

## Original Research Article

# Pharmacists - Medical Doctors Work Relationship and Its Effect on Patient Care in Benin- City, Edo State.

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## Abstract

**Purpose:** To evaluate pharmacists- medical doctors work relationship, factors that affect it and its effect on patients' treatment outcome.

**Methods:** A descriptive cross-sectional survey of registered doctors and pharmacists was conducted in five hospitals. Socio-demographics, perception of roles and services, factors that affect work relationship; areas of poor work relationship and perceived effect of pharmacists-doctors work relationship on patient outcomes were assessed with a validated structured questionnaire. Data was analyzed with SPSS Version 22 for descriptive statistics and GraphPad InStat® Version 3.0 for inferential analysis.

**Results:** About 305 (90.2%) respondents agreed that their work-relationship affects patient outcomes, 87 (88.8%) of pharmacists and 205 (85.4%) medical doctors agreed that poor communication affects their relationship. Also, 91% of the pharmacists and 77% of the medical doctors opined that joint clinical meetings as well as 96% pharmacists and 58% doctors agreed that grand ward rounds can help improve pharmacists-medical doctors work-relationship ( $p < 0.01$ ).

Similarly, many pharmacists (97%) and doctors (46%) said presence of pharmacist in the wards will significantly improve patient outcomes ( $p < 0.01$ ). About 177 (49.5 %) pharmacists and 129 (39.4%) medical doctors had a positive attitude to inter professional relationship and 185 (54.9%) pharmacists had positive influence on prescriptions. Majority, 85% of the respondents believed that collaboration will improve quality of service and interdisciplinary relationship with positive effect on patient care.

**Conclusion:** There were positive views about collaboration, doctors agreed that joint clinical meetings and pharmacists acknowledged that grand ward rounds will help enhance their work relationship. This will improve quality of service and interdisciplinary relationship with positive effect on patient care.

**Keywords:** Doctors, Pharmacists, work relationship, collaboration, patient care, communication.

**Indexing:** Index Copernicus, African Index Medicus

## Introduction

There are many cultural, attitudinal and practical differences between the professions of medicine and pharmacy that ultimately influence patient care and health outcomes despite their common history. Poor communication between doctors and pharmacists have been found to be a major source of medication error, therefore a deliberate and effective

collaboration between the two professions can improve patient care. [1] This is important for patients with chronic illnesses and/or requiring regular medication reviews. Smooth working relationship and collaboration between these health professionals is vital for the safe and efficient delivery of health care to improve patient outcomes. [2]

Modern healthcare service delivery focuses on interdisciplinary teams with greater involvement of healthcare providers that require a change in role perception and acceptance although these have been challenged by some resistance to change.[3] A healthcare system that supports effective teamwork can improve the quality of patient care, enhance patient safety and reduce workload issues among healthcare professionals.[4] Teamwork is most effective when there is clear purpose, good communication and co-ordination with active participation of all members.[5]

Understanding attitudes and barriers to collaboration between pharmacists and physicians may help with delivery of primary health care services. The increasing complexity of medication therapies underscores the need for strong working relationships between pharmacists and physicians to optimize patient care. Pharmacists-medical doctors team work is important to improve patient outcomes. A professional relationship is an ongoing interaction between two persons that observe a set of established boundaries or limits deemed appropriate under governing ethical standards. Working relationship among the various health care professionals exist but the type of work relationship that exists can affect the efficiency and productivity in the health system.[6, 7] Several studies on pharmacists- medical doctors collaborations have proven that direct patient care is still exclusively in the hands of the physician and that pharmacists' input in managing drug therapy is dependent on the physicians.[8-11] A study by Leape *et al.*, 1999 on "Pharmacist participation on physician rounds and adverse drug events in the intensive care unit" showed that the level of interaction between physicians and pharmacists in the developed world is high, resulting in safer, more effective, and less costly drug therapy.[12] However, Hager *et al.*, 2015 showed that physicians lacked an overall understanding of pharmacists' training and clinical capacity.[13] Gallagher and Gallagher, 2012 showed that there are many cultural, attitudinal and practical differences between the professions of medicine and pharmacy.[1] A potential roadblock to accepting and benefiting from a clinical pharmacist's services are the perceptions physicians might have regarding these services. Physicians are receptive to the consultative and educational services provided by pharmacists in an in-patient setting, the receptivity of an individual physician to these services is related to the value the physician attaches to the services and the physician's perception of the pharmacist's competence. [14, 15] The aim of this study is to evaluate pharmacists – medical doctors work relationship, factors that affect it and its effect on patient outcome.

