Patients' Perception of Healthcare Givers Services

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

Original Research Article

ABSTRACT

Aim: This study aimed to describe the communication between Ghanaian patients and nurses, midwives, and doctors regarding the core elements of the "Four Habits Model" (4HM). The specific objectives were (1) to describe the communication between Ghanaian patients and nurses, midwives, and doctors regarding the core elements of the "Four Habits Model" (4HM) measured by Four Habits Patients Questionnaire (4HPQ); and (2) to find an effective method to implement descriptions of the communication between patients' and nurses, midwives, and doctors regarding the core elements of the 4HM.

Methods: This exploratory study had a cross-sectional, multicenter design. Four Hospitals participated in this study. A convenience sample of patients (N = 400) from four hospitals (Tamale Teaching Hospital, Tamale West Hospital, Yendi Hospital, and Salaga Hospital) were included. The researcher trained four research assistants who assisted with administering the questionnaires. All patients had one or several consultations with a nurse, midwife, and/or doctor during their hospital stay. A self-report inventory was administered to patients at discharge from the hospitals using Four Habits Patients Questionnaire (4HPQ) and eight questions on information regarding treatment (8QIRT). Data was collected from January and March 2016.

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Results: Five eigenvalues greater than 1.0. They were 8.31 (component 1), 3.70 (component 2), 1.77 (component 3), 1.23 (component 4), and 1.16 component 5. Therefore, the components were labelled. The means and standard deviations showed that the additional 8QIRT were the least ranked. On the 4HM, Habit IV (invest in the end) was ranked least. The key findings were that the "Four Habits Model was applicable to doctors with some modifications., the advantages and disadvantages of treatment not explained to patients is very important, and that nurses, midwives, and doctors do not provide information on patients' treatment.

Conclusions: Based on this study, patients will want issues of patients not allowed to express themselves to be addressed by their healthcare providers.

1. INTRODUCTION

The involvement of patients' perspectives in providing healthcare has been recognized (Hekkink et al., 2003) and is being used in the assessment of healthcare quality (Ajayi et al., 2005). Modern health care is associated with a significant change in the patient role: from a passive recipient of health care in the past, to today's partnership between health care professionals and patients (Eldh, 2019). It has been demonstrated that patients feel satisfied when there is good communication with their healthcare providers (Ozam et al.,2022, Roter et al., 1995, Parle et al.,1996). Researchers have also found that good communication reduces patients' symptoms of depression and anxiety (Roter et al., 1995, Parle et al., 1996, Ramirez et al., 1996, Bertakis and Azari, 2011). Ampaw et al. (2020) found that patients were discontent with empathy and safety measures at the hospitals. Al-Hussami et al., 2017 have found that perceived quality of care and related hospital services by patients were relatively low, resulting in poor nursing care.

These are the bases upon which all healthcare providers, and therefore nurses and midwives, need good communication skills. It has been reported that patient satisfaction with care has rarely been examined in developing countries (Ariba et al., 2007).

Therefore, the objectives of this study were (1) To describe the communication between Ghanaian patients and nurses, midwives, and doctors regarding the core elements of the "Four Habits Model" (4HM) (Gulbrandsen et al., 2008) measured by Four Habits Patients Questionnaire (4HPQ) (Fossli et al.,2011); and (2) To find an effective method to implement descriptions of the communication between patients' and nurses, midwives, and doctors regarding the core elements of the 4HM (Gulbrandsen et al., 2008) to bring improvement.

2. MATERIALS AND METHODS

2.1 Design and Sample

This exploratory study had a cross-sectional, multicenter design. Four Hospitals participated in this study. A convenience sample of patients (N = 400) from four hospitals (Tamale Teaching Hospital, Tamale West Hospital, Yendi Hospital, and Salaga Hospital) was included.

2.2 Criteria for Inclusion and Exclusion

The inclusion and exclusion criteria in this exploratory study are presented in (Table 1).

2.3 Procedure

The researcher trained four research assistants who assisted with administering the questionnaires. The participants consented to participate in the study. All patients had one or several consultations with a nurse, midwife, and/or doctor during their hospital stay. A self-report inventory was administered to patients at discharge from the hospitals using the 4HPQ (Fossli et al., 2011) and eight questions on information regarding treatment (8QIRT).

