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Pharmacy services in primary healthcare facilities: A survey of patients' perspectives and influence of demographic factors on satisfaction

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ABSTRACT

***Background**:* The dispensing of medicines and other pharmacy services at primary health care (PHC) facilities is largely carried out by nurses, community health workers and pharmacy technicians. There are concerns about quality, as dispensary staff are often unqualified to perform pharmacy services. This study is therefore aimed at assessing satisfaction with medication-related services at PHCs.

Methods: This survey study was carried out in ten selected PHCs located in Jere and Maiduguri metropolitan area councils of Borno State. A modified pharmaceutical service quality questionnaire (PSQ-18) was administered to randomly selected patients at dispensary units. Mean item and satisfaction domain scores were calculated and scores <3 (≥ 70%) was considered satisfaction. The chi-square test was used to determine the association between demographic factors and satisfaction. P values < 0.05 were statistically significant.

***Results**:* The dispensary staff consists of community health workers (58.6%), junior community health workers (18.4%) and pharmacy technicians (17.9%). Satisfaction was adequate for medicine information (88.3%), while quality of services (61.7%), medicine availability (47.6%), timeliness of services (45.1%) and good relationships with staff (30.4%) performed poorly. There was an insignificant association between satisfaction and demographic variables except for medicine availability (*p<0.001*).

Conclusion: Satisfaction with medicine information was adequate; other aspects of services performed poorly. Demographic factors had no significant association with satisfaction, with the exception of medicine information. There is need to improve dispensary services if satisfaction is to be achieved among patients.

Keywords: Dispensary services, Medicine availability, Medicine information, PRIMARY healthcare, Satisfaction

1. INTRODUCTION

The primary health care (PHC) system constitutes the first of the three tiers of healthcare delivery in Nigeria and is designed to provide basic medical services for common ailments. These services include immunization, reproductive health care, health promotion, and the treatment of minor injuries. The recent expansion of PHC responsibilities to include the prevention and management of non-communicable diseases has introduced additional demands on the system [1]. Although national guidelines permit the use of lower-cadre health workers in patient care at PHCs, this practice has raised concerns regarding the quality of pharmacy services [2] and the attainment of optimal clinical outcomes [3‑5]. The level of competence required to deliver pharmacy services that optimize treatment outcomes presents challenges for lower-cadre health workers, as they are often required to perform functions for which they are neither adequately trained nor qualified [6,7]. Consequently, these workers may struggle to identify drug therapy problems or resolve medication-related issues that arise during treatment [8]. Evidence from recent studies has highlighted deficiencies in prescription screening, dispensing accuracy, provision of drug information, medication counseling, identification of drug interactions and contraindications, as well as suboptimal patient‑provider relationships [9]. Pharmacy services encompass a broad range of activities aimed at improving therapeutic outcomes, minimizing errors, promoting patient safety, and ensuring the appropriate use of medicines. These functions also include enhancing patient knowledge, obtaining patient feedback, and supporting long-term adherence to therapy [10]. Patient satisfaction with pharmacy services is widely recognized in the literature as an important indicator of healthcare quality [11,12]. Although patient satisfaction is a multidimensional construct, studies have consistently identified medicine stock-outs, prolonged

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waiting times, lack of privacy, and negative staff attitudes as key predictors of poor satisfaction [13‑15]. Despite conflicting findings from studies conducted in sub-Saharan Africa [16‑18], there is substantial evidence indicating generally low levels of patient satisfaction [19,20], in contrast to reports from developed countries [21‑23]. The challenge of suboptimal pharmacy services is further exacerbated by the ongoing integration of national strategies for the prevention and management of non-communicable diseases into the PHC system, particularly in the context of inadequate human resources. Given the inconsistent evidence on patient satisfaction with pharmacy services, this study aims to assess the level of patient satisfaction across selected primary health care facilities.