## Methods

### Study design/setting

A questionnaire based descriptive cross sectional survey of registered medical doctors and pharmacists was carried out in 3 major government owned hospitals in Benin City, namely the University of Benin primary health center, Central Hospital, The University of Benin Teaching Hospital (UBTH) and Federal Neuropsychiatric Hospital (FNPH).

### Population and sampling frame

A convenient sampling of willing medical doctors and pharmacists in the three hospitals were done. Statistics of medical doctors and hospital pharmacists in Benin City were obtained from the state chapters of Nigerian Medical Association (NMA) and Pharmaceutical Society of Nigeria (PSN) respectively to serve as sampling frame.

The sample size was determined using Raosoft® Sample Size Calculator (2004), with a margin of error of 5%, confidence interval (C.I) of 95%, response distribution of 50% and population (N) of 1,230 doctors and 130 pharmacists. The sample size (n) calculated was 293 medical doctors and 98 hospital pharmacists. Calculating for a 10% non-response rate, the final sample size (n) of 322 for doctors and 108 for pharmacists was used.

### Data collection/ study instrument

The survey instrument was a 54-item self-developed questionnaire that was-administered and pre-tested on fifteen medical doctors and ten hospital pharmacists to determine content validity. The questionnaire was thereafter modified. The pretested data was not added to the final results. The instrument consisted of socio demographic data, questions on perception of roles and services provided by doctors and pharmacists, their views and actual collaboration between them, factors that affect their work relationship, areas where they have poor work relationship and perceived effect of their work relationship on patient outcomes.

### Inclusion and exclusion criteria

The inclusion criteria were registered practicing medical doctors and registered hospital pharmacists irrespective of their age and years of practice experience in the aforementioned health facilities in Benin City. Those excluded were medical doctors and pharmacists not practicing in sampled hospitals and those not willing to participate.

### Data analysis

Data collected was analyzed for descriptive analysis using the Statistical Package for the Social Sciences (SPSS Version 22). Chi square and Fishers exact test was used to compare percentages across group with the aids of Graph pad Instat Version 3.0. Also, the Likert scale was assigned numeric values of 5 to 1. Strongly agreed =5, Agree =4, undecided =3, Disagree =2 and strongly disagree

=1. This is to enable us report a single average response for each variable.

## Results

A total of 430 questionnaires were distributed to the respondents during the study. Only 338 were filled and returned by the respondents. Of these 240 were from medical doctors and 98 were from pharmacists giving a response rate of 74.5% and 90.7% respectively.

Of the 338 respondents, male medical doctors were 135 (56.3%), while female pharmacists were 56 (57.1%). Medical doctors with postgraduate qualification were 132 (55.0%) while pharmacists

with postgraduate qualification were 23 (23.5%). A total of 55 (56.1%) pharmacists and 89 (37.1%) medical doctors had practiced for less than 5 years respectively. Table 1

About 56 (57.1%) pharmacists said they always share in the responsibility of patient management while 79 (32.9%) medical doctors were of the opinion that pharmacists sometimes share in the responsibility of patient management. Only 18 (18.4%) pharmacists and 29 (12.1%) medical doctors acknowledged that they always collaborate with the other professionals. Also, 51 (52.0%) pharmacists and 80 (33.3%) medical doctors agreed that they had good work relationship in their facilities.

