(RESEARCH ARTICLE)

Direct patient care practices in community pharmacies in Bayelsa and Rivers State in the Niger Delta Area of Nigeria

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Abstract

Direct patient care practiced in community pharmacy settings remains among the best remedy to the ever-emerging meddling practices of allied health and non-health personnel in the health promotion and disease prevention function of the pharmacy profession. The professional strides for totally owning this hub, though in the progress, were not easy in prehistoric times, nor is it getting any easier now. This study determines the extent of practice carried out in direct patient activities (patient counseling, patient care and technology standards) in community pharmacies in Bayelsa and Rivers states as at the year 2017. Of the three hundred and thirty seven (337) questionnaires distributed, three hundred and twelve (312) were retrieved (92.58% retrieval rate). The questionnaire was constructed in likert form with responses as "never", "rarely", "sometimes", "often" and "always". The results were analyzed using non parametric analysis using SPSS version 23. Young male pharmacists having B.Pharm (177; 56.7%) with 6 to 10 years' experience (140; 44.9%) in self-owned premises (190; 60.8%) were observed to contribute significantly to the study domains. Pharmacists were reported to always carry out patient counseling activities (44.2%), always carry out patient care activities (35.9%) and never, apply technological applications in community pharmacies (45.9%) in the study area. Community Pharmacy Practice is below recommended standards in the two states. Improvement is needed in the hub of direct patient care to maintain the needed pharmaceutical care practice and philosophy.

Keywords: Community pharmacy practice; Pharmacy; Direct patient care; Pharmaceutical care

1. Introduction

Direct patient care in community pharmacy remains among the solutions to the ever-emerging meddling practices of allied health and non-health personnel in the health promotion and disease prevention function of the pharmacy profession [1,2,3]. The direct patient care involves making medications available at all settings and provision of pharmaceutical services and pharmacist been seven-starred [4]. The direct patient care practice is embedded in several concepts such as pharmaceutical care, evidence-based pharmacy, meeting patients' needs, chronic patient care, self-medication, quality assurances of pharmaceutical care services, clinical pharmacy, and pharmacovigilance [5].The

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community pharmacy, of all the other pharmacy settings, is at the forefront of been dogged for protecting our ethics [6] and philosophy [7]. The global common duties and regional differences in practices for community pharmacists are well enshrined in literature [8].

Domains of practice standard expectations in community pharmacy are responsible for either bringing about direct patient care (patient counseling, patient care and technology) or the proper administration processes (premises and structure regulation, practice management, and quality improvement) [9,10,11].This research work addresses the direct patient activities practiced by community pharmacists in Bayelsa and Rivers state of Niger delta.

Patient counseling is opined to be individualized and is aimed at bringing an understanding and expectation of the nature, action, uses, risks and intended outcomes of a medication. Providing resources and information, making an ongoing attempt to gather complete medication history, evaluating the patient's medication use history, performing drug- utilization review, determining the patient's level of understanding of medication therapy, providing counseling upon every first fill or upon any change to medication therapy, and providing an environment for patient counseling that secures privacy and security of patient data are among the expected counseling process [11]. The need for continuous education on this standard has been recommended in literature [12] and other reports describing the standard as shallow and general [13] and that it is always affected by state regulations [14]. In recent times, this domain is now been described as satisfactory [15] and improving [16].

Patient care or public health activities include developing, implementing, and overseeing sustainable patient centered services that are focused on improving health, patient medication use and wellness, and undertaking comprehensive medication reviews and targeted medication reviews. The above are the hub of the present medical practice. The assessment on this standard has been reported in literature as poor [17], unsatisfactory [18] or with gross need for improvement [19] in the region of the study.