Informed consent for participation in the study was obtained verbally from all participants, which was waived because some patients were illiterate while others were bedridden. Written approval was obtained from the University for Development Studies Tamale Institutional Review Board (Date: January 2016/No: UDS-IRB No. 20200101-0535). The responses were recorded and kept under lock to preserve patient confidentiality. The aims and objectives of the study were explained to the participants before

informed consent was obtained. After obtaining informed consent, the participants responded to the questionnaires. Data were collected between January and March 2016. Further details of this procedure are available in Alhassan (Alhassan, 2019). There is an overlap of data and information from this research with that of Alhassan, 2019 because this was part of the author's PhD Dissertation submitted to Heinrich-Heine University, Dusseldorf Alhassan, 2019.

2.4 Outcome Measure

The eight questions on information regarding treatments (8QIRT), developed from a Focused Group (FG) discussions, were added to the Four Habits Patients Questionnaire (4HPQ) (Fossli et al., 2011) to be able to answer the explorative research. The 4HPQ has 15-items on a five-point Likert-scale ranging from 1 (not very effective behavior) to 5 (highly effective behavior).

Psychometric properties: A number of studies have used the 4HPQ (Gulbrandsen et al.,2008,

Fossli et al., 2011, Alhassan, 2019, 15. Fossli et al., 2010, Krupat et al., 1995). It has been validated against the Roter Interaction Analysis System (Krupat et al., 2006), an instrument regularly used in doctor-patient communication research. The 4HPQ takes approximately 10-15 minutes to administer, which is good for patients because they usually want to leave the hospital immediately after discharge. Eight questions on information regarding treatment (8QIRT) are presented in Table 2.

2.5 Data Analysis

Data was screened for outliers. Normality was tested using the Shapiro-Wilk`s test (P = .05) (Shapiro and Wilk, 1965, Razali and Wah, 2011). The Kaiser-Meyer-Olkin (KMO) criterion for sampling adequacy, Bartlett's test of sphericity to test for validity, Cronbach's alpha to test for reliability, and correlations were computed. Data were analyzed using SPSS (Statistical Package for Social Sciences).

Table 1. Criteria for inclusion and exclusion in this explorative study

Inclusion criteria
• Patients 18 years and above.
• Patients who were from Tamale Teaching Hospital, Tamale West Hospital, Yendi Hospital, and Salaga Hospital.
• Patients who had one or several consultations with a nurse, a midwife, or a doctor during their stay in any of the above-mentioned hospitals.
• Patients who had been discharged and were ready to go home.
Exclusion criteria
• Patients below 18 years.
• Patients who were not from Tamale Teaching Hospital, Tamale West Hospital, Yendi Hospital, and Salaga Hospital.
• Patients who had no consultation with a nurse, a midwife, or a doctor during their stay in any of the above-mentioned hospitals.
• Patients who were still on admission at the hospitals.

Table 2. Eight questions on information regarding treatment (8QIRT)

Question	Details
16	Was the name/nature of proposed treatment or procedure explained to you?
17	Were the advantages of proposed treatment made known to you?
18	Were the disadvantages of proposed treatment explained to you?
19	Were alternative treatment procedures (regardless of costs or extent covered by insurance) explained to you?
20	Were the advantages of alternative treatment also explained?
21	Were the disadvantages of alternative treatment also explained?
22	Were the advantages of not receiving treatments explained to you?
23	Were the disadvantages of not receiving treatments explained to you?

3. RESULTS

3.1 Demographic Information

Analyses of the data showed that 345 patients participated in the study. The patients were females (n = 192) and males (n = 153) aged 18 years and above from the Tamale Teaching Hospital, Tamale West Hospital, Yendi Hospital, and Salaga Hospital (Table 3).

3.2 Assumptions Testing

A Shapiro-Wilk`s test (P = .05) (Shapiro and Wilk, 1965, Razali and Wah, 2011) showed all the 23 items scores were approximately normally distributed. In this study, the statistics associated with the Shapiro-Wilk test were all significant (P = .05) (Table 4).

Extreme values were removed from the data. Data from 13 (4%) participants were also excluded from the study due to incomplete data. The sample left after handling missing data using list-wise deletion was 345 for the 23 variables. With 345 cases and 23 variables, the ratio of cases to variables was 15 1 (Bryant and Yarnold, 1995, Garson, 2013, Gorsuch, 2013), which met the requirement of the case-to-variable ratio (Table 4).