**Table 1:** Socio-demographic Data (n= 338)

	Variable	Pharmacist (%)	Doctor (%)	Total
<b>Sex</b>	Male	39(39.8)	135(56.3)	174(51.5)
	Female	56(57.1)	101(42.1)	157(46.5)
<b>Age (years)</b>	<30	54(55.1)	71(29.6)	125(37.0)
	31- 40	21(21.4)	125(52.1)	146(43.2)
	41- 50	15(15.3)	39(16.3)	54(15.9)
	51-60	6(6.1)	3(1.3)	9(2.7)
<b>Marital status</b>	Single	53(54.1)	87(36.3)	140(41.4)
	Married	40(40.8)	146(60.8)	186(55.0)
	Divorced	2(2.0)	5(2.1)	7(2.1)
	Separated	1(1.0)	2(0.8)	3(0.9)
<b>Educational status</b>	Graduate	74(75.5)	102(42.5)	176(52.1)
	Postgraduate	23(23.5)	132(55.0)	155(45.9)
<b>Area of practice</b>	Primary healthcare	9(9.2)	17(7.1)	26(7.7)
	Secondary healthcare	13(13.3)	50(20.8)	63(18.6)
	Tertiary healthcare	61(62.2)	159(66.3)	220(65.1)
	Private settings	5(5.1)	1(0.4)	6(1.8)
<b>Years of practice</b>	<5	55(56.1)	89(37.1)	144(42.6)
	6- 10	19(19.4)	87(36.3)	106(31.4)
	11- 15	5(5.1)	47(19.6)	52(15.4)
	16- 20	8(8.2)	11(4.6)	19(5.6)
	>20	9(9.2)	5(2.1)	14(4.1)

**Key:** DPS- Director of Pharmaceutical services.

On working relationship between them, 71 (72.4%) pharmacists said they had confidence in doctors and enjoyed working with them similarly, 153 (63.7%) doctors said they had confidence in pharmacists and enjoyed working with them. A total of 305 (90.2%) medical doctors and pharmacists agreed that better work relationship between them will improve treatment outcomes of patients.

Table 2 depicts pharmacists - doctors work relationship in various areas. Generally, most of the respondents said

they had a relatively pleasant work relationship in most of the areas. About 177 (49.5 %) pharmacists and 129 (39.4%) medical doctors had a positive attitude to inter professional relationship, and 185 (54.9%) pharmacists had positive influence on prescriptions.

Majority of the pharmacists and medical doctors had similar opinions ( $p > 0.05$ ) regarding the factors that affect their work relationship. These factors include; poor interpersonal/ intergroup communication. (pharmacists, 89%; doctors 87%), Limited opportunity for staff interaction. (pharmacists, 85%; doctors 83%),

**Table 2:** Pharmacists and medical doctors work relationship in various areas.

Work- relationship Areas	Very good Frequency (%)		Good Frequency (%)		Fair Frequency (%)		Bad Frequency (%)		Very bad Frequency (%)	
	P	MD	P	MD	P	MD	P	MD	P	MD
Inter professional communication.	20 (4.0)	9 (2.6)	100 (30)	20 (5.9)	57 (15.5)	100 (30.9)	4 (1.1)	20 (5.9)	2 (0.6)	4 (1.2)
Influence on prescription pattern.	5 (1.7)	20 (5.9)	90 (26.6)	29 (8.6)	90 (26.6)	68 (20.1)	9 (2.6)	20 (5.9)	5 (1.5)	0 (0.0)
Managing medication errors.	30 (8.9)	9 (2.5)	50 (14.8)	76 (22.5)	30 (8.8)	100 (29.6)	6 (1.7)	30 (8.9)	0 (0.0)	2 (0.6)
Generic substitution.	8 (2.4)	30 (8.4)	30 (8.8)	100 (29.6)	14 (4.1)	101 (29.9)	7 (2.0)	30 (8.8)	10 (3.0)	0 (0.0)
Hospital leadership.	2 (0.6)	7 (2.1)	30 (8.9)	50 (14.8)	49 (15.4)	101 (29.9)	48 (14.2)	20 (5.9)	14 (4.1)	2 (0.5)
Drug procurement.	7 (9.5)	25 (7.4)	29 (8.6)	100 (29.6)	99 (29.3)	44 (13.0)	9 (2.7)	20(5.9)	0(0.0)	3 (0.9)
Involvement in patient care.	9 (2.6)	20 (5.9)	17 (5.0)	90 (26.7)	76 (22.5)	80 (23.7)	30 (8.0)	3 (0.9)	8 (2.4)	0 (0.0)
Hospital work relationship.	29 (8.6)	6 (1.8)	81 (23.9)	50 (14.8)	69 (20.4)	72 (21.3)	9 (2.7)	0 (0.0)	0 (0.0)	6 (1.8)