Technological supports for documentation of prescription and clinical decision-support programs that facilitate the delivering of patient care services such as e-prescribing transmissions, interfacing with electronic health records (EHR), and bar-coding technology among others are the wish of the day. Managing and processing information that entails acquisition or collation, storage and transmission of information using applied computer systems – both hardware and software, and often including networking and telecommunication is becoming indispensable recently. The use of technology appeals to have more advantages than disadvantages. This appeal seems slow in actualizing in practice. The assessments are either reported as extensive but with challenges [8,20,21]. Other authors also identified enormous benefits and positive contributions [22]. The prehistory records before the 1900s and that after 1900ADs were not free of the struggle story neither do the present practice [23]. In Nigeria, the NAFDAC and PCN has the combined responsibility of regulating and controlling community pharmacy practice, and the Association of Community Pharmacists of Nigeria (ACPN) the responsibility of implementing the regulations and best practices. Inadequacies in community pharmacy practice has been reported to give room for substandard practices under the guise of Patent and Proprietary Medicine Vendor (PPMV) license operated under the umbrella of Nigerian Association of Patent and Proprietary Medicine Dealers (NAPPMED) [6]. The PCN, in its 36th Council meeting in May, 2014, approved licensed pharmacy technicians to operate PPMV outlets. Assessing direct patient care practices with a view to strengthening the needed pharmaceutical care philosophy and practice in the region of the study and the world at large is necessary at this time

2. Methods

2.1. Instrument validation and distribution

Three hundred and twenty (320) likert-type constructed questionnaires on direct patient care were distributed to community pharmacies in Bayelsa and Rivers state of Nigeria, from among a total of about five hundred (500) registered pharmacies, in the year 2017. Three hundred and twelve (312) of them were retrieved in total. The questionnaire scored average of 0.67 factor loading and 0.79 chronbach's alpha during its pilot stage. After obtaining ethical approval from the Director of pharmaceutical services (DPS) of each state, the questionnaires were distributed to community pharmacies and data was retrieved from them at their conveniences.

2.2. Data analysis

Data analysis was done in descriptive and non-parametric forms using SPSS version 23, Excel and Graph Pad Instat3. Specific questions were analyzed using descriptive statistics, needed columns were calculated with measures of central tendency values, and modal values of the different domains of the questionnaire were represented in tables and cross

tabulations done with the demographic data against that of the practice specific data to evaluate lines of relationship between them. Two sample T-test and Mann-Whitney test, ordered logistic regression and/or multinomial logistic regression were also run on the likert-form questions. Also, the binary forms, positive (to include "Always", "Often" and "Sometimes") and negative (to include "Rarely" and "Never") were expressed with binary logistic regression. Chi-square goodness-of-fit was also run at 5% alpha level to test for fitness into the expected distribution.

3. Results

3.1. Demographic Data of Respondents

Respondents in the study were more of B.Pharm holders (56.7%), male (51.6%), aged below 30years (56.7%), with 6 to 10 years experience in self-owned premises (44.9%). More pharmacies used in the study are located in Rivers state than in Bayelsa state (55.1%), in the urban areas (63.1%) with 0 to 5 staff (70.5%). (See Table 1).

Table 1 Demographic data of community pharmacists/pharmacies in Bayelsa and Rivers state, Nigeria (N=312)

Demographic data of community pharmacists/pharmacies in Bayelsa and Rivers state, Nigeria			
S/N	Question	Response label	Freq. (%)
1	Gender	Male	161(51.6)
		Female	151(48.4)
2	Pharmacist Age range in years	<30	177(56.7)
		31-40	115(36.8)
		>41	20(6.4)
3	Years after graduation	0-5	77(24.7)
		6-10	178(57.1)
		11-20	44(14.1)
		>21	13(4.1)
4	Years of experience	0-5	128(41.0)
		6-10	140(44.8)
		11-20	36(11.5)
		>21	8(2.6)
5	Qualification	B. Pharm	177(56.7)
		Pharm. D	98(31.4)
		MSc	31(9.9)
		MPH/MBA	6(1.9)
6	Ownership	Self	190(60.9)
		Employee	120(38.5)
7	Age of Pharmacy	0-5	116(37.2)
		6-10	110(35.3)
		11-20	36(11.5)
		>21	50(16.0)
8	Premises address	Bayelsa state	140(44.8)
		Rivers state	172(55.1)
9	Pharmacy location	Urban	197(63.1)
		Semi-urban	87(27.8)
		Rural	23(7.4)
10	Number of staff in the pharmacy	0 -5	220(70.5)
		6 – 10	80(25.6)
		above 11	12(3.8)