Table 3. Demographic data

Characteristics	Patients (N = 345)	n	%
Age	18 years and above		
Gender	Females	192	56
	Males	153	44
Hospital	Tamale Teaching Hospital	99	29
	Tamale West Hospital	100	29
	Yendi Hospital	62	18
	Salaga Hospital	84	24

Legend: N = total sample size;   n = group sample size

Table 4. Normality Test

Variables	Shapiro-Wilk		
	Stat.	df	P
1	.80	345	*.000
2	.78	345	*.000
3	.77	345	*.000
4	.77	345	*.000
5	.78	345	*.000
6	.81	345	*.000
7	.85	345	*.000
8	.91	345	*.000
9	.92	345	*.000
10	.89	345	*.000
11	.80	345	*.000
12	.82	345	*.000
13	.85	345	*.000
14	.87	345	*.000
15	.86	345	*.000
16	.87	345	*.000
17	.87	345	*.000
18	.87	345	*.000
19	.86	345	*.000
20	.86	345	*.000
21	.85	345	*.000
22	.78	345	*.000
23	.79	345	*.000

*significance level P = .05; Legend: Stat. = statistical; df = degrees of freedom; P = Probability

3.3 Reliability, Validity, and Sampling Adequacy

In this study, the scores were reliable (α = .92, N = 23) (Table 5).

Bartlett's test of sphericity for validity was [χ2 (253) = 5488.84, *P* = .05] and the Kaiser-Meyer-Olkin (KMO) criterion for sampling adequacy was .88. This probability was also significant (*P* = .001) (Table 6).

3.4 Communalities

The results showed that the minimum value of all communalities was .55, the maximum was .82, and the mean value of communalities was .70.

The results showed that all communalities were above .50 (Table 7).

3.5 Correlations

In this study, all 23 items were correlated at .30, resulting in 127 correlations, as shown in bold (Table 8), all anti-image correlations in which were over .50, as shown in bold (Table 9).

Table 5. Table of reliability statistics

Cronbach's Alpha (α)	N
.92	23

Legend: N = total sample size

Table 6. Sampling adequacy for the set of variables

KMO Measure of Sampling Adequacy		**.88**
Bartlett's test of sphericity	App. Chi-Square	5488.84
	df	253
	Sig.	*.000

significance level P = .05; Legend: df = degrees of freedom; Sig. = significance level; App. = approximate

Table 7. Commonalties

Variables	Extraction
1	.63
2	.77
3	** .82
4	.77
5	.69
6	.72
7	*.55
8	.68
9	.64
10	.57
11	.74
12	.77
13	.70
14	.56
15	.60
16	.69
17	.81
18	.81
19	.62
20	.79
21	.79
22	.79
23	.66