2. Materials and Methods

2.1 Pharmaceutical satisfaction quality-18 questionnaire

2.2 Methods

2.2.1 Study setting: The study was carried out in ten selected PHCs that have monthly clinic attendance of at least 500 patients per month and also have functional dispensaries.

2.2.2 Study design: This was a cross sectional survey carried out among patients receiving their medications at the dispensaries of selected PHCs.

2.2.3 Sample size: The sample size was calculated using Raosoft calculator at 95% confidence interval and margin of error (5%) which gave a sample size of 377. However a total of 1200 questionnaires were administered at the rate 120 per PHC.

2.2.4 Questionnaire/administration: The pharmaceutical satisfaction questionnaire (PSQ-18) is an eighteen item instrument scored on a five point Likert scale (*strongly agree =1, agree =2, neutral = 3, disagree =4, strongly disagree = 5*). The items was modified and internal reliability determined before the study (Cronbach alpha = 0.850). The questionnaires were self-administered on respondents selected by simple random sampling method. A total of 1200 questionnaires were administered and 1094 were used for analyses which translated to 91.2% return rate.

2.3 Statistical analysis

The data was entered into SPSS version 21 for descriptive and inferential statistics. The scores for negatively worded items (Q4, Q7, Q9, Q12, Q13, Q14, Q16 and Q17) were reversed so that higher scores align with dissatisfaction. Factor analysis was carried out using principal component analysis, varimax rotation with Kaiser Normalization and factor loading less than 0.4 suppressed (*Kaiser-Meyer-Olkin test = 0.627, Bartlett's test of sphericity <0.000*). A total of five components of satisfaction was extracted and labeled accordingly (*medicine availability, quality of service, staff relationship, service timeliness and adequate information*). Mean item and component score of <3 (≥80%) was considered satisfaction while higher values was dissatisfaction. Chi square test was done to determine association between demographic factors and satisfaction, while student's *t* test and one way ANOVA was used to assess differences in satisfaction. P values <0.05 was statistically significant.

2.4 Ethical issues

Ethical approval was obtained from health research ethics committee of the Borno State ministry of Health (MOH/GEN/6679/1)

3. Results

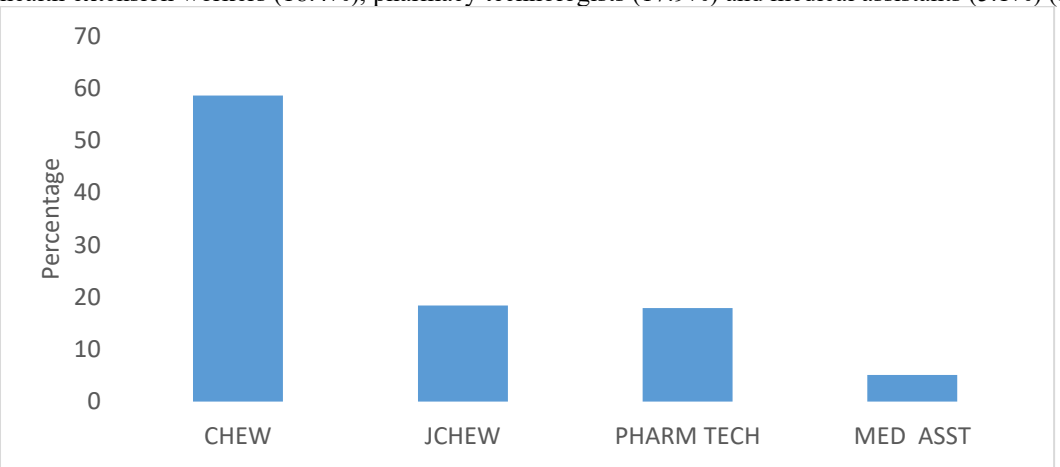
The results showed that more than half of respondents were females (54.8%), married (58%) and had secondary level education (67.3%). The most common diseases were malaria (30.1%), urinary tract infections (17.6%) and typhoid (13.2%). The mean age of respondents was 39.9±16.1 years (**Table 1**).

