in the Philippines was presented in Table 1. The dominant socio-demographic profile of the respondents includes the following: 44.58% are 24-35 years old, 36.78% are from Region IV-A (CALABARZON), 54.22% are from community pharmacy, 52.22% work in a chain drug store, 50% work in a tertiary hospital, 58.43% are 1-5 years in the practice, 88.89% of the community pharmacists has a work position of pharmacists, and 28.95% of hospital pharmacists has a work position of pharmacists-1.

Table 1 Sociodemographic characteristics of the respondents

Characteristics	Frequency (n)	Percentage (%)
Total Population	166	100%
Location of Respondents		
Region IV-A	61	36.75
Region IV-B	53	31.93
Region V	52	31.33
Age of the Respondents		
18-24	47	28.31
25-34	74	44.58
35-44	22	13.25
45-54	21	12.65
55-64	2	1.20
Year in the Practice		
1-5	97	58.43
6-10	36	21.69
11-15	15	9.04
16-20	4	2.41
21-25	7	4.22
26-30	3	1.81
At least 31	4	2.41
Area of Practice		
Hospital Pharmacy	76	45.78
Community Pharmacy	90	54.22
Type of Hospital Pharmacy		
Primary	19	25.00
Secondary	17	22.37
Tertiary	38	50.00
Quaternary	2	2.63

Hospital Pharmacist Position		
Chief Pharmacist	7	9.21
Pharmacist I	22	28.95
Pharmacist II	20	26.32
Pharmacist III	6	7.89
Pharmacist	21	27.63
Community Pharmacy	90	54.22
Type of Community Pharmacy		
Chain Drugstore	47	52.22
Independent Drugstore	43	47.78
Community Pharmacist Position		
Pharmacist I	6	6.67
Pharmacist II	1	1.11
Pharmacist III	3	3.33
Pharmacist	80	88.89

Most of the respondents who took part in the study's online survey belong to the millennial generation which is known to be exposed to digital technology, are socially aware, and well informed [4]. This explains their willingness to take part in online surveys.

Results have shown that Region IV – A (CALABARZON) has the highest percentage. CALABARZON is known to have the widest geographical area in all of the regions in the Philippines [5]. Thus, the high availability of pharmacists is represented by wide geographical distribution in the area.

Most of the respondents are practicing in a community pharmacy. The result is coherent with a previous study that concluded 75% of pharmacists are actively practicing in a community pharmacy [6]. This implies a high density of community pharmacists' wide distribution.

The majority of the respondents work in a chain drug store. Almost 2500 chain drug store branches were built in 2016-2017 [7].

Half of the respondents work in a tertiary hospital. In a previous study, it was stated that tertiary hospitals have the most extensive healthcare resources and are pioneers in the use of pharmacological treatment [8]. They provide provision of pharmaceutical care present in their system.

The majority of the respondents are 1-5 years in practice. Approximately fifty thousand pharmacists across the country pass the boards every year from 2016 to 2021 [9]. Therefore, the data shows that there is a high number of pharmacists new in the field.

Results have also shown that the respondents in the community practice have work positions as pharmacists. A total of 69 nations and territories reported a total of 1,580,575 community pharmacists are being operated by a pharmacist [6]. This provided an overview of the average population of pharmacists in a community pharmacy.

Hospital pharmacists have a work position of pharmacist-1. Pharmacist -I hold a great duty on issuing and maintaining supply of medications to patients ordered in the form of prescriptions [10].

3.2. Pharmacists' Perspective on Interprofessional Collaboration

Respondents' perspectives on Interprofessional Collaboration were presented in Table 2. The overall results showed that the respondents have good engagement, showed improvement, and more prioritization on Interprofessional Collaboration.

The majority of the responses between community and hospital pharmacists regarding perspective on Interprofessional Collaboration have shown that engaging in Interprofessional Collaboration is conducive in the healthcare setting gathering 94.44% from community pharmacists and 90.79% from hospital pharmacists. In addition, all of the respondents perceived that Interprofessional Collaboration has improved patient care services in their facility. As an outcome, the majority of them consider that Interprofessional Collaboration should be prioritized in the Philippine health care setting. Pharmacists' Extent of Agreement on Interprofessional Collaboration with Physicians to Achieve an Effective Medication Therapy Management

Table 2 Summary of Results on Perspective on Interprofessional Collaboration between Community and Hospital Pharmacists

	Statement	Community Pharmacists				Hospital Pharmacists			
		Yes		No		Yes		No	
		f	%	f	%	f	%	f	%
1.	Engaging in Interprofessional Collaboration is conducive in the healthcare setting.	85	94.44	5	5.56	69	90.79	7	9.21
2.	Interprofessional Collaboration has improved patient care services in their facility.	90	100.00	0	0.00	76	100.00	0	0.00
3.	Interprofessional Collaboration should be prioritized in the healthcare setting in the Philippines.	88	97.78	2	2.22	74	97.37	2	2.63

3.3. Pharmacists' Extent of Agreement on Interprofessional Collaboration

Respondents' extent of agreement was presented in Table 3. The overall results showed that the respondents have a great extent of agreement concerning Interprofessional Collaboration. Responses on the questions contribute to a high mean score. This is characterized by a total mean score of 3.69 for community pharmacists and 3.68 for hospital pharmacists.