Table 2 Cross tabulation of demographics of community pharmacists/pharmacies and domain averages in Bayelsa and Rivers state, Nigeria (N=312)

Domain	Response	Gender		Pharmacist Age				Experience						Degree					Owner		Pharmacy age						Address				
		Male	Female	Below 30 years	31-40 years	41-50 years	Above 51 years	0-5 years	6-10 years	11-20 years	21-30 years	31-40 years	Above 41 years	B.Pharm	Pharm D	MSc	MPH/MBA	PhD	Self	Employee	0-5 years	6-10 years	11-20 years	21-30 years	31-40 years	Above 41 years	Urban	semi-urban	rural	Bayelsa state	Rivers State
Patient Counselling	always	3	7	6	4	0	0	6	4	0	0	0	0	6	2	1	1	0	4	5	5	3	1	1	0	0	5	3	2	5	5
	Often	4	7	5	5	1	0	5	5	0	0	0	0	6	1	3	0	0	8	3	7	2	2	0	0	0	5	4	1	5	6
	sometimes	32	33	36	25	2	3	33	26	5	1	0	0	41	17	7	1	0	37	28	27	17	7	13	2	0	38	19	8	24	41
	Rarely	42	46	50	33	4	1	22	49	13	4	0	0	47	32	9	1	0	55	31	27	38	14	10	0	0	48	31	9	38	50
	Never	80	58	80	48	10	0	61	56	17	3	0	0	77	47	11	3	0	86	52	53	49	12	20	3	0	100	29	8	68	70
Patient Care	always	11	20	15	14	1	0	18	10	3	0	0	0	19	8	3	1	0	12	19	11	7	2	10	2	0	18	9	7	16	15
	Often	10	10	8	10	0	1	9	8	3	0	0	0	11	5	3	1	0	11	9	9	4	4	3	0	0	11	9	1	11	9
	sometimes	30	32	35	23	3	2	23	28	7	3	0	0	35	21	6	1	0	40	21	19	25	9	8	1	0	35	9	8	22	40
	Rarely	48	36	55	26	3	0	26	45	11	3	0	0	51	23	9	1	0	55	29	34	35	10	6	0	0	53	10	5	35	49
	Never	61	53	64	41	9	0	51	49	12	2	0	0	61	40	10	2	0	72	41	45	39	12	17	2	0	79	9	6	55	58
Technology	always	79	65	77	57	7	2	71	59	12	2	0	0	91	32	18	3	0	76	67	64	53	8	16	3	0	101	9	11	72	71
	Often	38	34	33	32	4	2	20	33	14	5	0	0	28	33	9	2	0	48	22	20	27	14	11	0	0	41	9	8	36	35
	sometimes	6	9	9	5	1	0	8	4	2	1	0	0	8	7	0	0	0	7	8	2	7	3	3	1	0	6	9	3	6	9
	Rarely	24	21	35	10	1	0	16	26	4	0	0	0	30	12	1	2	0	33	12	22	17	3	4	0	0	27	9	3	16	29
	Never	15	23	23	11	3	1	13	20	5	0	0	0	20	16	3	0	0	27	11	11	7	8	12	1	0	22	9	3	10	28

3.2. Correlation between demographic data and the domains of practice

Strong correlations were revealed between the demographic data and the domains of practice. The correlations reveal that the modal response patterns of the demographic data were also strongly related with the modal response forms of the study domains. For instance, reported on averages, male pharmacists contributed more to the "always" reported modal response in patient counseling domain (80) and patient care domain (61) and also the "often" modal response in the technology domain (24). This and other correlations are as contained in table 2.

3.3. Patient Counseling Domains

Chi-square goodness-of-fit reveals exact significance and point probabilities of p.000 and unfitness into expectations of the domains, thus depicting inadequacies in patient counseling activities in the study environment. In patient counseling the modal pattern was "always" (44.2%) with all question items scoring "always" as response to creating ongoing relationship with patients, counseling patients through the phone, providing patient counseling that secures privacy, communicating with the deaf and blind and the unlettered, and provision of medication leaflets to patients. The positive involvement of pharmacists in this domain, upon dichotomy of responses scores 93.4% performance. The demographic characteristics were revealed to be strong indicators of patient counseling practices in the study environment. This is as shown in table 3.