Table 1: Demographic data

Variable	**Number** (%)
Gender	
Male	494 (45.2%)
Female	600 (54.8%)
Education	
Non formal	306 (27.9)
Primary	231 (21.1)

Secondary	430 (39.3)
Tertiary	127 (11.6)
Marital status	
Single	413 (37.8)
Married	635 (58)
Divorced	12 (1.1)
Widowed	34 (3.1)
Morbidities	
Hypertension	102 (9.3)
Diabetes mellitus	28 (2.6)
Peptic ulcer disease	140 (12.8)
Arthritis	69 (6.3)
Malaria	329 (30.1)
Typhoid	145 (13.2)
Respiratory tract infections	89 (8.1)
Urinary tract infections	192 (17.6)
Age (yrs.)	
≤ 30	241 (22.0)
31 – 40	298 (27.2)
41 – 50	271 (24.8)
51 – 60	151 (13.8)
61 – 70	133 (12.2)
Mean (SD)	39.9 ± 16.1

Majority of staff at the PHC dispensaries were community health extension workers (77%), junior community health extension workers (18.4%), pharmacy technologists (17.9%) and medical assistants (5.1%) (**Figure 1**)



***Key**: CHEW = community health extension workers, JCHEW = junior community health extension workers, PHARM TECH = pharmacy technicians, MED ASST = medical assistants*

Figure 1: Qualifications of dispensary staff

The summary response to items is showed strongly agree (19.6%), agree (44.1%), neutral (14.9%), disagree (16.7%) and strongly disagree (4.7%) (**Table 2**)

Table 2: Distribution of item scores

		SA (%)	A (%)	N (%)	D (%)	SD (%)
Q1	The staff are good at explaining medicine use	309 (28.2)	604 (55.2)	84 (7.7)	55 (5.1)	42 (3.8)
Q2	They have what is needed to care for me	180 (16.5)	500 (45.7)	157 (14.3)	102 (9.3)	155 (14.2)
Q3	The care that I receive is near satisfactory	400 (36.6)	270 (24.7)	159 (14.5)	78 (7.1)	187 (17.1)
Q4	I know my treatment is correct	244 (22.3)	352 (32.2)	155 (14.2)	170 (15.5)	173(15.8)
Q5	I have receiving medicines that I need	765 (69.9)	260 (23.8)	24 (2.2)	42 (3.8)	3 (0.3)
Q6	The staff carefully check my medicines	157 (14.4)	402 (36.7)	168 (15.4)	265 (24.2)	102 (9.3)

Q7	The medicines prescribed are not affordable	47 (4.4)	90 (8.2)	136 (12.4)	791 (72.3)	30 (2.7)
Q8	I always receive adequate attention	529 (48.4)	418 (38.2)	44 (4)	96 (8.8)	7 (0.6)
Q9	I do not wait too long for medicines	35 (3.2)	66 (6)	66 (6)	892 (81.5)	35 (3.3)
Q10	Staff are business like and impersonal to me	26 (2.4)	99 (9)	595 (54.4)	301 (27.5)	73 (6.7)
Q11	Staff are friendly and courteous	268 (24.5)	640 (58.5)	74 (6.8)	102 (9.3)	10 (0.9)
Q12	Staff don't appear to be in a hurry towards me	41 (3.7)	924 (84.5)	82 (7.5)	31 (2.8)	16 (1.5)
Q13	Staff did not ignore problems I report	205(18.7)	437 (39.9)	386 (35.3)	61 (5.6)	3 (0.3)
Q14	I do not have doubts about skills of staff	153 (14)	587 (53.7)	271 (24.8)	70 (6.4)	11 (1.1)
Q15	The time spent with me is enough	221 (20.2)	719 (65.7)	73 (6.7)	73 (6.7)	8 (0.7)
Q16	It is easy to receive timely attention	38 ([3.5)	941 (86)	82 (7.5)	25 (2.3)	8 (0.7)
Q17	I feel satisfied with services provided to me	124 (11.3)	704 (64.4)	90 (8.2)	124 (11.3)	52 (4.8)
Q18	I always receive medicine information	124 (11.3)	677 (61.9)	21 (1.9)	12 (1.1)	12 (1.1)

Key: *SA= strongly agree, A = agree, N= neutral, D = disagree, SD = strongly disagree*

Satisfaction with pharmacy services was generally poor except with respect to medicine information (88.3%). While quality of service (61.7%), medicines availability (47.8%), timeliness (45.1%) and relationship with patients (30.4%) all performed poorly (<80% threshold) (**Table 3)**.