Table 3 Summary of Results on Extent of Agreement between Community and Hospital Pharmacists

	Elements	Community Pharmacists		Hospital Pharmacists	
		Mean Rating	Verbal Interpretation	Mean Rating	Verbal Interpretation
1.	Collaboration rules	3.65	Strongly agree	3.67	Strongly agree
2.	Willingness to establish relationships	3.64	Strongly agree	3.72	Strongly agree
3.	Assertiveness	3.69	Strongly agree	3.68	Strongly agree
4.	Coordination	3.77	Strongly agree	3.76	Strongly agree
5.	Mutual trust and respect	3.73	Strongly agree	3.68	Strongly agree
6.	Communication	3.70	Strongly agree	3.68	Strongly agree
7.	Professional partnership	3.72	Strongly agree	3.66	Strongly agree
8.	Perceived behavioral control	3.69	Strongly agree	3.67	Strongly agree
9.	Shared leadership	3.63	Strongly agree	3.63	Strongly agree

10.	Mutual knowledge	3.72	Strongly agree	3.68	Strongly agree
11.	Patient-centered approach	3.77	Strongly agree	3.71	Strongly agree
12.	Attitude toward collaboration	3.61	Strongly agree	3.63	Strongly agree

*Legend: 3.26-4.00 = Strongly Agree; 2.51-3.25 = Agree; 1.76-2.50 = Disagree; and 1.00-1.75 = Strongly Disagree

Out of the 12 elements presented, for community pharmacists, patient-centered approach and coordination received a great extent of agreement among pharmacists, with a mean rating of 3.77. This outcome is coherent with the findings of another research, in which the current findings demonstrated good agreement in terms of assisting side effects management and offering medication interaction information [11]. The fundamental element for effective collaborative practice is the accordance of both pharmacists and physicians in decision-making by using their specialties to provide patient-centered care and achieve quality patient care. Coordination had the highest extent of agreement out of the twelve (12) elements presented for hospital pharmacists. This outcome is coherent with a study, stating that hospital pharmacists contribute to the reduction of readmission rates by ensuring accurate and updated patient medication lists through care coordination [12]. Hospital pharmacists ensure that every patient experiences coordinated care to prevent adverse effects and readmission rates. Thus, the results are indubitable, because hospital pharmacists agree that coordination successfully benefits the patients.

3.4. Pharmacists' Level of Satisfaction on Interprofessional Collaboration

Respondents' level of satisfaction was presented in Table 4. The overall results showed that the respondents have a high level of satisfaction with regards to Interprofessional Collaboration. Responses to the questions contribute to a high mean score. This is characterized by a total mean score of 3.59 for community pharmacists and 2.49 for hospital pharmacists.

Table 4 Summary of Results on Level of Satisfaction between Community and Hospital Pharmacists

	Elements	Community Pharmacists		Hospital Pharmacists	
		Mean Rating	Verbal Interpretation	Mean Rating	Verbal Interpretation
1.	Collaboration rules	3.56	Strongly satisfied	3.39	Strongly satisfied
2.	Willingness to establish relationships	3.59	Strongly satisfied	3.45	Strongly satisfied
3.	Assertiveness	3.50	Strongly satisfied	3.54	Strongly satisfied
4.	Coordination	3.58	Strongly satisfied	3.48	Strongly satisfied
5.	Mutual trust and respect	3.63	Strongly satisfied	3.46	Strongly satisfied
6.	Communication	3.64	Strongly satisfied	3.54	Strongly satisfied
7.	Professional partnership	3.56	Strongly satisfied	3.47	Strongly satisfied
8.	Perceived behavioral control	3.61	Strongly satisfied	3.48	Strongly satisfied
9.	Shared leadership	3.52	Strongly satisfied	3.41	Strongly satisfied
10.	Mutual knowledge	3.63	Strongly satisfied	3.58	Strongly satisfied
11.	Patient-centered approach	3.67	Strongly satisfied	3.55	Strongly satisfied
12.	Attitude toward collaboration	3.59	Strongly satisfied	3.47	Strongly satisfied

*Legend: 3.26-4.00 = Always; 2.50-3.25 = Often; 1.76-2.50 =Rarely; and 1.00-1.75 = Never

Out of the 12 elements, communication, and the patient-centered approach had the highest level of satisfaction with a mean rating of 3.67 for community pharmacists. This result is relevant in other research studies that resulted in rather than traditional pharmacy services, pharmacists want to deliver patient-centered services [13]. Pharmacists are responsible for compounding and/or dispensing, providing information to healthcare professionals, monitoring customers' drug therapies for interactions with other medications, and providing information to customers on the safe use of medications. Furthermore, mutual knowledge, which has a 3.58 mean rating is evident in hospital pharmacists. A study concluded that performance in a healthcare environment is characterized by its diversity and complexity.