Key: P=Pharmacists, MD =medical doctors

Desire for leadership by both professions (pharmacists, 80%; doctors 76%), and the desire for more influence by both professions; (pharmacists, 77%; doctors, 70%). Other factors are as shown in Table 3.

**Table 3:** Factors affecting Pharmacists – Medical doctors work relationship

Variables	Pharmacists			Medical doctors			p-value
	Yes (%)	No (%)	Undecided (%)	Yes (%)	No (%)	Undecided (%)	
Professional training.	74	17	9	70	15	10	0.9228
Activities of professional bodies.	63	25	12	70	14	16	0.1325
Hospital management policies.	76	14	10	76	12	12	0.8455
Difference in salaries and social status.	62	27	11	56	24	20	0.2128
Desire for leadership by both professions.	80	12	8	76	11	13	0.5126
Poor interpersonal/ intergroup communication.	89	4	7	87	7	6	0.6320
Limited opportunity for staff interaction.	85	9	6	83	8	9	0.7108
Desire for more influence by both professions.	77	10	6	70	13	15	0.1079

As regards the ways to improve the work relationship between pharmacists and medical doctors, 91% of the pharmacists and 77% of the medical doctors ( $p>0.05$ ) opined that joint clinical meetings can help improve pharmacists- medical doctors work relationship. More pharmacists (96%) than doctors (58%) agreed that

grand ward rounds will improve their work relationship. ( $p < 0.01$ ), Similarly, more pharmacists (97%) than, doctors (46%) also believed that the presence of the pharmacist in the ward will help to improve patient outcomes.  $p < 0.01$ . Table 4.

**Table 4:** Ways of improving Pharmacists- Medical doctors work relationship.

Variables	Pharmacists		Medical Doctors		Fishers exact test	
	Yes (%)	No (%)	Yes (%)	No (%)	P-value	RR
Joint clinical meetings can help improve pharmacists- Medical doctors work relationship.	91	7	77	21	0.3021	0.6964
Grand ward round will help improve pharmacists – Medical doctors work relationship.	96	2	58	40	<0.0001	13.091
Presence of a pharmacists in the wards will help improve patient care.	97	1	46	52	<0.0001	35.951
P value	0.0404		< 0.0001			

**RR = Relative risk**

On the effect of collaboration on patient management, majority, 85% of the respondents believed that collaboration should be encouraged as this will improve quality of service and interdisciplinary

relationship while very few 18.6% opined that collaboration will waste time and is costly as seen in Figure 1.