3.4. Patient Care/Public Health Domain

Community pharmacies also profess an "always" mode in carrying out duties in Patient Care/Public Health Domain (35.9%). Significant unfitness to the expected standard was also observed (exact p.000). This also depicts inadequacies in patient care practices. There was a deviation in response to individual question items of the study, ranging from the response patterns of "sometimes", "often", to "always". Providing information on cancer danger signals was "sometimes". Carrying out comprehensive medication reviews, carrying out targeted medication reviews, doing cholesterol screenings, and running immunization program(s) were "often". Then the remaining twenty six (26) items in this domain has the response tag of "always". This is as shown in table 4.

Table 3 Patterns of practice of community pharmacists/pharmacies in patient counselling domain in Bayelsa and Rivers state, Nigeria (N=312)

S/n	Question item	Response in frequency and percentage						
		Never	Rarely	Sometimes	Often	Always	Negative	Positive
1	Creating patient ongoing relationship	0(0)	12(3.8)	56(17.9)	96(30.7)	148(47.4)	12(3.8)	300(96.2)
2	Counselling patients through the phone	3(0.6)	9(2.8)	100(32.1)	98(31.4)	102(32.7)	12(3.8)	300(96.2)
3	Evaluating medication use history review	19(6.1)	4(1.3)	68(21.8)	106(33.9)	115(36.9)	23(7.3)	289(92.6)
4	Providing privacy inpatient counselling	2(0.6)	8(2.6)	47(15.1)	83(26.6)	172(55.1)	10(3.2)	302(96.8)
5	Communicating with the deaf and blind	24(7.7)	21(6.7)	80(25.6)	61(19.5)5	126(40.4)	45(14.4)	267(85.6)
6	Communicating with the unlettered	4(1.3)	8(2.6)	41(13.1)	93(29.8)	166(53.2)	12(3.8)	300(96.2)
7	Providing medication leaflets to patients	17(5.4)	13(4.2)	66(21.2)	79(25.3)2	137(43.9)	30(9.6)	282(90.4)
	Mean response patterns	9.8(3.2)	11(3.4)	66(21)	88(28.2)	138(44.2)	21(6.6)	291(93.4)

P<0.0001, kW=29.891 (corrected for ties), chi-squared for trend = 10.736 (1)

Table 4 Patterns of practice of community pharmacists/pharmacies in patient care domain in Bayelsa and Rivers state, Nigeria (N=312)