Table 3: Satisfaction with pharmacy services

Item	**Factor loading**	**Component**	**Mean (SD)**	**Satisfaction (%)**
		Medicine availability		
Q7	0.612		3.61 (0.85)	47.8
Q8	0.765		1.75 (0.93)	
Q9	0.679		3.76 (0.75)	
Q11	0.570		2.04 (0.88)	
Mean score			**2.79 (0.85)**	
		Quality of service		
Q3	0.835		1.67 (0.85)	61.7
Q4	0.558		2.56 (1.08)	
Q5	0.567		1.41 (0.79)	
Q14	0.633		2.29 (1.21)	
Mean score			**1.98 (0.98)**	
		Staff relationship		
Q2	0.689		2.19 (0.72)	30.4
Q10	0.523		3.27 (0.81)	
Q13	0.481		2.34 (0.98)	
Q17	0.710		2.34 (0.98)	
Mean score			**2.53 (0.87)**	
		Service timeliness		
Q12	0.656		2.14 (0.58)	45.1
Q15	0.406		2.02 (0.78)	
Q16	0.734		2.11 (0.49)	
Mean score			**2.09 (0.62)**	
		Adequacy of information		
Q1	0.669		1.72 (0.46)	88.3
Q18	0.740		1.69 (0.56)	
Mean score			**1.70 (0.51)**	

The results showed significant association between satisfaction and gender (p<0.001), marital status (p<0.001), education (p<0.001) and age (p<0.001) (**Table 4)**.

Table 4: Association between satisfaction and demographic factors

Variable	**Satisfaction** (%)	**Dissatisfaction** (%)	**P value**
Gender			
Male	106 (21.4)	388 (78.6)	<0.001
Female	341 (56.9)	259 (43.1)	
Marital status			

Single	128 (30.9)	285 (69.1)	<0.001
Married	289 (45.5)	346 (54.5)	
Divorced	2 (17.7)	10 (83.3)	
Widowed	3 (8.8)	31 (91.2)	
Education			
Primary	85 (36.8)	146 (63.2)	<0.001
Secondary	246 (33.4)	490 (66.6)	
Tertiary	18 (14.2)	109 (85.8)	
Age (yrs.)			
≤ 30	81 (33.6)	160 (66.4)	<0.001
31 – 40	85 (28.5)	213 (71.5)	
41 – 50	28 (10.3)	243 (89.7)	
51 – 60	7 (4.6)	144 (95.4)	
61 – 70	5 (3.8)	128 (96.2)	
Domains of satisfaction			
Medicine availability	523 (47.8)	571 (52.2)	<0.001
Quality of service	675 (61.7)	419 (38.3)	
Staff relationship	333 (30.4)	761 (69.6)	
Timeliness	493 (45.1)	601 (54.9)	
Adequacy of information	966 (88.3)	128 (11.7)	

There were significant differences in components of satisfaction due to gender (medicine availability - p<0.001, information p=0.049) and age (service quality p=0.002) as well as educational status (*information p=0.032*) (**Table 5**).