The mean value is .70; Minimum;** Maximum*

Table 8. Appropriateness of PCA: presence of substantial correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.000																						
2	**.380**	1.000																					
3	.264	**.742**	1.000																				
4	.196	**.681**	**.840**	1.000																			
5	.187	**.449**	**.546**	**.605**	1.000																		
6	.097	**.345**	**.378**	**.425**	**.651**	1.000																	
7	.165	**.489**	**.531**	**.561**	**.479**	**.402**	1.000																
8	**.317**	**.388**	**.380**	**.419**	**.516**	**.500**	**.558**	1.000															
9	.263	.292	.276	**.318**	**.447**	**.398**	**.343**	**.626**	1.000														
10	.149	.262	.243	**.303**	**.371**	**.375**	**.376**	**.538**	**.505**	1.000													
11	.056	**.467**	**.611**	**.580**	**.452**	**.386**	**.495**	**.329**	.258	.261	1.000												
12	.062	**.430**	**.596**	**.577**	**.476**	**.322**	**.496**	**.315**	.241	.248	**.799**	1.000											
13	.126	**.420**	**.518**	**.505**	**.460**	**.340**	**.484**	**.362**	.279	.270	**.639**	**.731**	1.000										
14	.201	.295	**.326**	**.328**	**.476**	**.480**	**.333**	**.426**	**.358**	**.381**	**.414**	**.451**	**.534**	1.000									
15	.099	.360	**.450**	**.450**	.299	.239	**.432**	.296	.173	.164	**.495**	**.459**	**.513**	**.394**	1.000								
16	.219	.287	.242	.222	.268	.237	**.314**	**.390**	.285	**.378**	.200	.214	.273	**.486**	**.391**	1.000							
17	.243	.208	.177	.171	.287	.273	**.312**	**.407**	**.410**	**.318**	.176	.168	.251	**.435**	**.302**	**.682**	1.000						
18	.260	.152	.139	.145	.245	.247	.276	**.367**	**.373**	.267	.133	.138	.213	**.382**	**.302**	**.612**	**.861**	1.000					
19	.184	.134	.120	.104	.174	.295	.190	**.300**	.212	.265	.097	.125	.138	**.343**	.215	**.380**	**.511**	**.605**	1.000				
20	.216	.126	.147	.133	.215	**.341**	.205	**.300**	**.301**	.224	.112	.075	.148	**.342**	.198	**.461**	**.619**	**.673**	**.675**	1.000			
21	.194	.087	.112	.105	.188	**.322**	.181	.283	.278	.197	.119	.104	.149	**.353**	.197	**.422**	**.585**	**.663**	**.666**	**.902**	1.000		
22	.157	.098	.122	.101	.199	.258	.057	.208	.089	.085	.069	.102	.153	**.309**	.221	**.305**	**.415**	**.446**	**.555**	**.615**	**.647**	1.000	
23	.124	.125	.152	.130	.171	.147	.095	.101	.006	.012	.164	.155	.204	.213	**.313**	.235	.265	**.306**	**.372**	**.418**	**.437**	**.693**	1.000

Bolded numbers show substantial presence of correlations

Table 9. Appropriateness of PCA: sampling adequacy (Anti-image correlation)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	*.826																						
2	-.284	*.907																					
3	-.095	-.361	*.886																				
4	.087	-.157	-.550	*.899																			
5	-.028	.056	-.063	-.216	*.914																		
6	.142	-.079	.037	-.009	-.434	.890*																	
7	.056	-.104	-.015	-.095	-.048	-.040	*.932																
8	-.174	.026	.018	-.018	-.059	-.141	-.324	*.900															
9	-.058	-.047	.023	-.011	-.123	-.007	.128	-.381	*.883														
10	.039	.013	.070	-.083	-.001	-.043	-.074	-.176	-.239	*.909													
11	.081	-.060	-.126	.014	.073	-.149	-.010	-.011	-.001	-.051	*.883												
12	.043	.087	-.089	-.063	-.106	.128	-.096	.057	-.022	.025	-.558	*.851											
13	-.004	-.049	-.008	.021	-.022	.026	-.075	-.025	-.007	-.018	-.021	-.402	*.920										
14	-.098	.035	.042	.044	-.114	-.194	.097	.002	-.030	-.076	-.029	-.070	-.254	*.929									
15	.056	.036	-.045	-.120	.100	.022	-.130	-.019	.005	.111	-.169	.073	-.179	-.084	*.920								
16	.028	-.132	-.028	.056	.012	.077	.026	-.096	.159	-.209	.092	-.048	.078	-.233	-.197	*.895							
17	.043	-.046	.005	.060	-.029	.033	-.065	.001	-.116	.007	-.055	.043	-.021	-.063	.050	-.313	*.857						
18	-.100	.079	.045	-.049	-.042	.054	-.019	.014	-.063	.066	.034	-.003	-.021	.067	-.092	-.071	-.666	*.861					

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
19	.013	-.074	-.008	.060	.080	-.068	-.002	-.068	.111	-.160	.084	-.118	.093	-.081	-.048	.085	.078	-.244	*.922				
20	-.031	.037	-.069	-.013	.001	-.081	-.040	.071	-.066	.009	-.044	.147	-.049	.067	.056	-.095	-.098	-.005	-.184	*.848			
21	-.004	.046	.035	-.007	.084	-.041	-.023	.002	-.046	.030	-.026	-.073	.048	-.072	.025	.034	.077	-.161	-.056	-.731	*.844		
22	.016	-.008	-.040	.000	-.040	-.051	.178	-.137	.132	.035	.138	-.061	.002	-.072	-.005	.058	-.107	.074	-.150	-.038	-.208	*.826	
23	-.046	-.018	.034	.017	-.089	.075	-.030	.074	.038	.032	-.104	.048	-.057	.068	-.165	-.041	.066	-.021	-.004	-.024	.007	-.572	*.795

Anti-image correlations over .50

3.6 Rotated Component Loadings

The results showed that component 1 had seven items, component 2 had five items, component 3 had five items, component 4 had three items, and component 5 had three items. In the results, component loadings < .50 are not shown (Table 10).