S/N	Question item	Never	Rarely	Sometimes	Often	Always	Negative	Positive
	Patterns of practice of community pharmacists/pharmacies in patient care domain in Bayelsa and Rivers state, Nigeria							
		Response Pattern In Frequency And Percentage						
1	Carrying out comprehensive med. Reviews	25(8.0)	25(8.0)	51(23.4)	107(34.2)	82(26.3)	50(16.0)	262(83.9)
2	Carrying out targeted medication review	25(8.0)	24(7.7)	51(16.3)	115(36.8)	97(31.1)	49(15.7)	263(84.2)
3	Carrying out BP screening	0(0.0)	13(4.2)	42(13.4)	93(29.8)	164(52.5)	13(4.1)	299(95.8)
4	Carrying out osteoporosis screening	53(17.3)	24(7.7)	58(18.5)	94(30.1)	82(26.2)	78(25.0)	234(75.0)
5	Doing cholesterol screenings	35(11.2)	23(7.4)	61(19.5)	104(33.3)	89(28.5)	58(18.5)	254(81.4)
6	Running weight loss programs	63(20.2)	21(6.7)	50(16.0)	85(27.4)	93(29.8)	84(26.9)	228(73.1)
7	Programs to monitor patients' medication	36(11.5)	19(6.1)	63(20.2)	86(27.6)	108(34.6)	55(17.6)	257(82.3)
8	Carrying out chronic disease education programs	48(15.4)	31(9.9)	56(17.9)	95(30.5)	82(26.2)	79(25.3)	233(74.7)
9	Carrying out smoking cessation programs	63(20.2)	24(7.7)	57(18.2)	87(27.9)	81(25.9)	87(27.9)	225(72.1)
10	Running immunization programs	69(22.1)	11(3.5)	51(16.3)	101(32.3)	80(25.6)	80(25.6)	232(74.3)
11	Carrying out care transition programs	55(17.6)	13(4.1)	40(12.8)	88(28.2)	116(37.1)	68(21.7)	244(78.2)
12	Collaborating with other physicians	8(2.5)	13(4.1)	61(19.5)	97(31.1)	133(42.6)	21(6.7)	291(93.2)
13	Providing patient education/ training	19(6.1)	12(3.8)	47(15.0)	96(30.8)	138(44.2)	31(9.9)	281(90.0)
14	Evaluating gaps in care/patient medic. Needs	15(4.8)	8(2.5)	57(18.2)	105(33.6)	127(40.7)	23(7.4)	289(92.6)
15	Documenting/communicating patient care	17(5.5)	7(2.2)	64(20.5)	80(25.6)	144(46.1)	24(7.7)	288(92.3)
16	Providing advice on med. Selection	29(9.3)	10(3.2)	48(15.3)	97(31.1)	128(41.0)	39(12.5)	273(87.5)
17	Providing advice on medication problems	29(9.3)	11(3.5)	53(16.9)	82(26.3)	137(43.9)	40(12.8)	272(87.1)
18	Constantly updating staff knowledge	14(4.5)	9(2.8)	63(20.1)	66(21.1)	160(51.2)	23(7.4)	289(92.6)
19	Providing advice on alcohol and drug abuse	3(1.0)	9(2.8)	56(17.9)	80(25.6)	164(52.5)	12(3.9)	300(96.1)
20	Providing first aid to accidental poisoning	7(2.3)	9(2.8)	53(16.9)	68(21.8)	176(56.4)	16(5.1)	297(95.1)
21	Providing information on cancer signals	52(16.7)	50(16.3)	117(37.5)	49(15.7)	43(13.7)	103(33.0)	209 (66.9)

22	Education/ providing vaccination activities	86(27.6)	60(19.2)	93(29.8)	43(13.7)	30(9.6)	146(46.8)	166(53.2)
23	Providing med. assistance immigrants	86(27.6)	68(21.7)	92(29.4)	35(11.2)	31(9.9)	154(49.4)	158(50.6)
24	Providing information on malaria prevention	3(1.0)	34(10.9)	72(23.0)	57(18.3)	146(46.9)	37(11.8)	275(88.1)
25	Providing advice on HIV/AIDS awareness	12(3.9)	19(6.0)	65(20.8)	79(25.3)	137(43.9)	31(9.9)	281(90.1)
26	Providing advice on contraceptive use	7(2.2)	17(5.5)	68(21.7)	87(27.8)	133(42.6)	24(7.6)	288(92.3)
27	Advice to young mothers on breast feeding	11(3.5)	17(5.5)	59(18.9)	102(32.6)	123(39.4)	28(8.9)	284(91.0)
28	Provide counselling /Presumptive STD treatment	6(1.9)	9(2.88)	67(21.4)	97(31.0)	133(42.6)	15(4.8)	297(95.2)
29	Provision of disease education leaflets	48(15.4)	12(3.9)	60(19.2)	84(26.9)	108(34.6)	60(19.2)	252(80.8)
30	Providing drug delivery activities	21(6.7)	9(2.9)	61(19.5)	88(28.2)	133(42.6)	30(9.6)	282(90.4)
31	Providing out-of-hours services	4(1.3)	31(9.9)	10(3.2)	62(19.8)	77(24.7)	35(11.2)	149(47.8)
	AVERAGE	30(9.8)	20(6.3)	59(19.3)	84(26.9)	112(36.1)	51(16.1)	257(82.2)