Interprofessional teams with the skills and mutual knowledge are important to respond to the changing environment and complex needs of patients [14]. Therefore, the competencies in the collaboration are unique in that they integrate knowledge, abilities, and attitudes to make a judgement about the core areas that are considered crucial to Interprofessional Collaboration.

3.5 Comparison of Extent of Agreement and Level of Satisfaction on Interprofessional Collaboration between Community and Hospital Pharmacists

The comparison of community and hospital pharmacists' extent of agreement and level of satisfaction was presented in Tables 5 and 6 using Wilcoxon Rank Sum Test. It shows that all elements are within the range of 0.05 level therefore, there is no significant difference between community and hospital pharmacists' extent of agreement and level of satisfaction with Interprofessional Collaboration with physicians.

Table 5 Comparison of Community and Hospital Pharmacists' Extent of Agreement

	Elements	Z statistic	P-value	Verbal Interpretation
1.	Collaboration rules	-0.163	0.8707	No Significant Difference
2.	Willingness to establish relationships	-0.881	0.3783	No Significant Difference
3.	Assertiveness	0.105	0.9164	No Significant Difference
4.	Coordination	1.583	0.1134	No Significant Difference
5.	Mutual trust and respect	0.436	0.6629	No Significant Difference
6.	Communication	0.045	0.9640	No Significant Difference
7.	Professional partnership	0.740	0.4591	No Significant Difference
8.	Perceived behavioral control	0.329	0.7420	No Significant Difference
9.	Shared leadership	0.083	0.9342	No Significant Difference
10.	Mutual knowledge	0.698	0.4852	No Significant Difference
11.	Patient-centered approach	0.849	0.3960	No Significant Difference
12.	Attitude towards collaboration	-0.021	0.9828	No Significant Difference

*Scale for Verbal Interpretation: < 0.05 = Significant; ≥ 0.05 = Not Significant

Findings revealed that all elements are within the range of 0.05 level, therefore, there is no significant difference between community and hospital pharmacists. The results are relevant in a study in which both hospital and community pharmacists generally show willingness and agreement toward Interprofessional Collaboration with physicians [15].

Table 6 Comparison of Community and Hospital Pharmacists' Level of Satisfaction

	Elements	Z statistic	P-value	Verbal Interpretation
1.	Collaboration rules	1.863	0.0624	No Significant Difference
2.	Willingness to establish relationships	1.496	0.1348	No Significant Difference
3.	Assertiveness	-0.455	0.6493	No Significant Difference
4.	Coordination	0.913	0.3606	No Significant Difference
5.	Mutual trust and respect	1.875	0.0608	No Significant Difference
6.	Communication	1.008	0.3136	No Significant Difference
7.	Professional partnership	0.692	0.4892	No Significant Difference
8.	Perceived behavioural control	1.627	0.1037	No Significant Difference
9.	Shared leadership	0.747	0.4551	No Significant Difference
10.	Mutual knowledge	0.835	0.4036	No Significant Difference
11.	Patient-centered approach	1.590	0.1119	No Significant Difference
12.	Attitude towards collaboration	1.585	0.1130	No Significant Difference

*Scale for Verbal Interpretation: < 0.05 = Significant; ≥ 0.05 = Not Significant

It shows that the set of P-values is at more than 0.05 level; this indicates that there is no significant difference between community and hospital pharmacists. According to the result, the responses of the community pharmacist and hospital pharmacist on the level of satisfaction are just statistically the same. The result is correlated to a study that concluded both hospital and community pharmacists are heavily impacted by their work environment in terms of forming Interprofessional Collaboration [15]. This shows that pharmacists working in both hospital and community pharmacies are greatly influenced by interprofessional collaboration with physicians in medication therapy.

4. Conclusion

The results demonstrated that there is a great extent of agreement and a high level of satisfaction among pharmacists in Interprofessional Collaboration in the Philippines, specifically in Regions IV-A, IV-B, and V. It was substantiated in the results that there was no significant difference between community and hospital pharmacists' extent of agreement and level of satisfaction for they are an integral member of the interprofessional healthcare team as they serve as a patient advocate. In the overall results, pharmacists have experience and practice leadership in their collaboration with physicians which serves as a national focal point for developing knowledge and understanding of patient treatments and setting patient safety goals. They can effectively communicate with physicians on a formal basis, such as to amend prescription errors that lead to improving medication therapy management in selected regions in the Philippines. This interaction could exacerbate one of the challenges to collaboration: a lack of willingness to collaborate, which was demonstrated in the study that pharmacists agree and are satisfied with the elements and parameters of Interprofessional Collaboration.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest.

Statement of ethical approval

The study protocol and informed consent were approved by the Centro Escolar University – Institutional Ethics Review Board (CEU-IERB) last March 30, 2022.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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