3.7 Number of Components (Cumulative Variance)

The results of extraction for explanation of variance showed component 1 (20.29%), component 2 (15.75%), component 3 (14.26%), component 4 (11.94%), and component 5 (8.04%). The total variance is 70.28% (Table 11).

3.8 Number of Components (eigenvalues)

The results showed that five eigenvalues are greater than 1.0. They were 8.31 (component 1), 3.70 (component 2), 1.77 (component 3), 1.23 (component 4), and 1.16 component 5 (Table 11).

3.9 Component Labelling

Component labelling was as follows: component 1; *"patients are not allowed to express themselves"*, component 2; *"advantages and disadvantages of treatment are not explained to patients",* Component 3; *"doctors, nurses, and midwives do not display empathy towards patients",* component 4; *"doctors, nurses, and midwives do not provide information on patients treatment"* (Table 12; Fig. 1 - Fig. 4).

3.10 Descriptive Statistics of the 4HPQ and 8QIRT

In this study, the means and standard deviations showed that the additional eight questions on treatment information (8QIRT) were the least ranked. On the "Four Habits Model" (Gulbrandsen et al., 2010), Habit IV (invest in the end) was least ranked, followed by Habit III (demonstrate empathy), then Habit II (elicit patients perspective), and then Habit I (invest in the beginning) (Table 13).

Table 10. Rotated component matrix

Variables	Component				
	1	2	3	4	5
1					.74
2					.70
3	.67				.56
4	.66				
5			.63		
6			.72		
7	.54				
8			.70		
9			.72		
10			.68		
11	.84				
12	.86				
13	.80				
14					
15	.68				
16				.75	
17				.77	
18				.74	
19		.67			
20		.76			
21		.78			
22		.88			
23		.76			

Items with less than .50 have not been shown

Table 11. Number of components extracted (latent root criterion)

	Total variance explained								
	Eigenvalues			**Extraction SS loadings**			**Rotation SS loadings**		
Var.	**Total**	**% of Var.**	**Cum. %**	**Total**	**% of Var.**	**Cum. %**	**Total**	**% of Var.**	**Cum. %**
1.	8.31	36.15	36.15	8.31	36.15	36.15	4.67	20.29	20.29
2.	3.70	16.10	52.24	3.70	16.10	52.24	3.62	15.75	36.05
3.	1.77	7.67	59.92	1.77	7.67	59.92	3.28	14.26	50.30
4.	1.23	5.33	65.24	1.23	5.33	65.24	2.75	11.94	62.24
5.	1.16	5.04	70.28	1.16	5.04	70.28	1.85	8.04	70.28
6.	.81	3.53	73.81						
7.	.72	3.12	76.92						
8.	.69	3.02	79.94						
9.	.61	2.63	82.57						
10.	.55	2.39	84.96						
11.	.48	2.09	87.05						
12.	.40	1.75	88.80						
13.	.38	1.66	90.46						
14.	.36	1.56	92.02						
15.	.32	1.41	93.43						
16.	.30	1.30	94.73						
17.	.27	1.18	95.91						
18.	.23	.98	96.89						
19.	.21	.92	97.81						
20.	.16	.69	98.50						
21.	.14	.61	99.11						
22.	.12	.51	99.62						
23.	.09	.38	100.00						

Legend: SS = Sum of Squares; Cum. = Cumulative; Var. = Variance

Table 12. Component labels

Variables	Component				Component Label
	1	**2**	**3**	**4**	
3	.67				
4	.66				
7	.54				
11	.84				Patients are not allowed to express themselves
12	.86				
13	.80				
15	.68				
6			.72		
8			.70		Doctors, nurses and midwives do not display
9			.72		empathy towards patients.
10			.68		
16				.75	Doctors, nurses and midwives do not provide
17				.77	information on patients' treatment
18				.74	
19		.69			
20		.76			
21		.78			Advantages and disadvantages of treatment are not
22		.88			explained to patients
23		.76			