P<0.0001, KW = 102.06 (corrected for ties) Mode "always", exact p.000

3.5. Technology Domain

Table 5 Patterns of practice of community pharmacists/pharmacies in technology domain in Bayelsa and Rivers state, Nigeria Responses of technology (N=312)

Patterns of practice of community pharmacists/pharmacies in technology domain in Bayelsa and Rivers state, Nigeria								
S/N	Question item	Response pattern in frequency and percentage						
		Never	Rarely	Sometimes	Often	Always	Negative	Positive
1	Maintaining e-prescriptions	158(50.6)	64(20.5)	12(3.8)	46(14.7)	32(10.2)	222(71.2)	90(28.8)
2	Securing Interface with EHRs	140(44.8)	81(25.9)	18(5.7)	44(14.1)	29(9.2)	221(70.8)	91(29.1)
3	Providing access to evidence-based references	114(36.5)	62(24.3)	8(2.5)	55(17.6)	59(18.9)	190(60.9)	122(39.1)
4	Using bar-coding technology	157(50.3)	62(19.8)	16(5.1)	52(16.6)	25(8.0)	219(70.2)	93(29.8)
5	Having back-up and cyber-security	171(54.8)	74(23.7)	11(3.5)	26(8.3)	30(9.6)	245(78.5)	67(21.4)
6	Having a continuity plan	119(38.1)	69(22.1)	23(7.3)	46(14.7)	55(17.6)	188(60.2)	124(39.7)
	Mean	143(45.8)	68(22.7)	15(4.7)	45(14.3)	38(12.2)	214(68.6)	98(31.3)

Mode "never" (45.9%), p< 0.0001, KW 26.54, CFT 1.013, exact p.000

Dire imperfection in technology domain was revealed in the study because of significant expression of unfitness to the expected standard observation (exactp.000). Technology domain revealed a negative trend "never", (45.9%), which was exhibited by all the items of the study such as maintaining e-prescription transmission, securing interface with electronic health records (EHR), providing access to appropriate evidence-based references, using bar-coding

technology, having back-up, cyber- security, and data-retrieval systems, and having a continuity plan. The observed negative trend in this domain was seen to be significantly contributed by all pharmacists in community pharmacies studied, as is shown in table 5.

4. Discussions

The successes of the study is attributable to the efforts of young pharmacists with 6-10 years experience in new pharmacies, having less than five men staffing, as was observed in the cross tabulations. Inadequacies in all domains of study were reported because of their unfitness to test of goodness-of-fit to the expected 100% level of adherence to prescribed standards of direct patient care practices.

The patient counseling result of 'always carrying out counseling activities (44.2% "always")' was in line with Owonaro et al., 2017 [15] who reported 35.5%-74.5% success on various patients counseling information provided in Bayelsa state. The above work was on the assessment of Patient Satisfaction with Pharmaceutical Services in Community pharmacies in Bayelsa state South-South of Nigeria. Other authors have described the patient counseling practices in several environments. For instance, the Daniela et al., 2019 [16] work on assessment of patient counseling on the common cold treatment at Slovak community pharmacies using mystery shopping, described their result as suboptimal. Sahar et al., 2012 [13], when working on the topic "Pharmacist–patient counseling in Dubai: assessment and Reflection on patient satisfaction" described their result as brief, basic and non-individualized. Svarstad, in 2003 [14], when working on Patient Counseling provided in Community Pharmacies: Effects of State Regulations, Pharmacists' age and busyness, also reported counseling patterns as been largely affected by state regulations. Eniojukan. 2017 [12], working on the topic "improving patient counseling through effective communication", also suggested the use of continuous education on patient and that of improvement of communication skills on the part of the pharmacist.

The reported 35.9% level of patient care activities in the region, in the words of other authors was also similar. Poor control of blood pressure among previously hypertensive patients was reported by Suleiman et al, 2013 [18], when working on the topic "Prevalence and control of hypertension in a Niger Delta semi urban community". It is in record that Ukwe C V in the 98th inaugural lecture, UNN reported high involvement in public health activities by pharmacists in Nigeria.