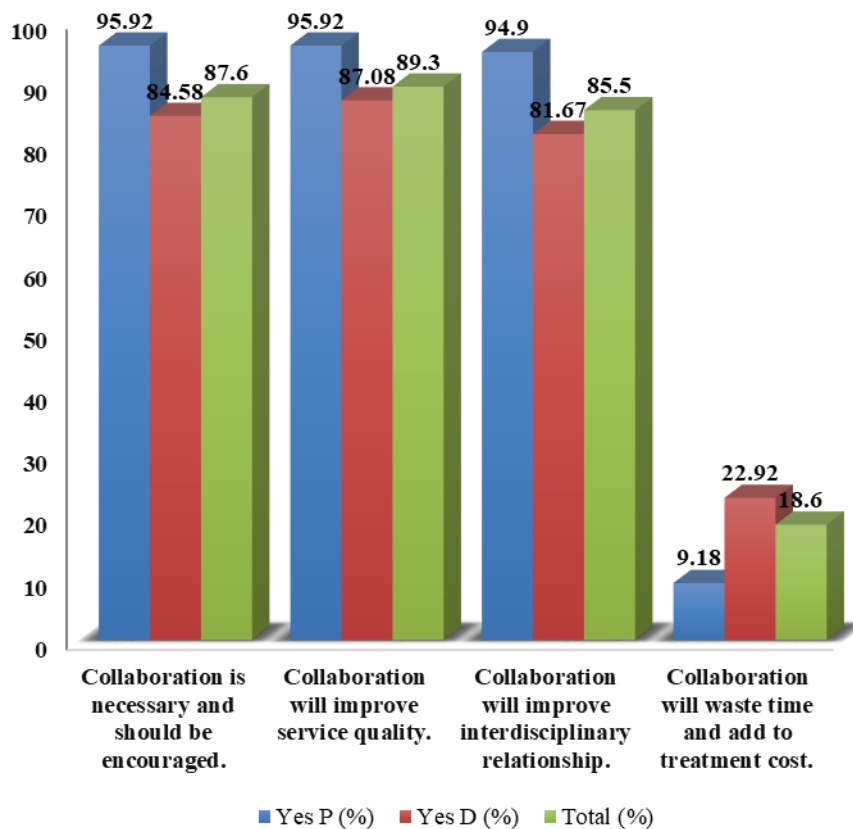


Figure 1: Views of pharmacists and Medical doctors towards Collaboration.

Overall, majority of the respondents agreed that poor work relationship had an effect on patient care as the weighted mean score was between 3.50 to 4.20 for all the items. About 278 (82.2%) of the respondents agreed that poor work relationship between doctors and pharmacists affect patient management. While,

263 (77.8%) of the respondents also agreed that poor work relationship between them can affect patient perception and utilization of health services as well as having effect on the management of drug therapy problems as shown in Table 5.

Table 5: Effect of poor work relationship on patient care. (n = 338)

Variable	Strongly agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)	Weighted Mean (WM)
Cure or management of a disease.	94(27.8)	172(50.9)	29(8.6)	33(9.8)	6(1.8)	4.00
Patient management.	96(28.4)	182(53.8)	25(7.4)	25(7.4)	5(1.5)	4.01
Patient satisfaction.	104(30.8)	159(47.0)	43(12.7)	21(6.2)	—	4.04
Patient perception and utilization of health services.	97(28.7)	166(49.1)	43(12.7)	22(6.5)	2(0.6)	4.01
Poor quality of life.	68(20.1)	111(32.8)	77(22.8)	60(17.8)	12(3.6)	3.50
Increased cost (direct and indirect) of health care.	85(25.1)	133(39.3)	54(16.0)	52(15.4)	7(2.1)	3.72
Management of drug therapy problems.	130(38.5)	162(47.9)	28(8.3)	14(4.1)	1(0.3)	4.21
Patient choice of self-medication.	93(27.5)	137(40.5)	48(14.2)	45(13.3)	7(2.1)	3.80
Patient knowledge about their ailment and medication.	98(29.0)	148(43.8)	46(13.6)	34(10.1)	9(2.7)	3.87
Increased or extended visitations to health facility.	86(25.4)	147(43.5)	39(11.5)	51(15.1)	11(3.3)	3.72

## Discussion

Most of the respondents acknowledged that better

working relationship between pharmacists and medical doctors will enhance patient outcomes. This is in agreement with the study carried out in Jos

which concluded that coordinated care between physicians and pharmacists can improve patient care outcomes [16]. This study shows that majority of the pharmacists had confidence and enjoy working together with medical doctors while many of the medical doctors agree that they enjoy working with pharmacists. Those who do not share this opinion maybe be due to some unpleasant experiences they had with the other profession in the past. This is supported by Azhar *et al.*, 2010, who reported that some medical doctors were uncomfortable with pharmacists providing direct patient care [16].

Majority of the medical doctors admitted that the role of the pharmacist is vital in-patient management. This shows that most medical doctors in these settings are aware of the need and importance of a pharmacist in patient management. Although few of the medical doctors opined that pharmacists sometimes share in the responsibility of patient management.