Rotation method was by Varimax with Kaiser Normalization; Items with less than .50 have not been shown
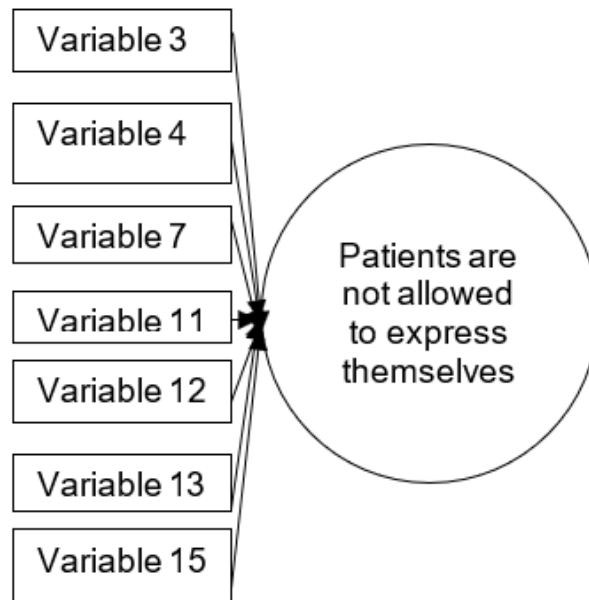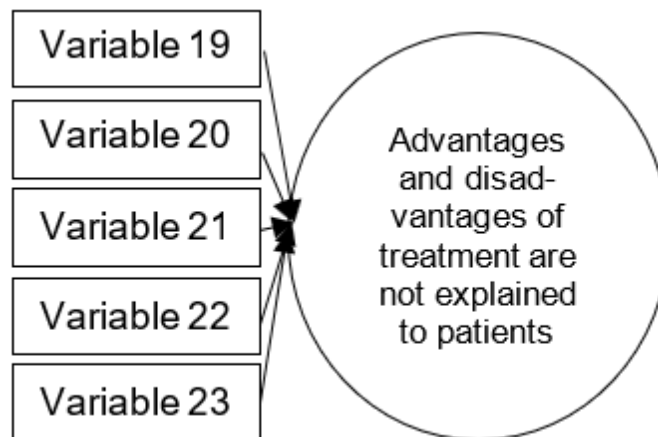
Fig. 1. Component 1 labelled with 7 items
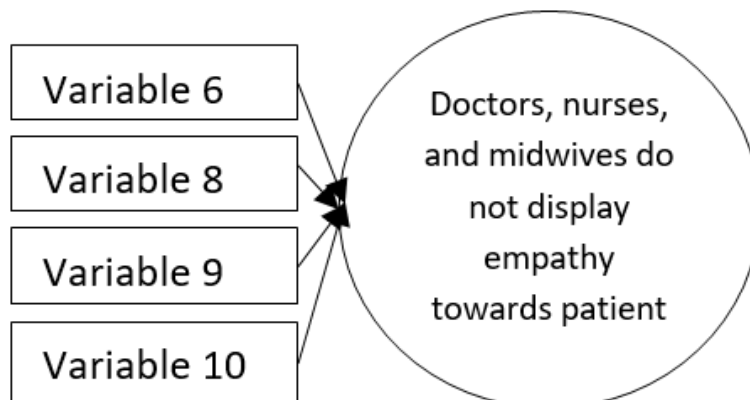

Fig. 2. Component 2 labelled with 5 items

Fig. 3. Component 3 labelled with 4 items

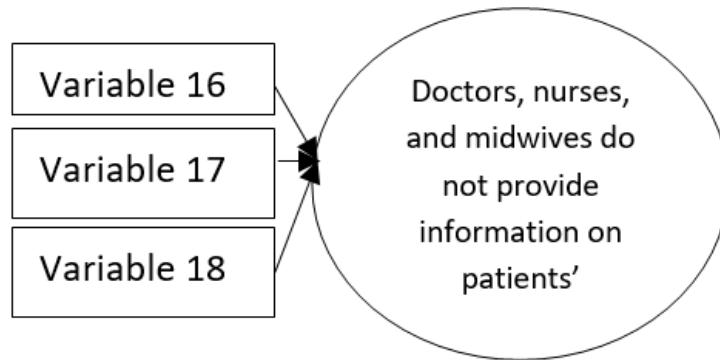**Fig. 4. Component 4 labelled with 3 items**