Poor technology use was reported among community pharmacists in the Niger Delta. Osemene et al., 2016 [21] in Benin, identified challenges of adopting technologies in community pharmacy practice. Latif et al., 2008 [8], and Sisko et al., 2011 [20] have previously reported several challenges of adopting technology in community pharmacies. David et al., 2013 [17], working on Interventions to improve community pharmacists' involvement in public health activities, in Warri Metropolis of Delta state of Nigeria concluded that there is an extensive technology use in community pharmacies in the Niger Delta.

5. Conclusion

It could be concluded from this study that the practice of community pharmacies in Bayelsa and Rivers state in the Niger Delta area of Nigeria, recorded involvement and positive trends in direct patient care activities. Though this reported extent of involvement and trend were reported to be inadequate. Pharmacists were reported to always carry out patient counseling and patient care/public health activities but never or rarely applied needed technological tools in their practices. Strengthening the already existing Mandatory Continuous Education program is recommended for sustaining pharmacy practice. Branding, reaching out, adapting and internalizing, and reorientation are the watchwords for maintaining and improving on the pharmaceutical care philosophy and practice.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest is associated with this work.

Contribution of authors

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 authors read and approved the manuscript for publication.

Statement of ethical approval

The present research work does not contain any studies performed on animal/human by any of the authors.

Statement of informed consent

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

References

[1] Berenguer B, La Casa C, de la Matta MJ, Calero MJ, Pharmaceutical Care: Past, Present and Future, Current Pharmaceutical Design, 2004 (10)31, pp. 3931-3946. Available at http://www.ingentaconnect.com/content/ben/cpd/2004/00000010/00000031/art00009

[2] Benrimoj SI, Langford JH, Berry G, Collins D, Lauchlan R, Stewart K, Dobson M. Economic impact of increased clinical intervention rates in community pharmacy. A randomised trial of the effect of education and a professional allowance. Pharmacoeconomics. 2000; 18(5): 459–68.

[3] Shumock GT, Butler MG, Meek PD, Vermeulen LC, Arondekar BV, Bauman JL. Task force on economic evaluation of clinical pharmacy services of the American College of Clinical Pharmacy: Pharmacotherapy. 2003; 23(1): 113–32

[4] WHO Consultative Group on the Role of the Pharmacist in the Health Care System (3rd: 1997: Vancouver, Canada) & World Health Organization. Division of Drug Management and Policies. (1997). The role of the pharmacist in the health care system : preparing the future pharmacist : curricular development : report of a third WHO Consultative Group on the Role of the Pharmacist, Vancouver, Canada, 27-29 August 1997. World Health Organization. https://apps.who.int/iris/handle/10665/63817

[5] Wiedenmayer K, Summers RS, Mackie CA, Gous AGS, Everard M, Tromp D. Developing pharmacy practice : a focus on patient care : handbook. 2006 ed. World Health Organization. International Pharmaceutical Federation. Geneva. https://apps.who.int/iris/handle/10665/69399

[6] Noordin, MI. Ethics in Pharmaceutical Issues. In: Clark, P. A. , editor. Contemporary Issues in Bioethics [Internet]. London: IntechOpen; 2012 [cited 2022 Mar 04]. Available from: https://www.intechopen.com/chapters/31746 doi: 10.5772/33046

[7] Stephen BD, Megan GA. A philosophical framework for pharmacy in the 21st century guided by ethical principle, Research in social and administrative pharmacy. 2018;14(3): 309-316.

[8] Latif, A., Boardman, H.F. Community pharmacists' attitudes towards medicines use reviews and factors affecting the numbers performed. Pharmacy World & Science, 2008; 30, 536-543.