To some extent there is collaboration between medical doctors and pharmacists, as almost half of medical doctors said they sometimes collaborate with pharmacists, while pharmacists said they often collaborate with medical doctors in managing patients. This is despite the wide disparity in the number of pharmacists and medical doctors in the surveyed facilities. Traditionally, the ratio of pharmacist to patient in the hospitals in our setting varies from 1 to 50 to 1 to 100. For the pharmacist to function effectively as a clinical pharmacist, performing medication therapy management for acute and chronic conditions, there must be a pharmacist / patient ratio of 1 to 30 [18]. The average recommended number of pharmacists by the Pharmacist Council of Nigeria for tertiary settings is dependent on the number of bed spaces available [19]. However, pharmacists in many hospitals are concerned with traditional dispensing roles, giving them little or no time for clinical activities and collaboration with medical doctors. A study done by Leape *et al.*, 1999 showed that the level of interaction between physicians and pharmacists in the developed world is high, resulting in safer, more effective, and less costly drug therapy [12]. In a study conducted in United Arab Emirates, perceived facilitators of pharmacist-physician collaboration included awareness building and trust building, professional role definition, pharmacists' access to patient records and effective communication while the perceived barriers included patient and physician acceptance, logistic and financial problems and pharmacist competence perception [20].

Most pharmacists and medical doctors had similar opinions ( $p > 0.05$ ) about the factors that affect their work relationship. These factors include; poor interpersonal / intergroup communication, limited opportunity for staff interaction, desire for leadership by both professions, and the desire for more influence

by both professions. This is also supported by Bond *et al.*, 2002 and Matowe *et al.*, 2002, their studies showed that doctors feel comfortable and receptive to the clinical services provided by pharmacists if they do it in consultation or as support for them, but are uncomfortable with pharmacists providing direct patient care [21, 22].

In evaluating ways to improve their relationship, more than half of the medical doctors believe that joint clinical meetings with pharmacists can help improve their interaction and general rounds with pharmacists can help to improve collaboration. Almost all pharmacists agree that the presence of pharmacists in wards will help improve patient care, although only less than half of the medical doctors agreed to this, which probably explains part of the resistance to the presence of pharmacists in the wards by some of medical doctors in these facilities.

Most respondents strongly agreed that collaborative activities at student level will improve their work relationship, this is supported by Leaviss 2000 and Hughes *et al.*, 2003 who demonstrated that multidisciplinary training at both undergraduate and postgraduate level may improve mutual understanding, trust and communication [23, 24]. The combined education of pharmacy and medical students at undergraduate level will help increase their interaction and can improve work relationship during practice. In addition, joint clinical meetings between doctors and pharmacists have the potential to improve their working relationship to obtain better therapeutic outcomes for patients.

This study also revealed that respondents at the various facilities have positive opinions towards collaboration and believe that it is significantly associated with the quality of service provided. However, few doctors opined that collaboration will waste time and increase the cost of treating patients [25, 26].

Respondents' perception of the effect of poor work relationship on patient outcomes reveals that the majority of the respondents agreed that poor working relationships between them can affect patient outcomes. This is in accordance with a study by Rosenstein *et al.*, 2005 which found that disruptive attitudes affect communication and collaboration among clinicians which in turn have negative impact on patient outcomes [27].

## Conclusion

There were positive views about collaboration, doctors agreed that joint clinical meetings will improve their work relationship with pharmacists while pharmacists acknowledge that grand ward round will help improve their work relationship. Interpersonal or intergroup communication was the most common factor affecting their work relationship. Doctors and pharmacists recognize that their work

relationship affect patient outcomes mainly in the cure or management of diseases, patient care and their perception or use of health services.

## Authors contribution

We declare that this work was done by the author(s) named in this article and all liabilities pertaining to claims relating to the content of this article will be borne by the authors” All the authors made significant contribution to the study, Usifoh: Conception & Study Design, Data Analysis and Critical Review; Soni: Data Analysis and Drafting; Asemah: Conception, Data Collection and first draft.

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