Table 13. Descriptive statistics for the 4HPQ and 8QIRT

Habit	Var.	M	SD	Habit M
I	1	4.90	1.65	
	2	5.18	1.40	5.10
	3	5.23	1.36	
II	4	5.19	1.38	
	5	4.74	1.68	4.74
	6	4.29	1.97	
III	7	5.21	1.47	
	8	4.60	1.63	4.69
	9	4.25	1.58	
IV	10	4.37	1.79	
	11	4.87	1.64	
	12	5.08	1.54	4.48
	13	4.72	1.75	
	14	3.88	1.97	
	15	3.93	2.03	
8QIRT	16	3.52	1.99	
	17	3.12	1.88	
	18	2.98	1.81	
	19	2.94	1.83	2.84
	20	2.70	1.69	
	21	2.69	1.66	
	22	2.29	1.60	
	23	2.47	1.74	

Legend: Var. = Variable; M = Mean; SD = Standard Deviation; 4 HPQ = Four Habits Patients Questionnaire (Fossli et al., 2011) 8QIRT = Eight questions on information regarding treatment

4. DISCUSSION

The explorative study was conducted to answer the research question (How do Ghanaian patients describe communication between themselves and nurses, midwives and doctors regarding the core elements of "Four Habits Model" (Gulbrandsen et al., 2008) measured by Four Habits Patients Questionnaire (4HPQ) (Fossli et al., 2011) ?). To answer this question, data were collected using the Four Habits Patients Questionnaire (4HPQ) (Fossli et al., 2011) and eight questions on treatment

information (8QIRT) and analyzed using principal component analysis (PCA). Therefore, the data were examined for appropriateness using PCA to analyze and determine which components could account for the core elements of the "Four Habits Model" (Gulbrandsen et al., 2008).

When analyzing data using PCA, there are several important requirements. Some important requirements are sampling adequacy, level of significance, rotated component matrix, correlations, communalities, latent root criterion,

and eigenvalues. Below are discussions of these requirements.

The determination of sampling adequacy was by Kaiser-Meyer-Olkin (KMO) criterion to determine sampling adequacy. In this study, the sampling adequacy was .88 (Table 7). Kaiser, 1958 reported that KMO values were closer to 1.0, and Gamst and Guarino, 2012 indicated that a value of .70 is considered as adequate.

In addition, it has been reported that the level of significance of PCA should be greater than the probability of Bartlett's test of sphericity (Meyers et al., 2012). The probability associated with the Bartlett test in this study was $P < 0.001$ (Table 6), which satisfied this requirement.

In this study, all 23 items were correlated at least .30 with another item (Table 8). This satisfies the researchers' advice that if the number of correlations above .30 in the matrix is small, it is better not to continue with the analyses (Norman and Streiner, 2008, Tabachnick and Fidell, 2012).

Furthermore, when using PCA, the requirements of having correlations > .30 and anti-image correlation > .50 between the variables were satisfied (Norman and Streiner, 2008). In this study, there were 127 correlations > .30 (Table 8) and anti-image correlation > .50 (Table 9) in the matrix.

In this study, all communalities were above .50, with a minimum of .55, a maximum of .82, and a mean of .70 (Table 7). These commonality values satisfy a report that the solution using PCA explains more than half of each original variable's variance; therefore, communalities for each variable shall be > .50 (Meyers et al., 2012).

After satisfying the important requirements, an important step was to determine the number of components because PCA is a reduction technique. Therefore, the latent root criterion and eigenvalues are used to determine the number of components.

First, the latent root criterion for the number of extracted components showed five components (Table 10). However, a 4-component solution is preferred because of the inadequate number of primary loadings (Hare et al., 1998).

Second, the initial eigenvalue component explanations were Components 1 (20.29%), 2 (15.75%), 3 (14.26%), 4 (11.94%), and 5 (8.04%). The examination of eigenvalues was performed by varimax rotations of the component loadings. A 4-component solution was preferred because the cumulative proportion of variance criteria (62.24%) (Table 12) could be satisfied. It has been recommended that the criterion for explaining > 60% of the total variance should be satisfied (Kaiser, 1958).