Table 5: Demographic factors and components of satisfaction

Variable	**Medicine availability** (Q7,8,9,11) Mean (SD)	**Service quality** (Q3,5,14) Mean (SD)	**Staff relationship** (Q2,10,13,17) Mean (SD)	**Timeliness** (Q12, 15) Mean (SD)	**Information** (Q1, 18) Mean (SD)
Gender					
Male	3.69 (1.03)	1.83 (0.88)	2.52 (0.85)	2.07 (0.65)	1.67 (0.62)
Female	3.29 (1.06)	1.79 (0.78)	2.54 (0.96)	2.17 (0.68)	1.75 (0.71)
P value	**<0.001***	0.426	0.718	0.014*	**0.049***
Age (yrs.)					
≤ 30	2.79 (0.89)	1.75 (1.13)	2.59 (1.16)	2.03 (0.67)	1.66 (1.03)
31 – 40	2.69 (0.81)	1.84 (0.79)	2.47 (0.76)	2.14 (0.70)	1.74 (0.54)
41 – 50	2.73 (0.86)	1.73 (0.73)	2.53 (0.79)	2.06 (0.65)	1.71 (0.47)
51 – 60	2.69 (0.85)	1.82 (0.76)	2.39 (0.80)	1.97 (0.64)	1.72 (0.51)
61 – 70	2.89 (0.61)	2.13 (0.78)	2.49 (0.65)	2.10 (60)	1.83 (0.36)
P value	0.243	**0.002****	0.220	0.093	0.184
Marital status					
Single	2.79 (0.89)	1.78 (0.90)	2.56 (0.88)	2.06 (0.67)	1.70 (0.52)
Married	2.76 (0.82)	1.79 (0.96)	2.51 (0.95)	2.10 (0.69)	1.71 (0.50)
Divorced	2.72 (0.71)	2.05 (1.04)	2.41 (0.82)	1.96 (0.33)	1.71 (0.47)
Widowed	2.81 (0.83)	1.96 (0.71)	2.53 (0.77)	2.00 (0.60)	1.67 (0.49)
P value	0.934	0.454	0.815	0.623	0.933
Education					
Primary	2.78 (0.77)	1.80 (0.80)	2.41 (0.79)	2.09 (0.73)	1.73 (0.49)
Secondary	2.80 (0.88)	1.85 (0.82)	2.50 (0.82)	2.11 (0.68)	1.76 (0.46)
Tertiary	2.76 (0.78)	1.68 (0.77)	2.54 (0.89)	2.06 (0.62)	1.64 (0.56)
P value	0.864	0.085	0.255	0.723	**0.032****

Key: *- Student t test, **- one way ANOVA

4. DISCUSSION

Pharmacy services at PHCs are being performed by health workers in line with national policy recommendation on human resources, although pharmacy technicians are considerably fewer. The capacity of these staff to provide quality services is in doubt as nothing in their training prepared them for these functions [24, 25]. For instance,

providing information on proper storage of medicines [26], inventory control [27], medicine information [28], accuracy of prescription processing [29, 30] and adherence support [31] will be a challenging endeavour. Satisfaction was generally poor comparable with previous studies [11], although higher levels of satisfaction have been reported in previous studies [32, 33]. The high level of satisfaction with medicine information may be related to the use of local languages in communication which makes understanding easier for most patients [34]. The use of local language in service delivery encourages feedback from patients, reduce confusion, promote trust and improve clarity of information [35]. Satisfaction is known to be influenced by multiple internal and external factors [11], some of which include socio-demographic factors [36]. A few studies reported that older patients tend to be less satisfied partly because of frustration from complex treatment regimens and confusion from multiple instructions [37, 38]. Other factors reported to influence satisfaction include gender [21] and educational level [39] comparable to the results of this study. While the influence of demographic factors on satisfaction vary widely between studies [40], health system factors, patients previous experience and availability of medicines have unpredictable effects on how patients perceive service quality. As the PHC system takes on more public health responsibilities there is need to include pharmacists in the work force of PHCs in order to improve quality of pharmacy services and patient satisfaction.

5. CONCLUSION: Patient satisfaction with pharmacy services was generally poor. While demographic factors significantly influence satisfaction, the use of unqualified personnel to perform pharmacy services is a limiting factor in patient satisfaction.

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