[9] FIP/WHO. Guidelines on good pharmacy practice: standards for quality of pharmacy services (internet), restricted working document qas/10.352. Geneva. FIP/WHO. 1 Sept 2010. Accessed 4th May 2016. Available at https://www.who.int/medicines/services/expertcommittees/pharmprep/CLEAN-Rev2Final-GPP-StandardsQ-PharmacyServices-QAS10-352_Sept2010.pdf

[10] American Pharmacists Association (APhA) and the National Association of Boards of Pharmacy (NABP). Draft Standards for Community Pharmacy Practice Accreditation Overview and Instructions Public Comment Period June 30-August 15, 2012. (internet). Switzerland. Center for Pharmacy Practice Accreditation (CPPA). © 2012. Accessed 4th May 2016. Available at https://www.yumpu.com/en/document/view/37185909/draft-standards-for-community-pharmacy-practice-accreditation-

[11] Marialice SB. Community Pharmacy Practice Standards Open Forum. (internet). Switzerland. Amarican Pharmacists Association (APhA). © 2012. Accessed 4th May 2016Available at https://www.yumpu.com/en/document/view/37186330/community-pharmacy-practice-standards-open-forum-american-

[12] Eniojukan JF. Improving patient counseling through effective communication, West African Journal of Pharmacy. 1997; 11(1): 60-69.

[13] Hussain, Sahar & Hussain, Ali & Hussain, Kosar & Asif, Mohammad & Khalil, Marwa & Rahman, Dalia & Charara, Rima & Alsuwaidi, Shaika & AlKhani, Ragdha. (2013). Pharmacist–patient counselling in Dubai: assessment and reflection on patient satisfaction. European Journal of Hospital Pharmacy. 10.1136/ejhpharm-2012-000263.

[14] Svarstad BL. Patient Counseling provided in Community Pharmacies: Effects of State Regulations, Pharmacists' age and busyness, Journal of American Pharmacists' Association. 2003; 44(1):22-9.

[15] Owonaro AP, Eniojukan FJ, Owonaro AED, Ebinyo CN. Assessment of Patient Satisfaction with Pharmaceutical Services in Community pharmacies in Bayelsa state South-South of Nigeria, Global Journal of Pharmacy & Pharmaceutical Science, issn: 2573-2250. 2017; 2(3).

[16] Daniela M, Tomáš F, Peter M, Erika J. Assessment of patient counselling on the common cold treatment at Slovak community pharmacies using mystery shopping, Saudi Pharmaceutical Journal. 2019 (27)4, 574-583, ISSN 1319-0164. https://doi.org/10.1016/j.jsps.2019.02.005. (https://www.sciencedirect.com/science/article/pii/S1319016419300283)

[17] David UA, Azuka CO. Interventions to improve community pharmacists' involvement in public health activities, Academia Journal of Pharmacy and Pharmacology. 2013; 1(1): 001-009.

[18] Suleiman IA, Ebubechukwu OA, Kehinde AG. Prevalence and control of hypertension in a Niger Delta semi urban community, Nigeria, Pharm Pract (Granada). 2013;11(1); 24–29.

[19] Eniojukan JF, Onedo OT. Evaluation of The Knowledge and Practice of Pharmaceutical care Among Hospital Pharmacists in Secondary and Tartiary Hoospitals in Lagos State, Nigeria, World Journal of Pharmaceutical Sciences. 2015; 3(7). ISSN (Print): 2321-3310; ISSN (Online): 2321-3086. Available online at: http://www.wjpsonline.org/

[20] Sisko MH, Tribble DA. Opportunities and challenges related to technology in supporting optimal pharmacy practice models in hospitals and health systems, American Journal of health system pharmacy.2011; 68:1116-1126.

[21] Osemene, KP. and Erhun, WO. A Study of the Technology used in Community Pharmacy Practice in Nigeria. Pac. j. sci. technol.; 2016; 17(2): 329-340.

[22] Erah PO.The changing roles of pharmacists in hospital and community pharmacy practice in Nigeria, Tropical Journal of Pharmaceutical Research. 2003; 2(2): 195-196

[23] Awaisu A, Mohammed S, Yakubu R. Chapter 17 - Pharmacy Practice in Nigeria, Editor(s): Ahmed Ibrahim Fathelrahman, Mohamed Izham Mohamed Ibrahim, Albert I. Wertheimer, Pharmacy Practice in Developing Countries, Academic Press, 2016, Pages 343-370, ISBN 9780128017142,. (https://www.sciencedirect.com/science/article/pii/B9780128017142000174).