Furthermore, the number of primary loadings is important in determining the number of components (Hare et al.,1998). The determination of principal components (sometimes referred to as the number of components or variables) is critical. According to some researchers a minimum of 3 variables per component is critical (Rindskopf, 1994, Velicer and Fava, 1998). It has also been recommended that at least four measured variables be used for each common component, and perhaps up to 6 (Fabrigar et al., 1999). It has been said that components with less than 3 items are generally weak and unstable (Fabrigar et al., 1999).

There has been limited number of studies that considers patients perception of communication between themselves and nurses, midwives and doctors in Ghana. However, few studies have been conducted in African and other countries.

In this study, there were eight questions on treatment information (8QIRT). This has a correlation with a related study by Gulbrandsen et al.,2008, that the "Four Habits" (Gulbrandsen, 2008) was applicable to doctors with some modifications.

The results of this study showed that component 2 (advantages and disadvantages of treatment not explained to patients) is very important. This study confirmed a study in Nigeria that 53% of outpatients were not provided with sufficient information on their diseases (Akande, 2002).

Furthermore, this study showed that nurses, midwives, and doctors do not provide information on patients' treatment. This has been confirmed by a related study that reported that a further indicator of quality was the proportion of respondents who were told their diagnosis or informed about the management of their illness, and that it was low (43%) (Turkson, 2009).

An interesting result of this study was the component with low item loadings. Component 5 had low loadings for both components. This is understandable because the first item "doctors' knowledge of important information about patients' medical history" will be very difficult for a patient to know the nurses, midwives, and doctors' knowledge level because doctors' knowledge cannot be assessed only by patients with a short period of interaction. Importantly, knowledge assessment is subjective. Therefore, it is not surprising that this item had poor loading. In contrast, the item 2 "doctor meet patients that put them at ease?" which also had low loadings was rather surprising because one would expect patients to be very interested in doctors and nurses, putting them at ease. However, this may be explained by the paternalistic (Shiffrin, 2000) nature of nurses, midwives, and doctors in Africa, especially Ghana, where children are trained to not question the elderly or people in authority. This kind of training is usually applied to many situations, including nurses, midwives, and doctors.

In this study, item 14 (Did the doctor encourage you to be as involved as you would like in decisions about your healthcare?) had no loadings. This is interesting because it is not related to other items. Either participants probably did not understand the question, or it could stand alone without any relationship with the other items.

In this study, the findings using the means and standard deviations showed that the additional eight questions on information regarding treatment (8QIRT) were the least ranked. On the "Four Habits Model" (Gulbrandsen et al., 2008), Habit IV (invest in the end) was least ranked, followed by Habit III (demonstrate empathy), then Habit II (elicit patient's perspective), and then Habit I (invest in the beginning). These findings are consistent with those of a related study using the "Four Habits" (Gulbrandsen et al., 2008), at a Norwegian hospital with doctors (Gulbrandsen et al., 2008).

5. CONCLUSION

The findings from this study showed that the Four Habit Patient Questionnaire could be reliable and valid for assessing patients' health communication needs, not only in developed countries but also in developing countries. Based on this study, issues that needs to be addressed are that patients are not allowed to express themselves; the advantages and disadvantages of treatment are not explained to patients; doctors and nurses do not display empathy towards patients; and nurses, midwives, and doctors do not provide information on patients' treatment. Therefore, an explorative study using the "Four Habits" is applicable to assessing patients' health communication needs. The "Four Habits" is indicative of how patients heath communication needs can be assessed.

These findings guided the author in a Randomized Control Trial (RCT) using communication skills training (CST) for nursing and midwifery students.

DISCLAIMER

This paper is an extended version of a Thesis document of the same author.

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DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

CONSENT

All participants consented to participate in the study. Informed consent for participation in the study had been obtained verbally. The aims and objectives of the study were explained to the participants before obtaining their informed consent to participate. Participants consented to publication of this research findings.

ETHICAL APPROVAL

This study was conducted in accordance with the principles of the Declaration of Helsinki. The University for Development Studies, Tamale Institutional Review Board approved this study (Date: January 2016/No: UDS-IRB No.20200101-0535). The procedures used in this study adhere to the tenets of the Declaration of

Helsinki (WMA, 2024, World Medical Association Declaration of Helsinki, 2001).

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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