ORIGINAL RESEARCH

Patient-Centered Care and Associated Factors among Adult Admitted Patients in South Wollo Public Hospitals, Northeast Ethiopia

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Background: The US Institute of Medicine's "quality chasm" report defined patient-centered care as care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions. Services that lack patient-centered care lead to unimproved health status, decreased patient and family satisfaction, and poor patient outcomes. Therefore, this study aimed to assess patient-centered care and associated factors among admitted patients in South Wollo public hospitals in northeast Ethiopia.

Methods: This was a facility-based quantitative cross-sectional study design supplemented with qualitative analysis conducted from February 10 to March 10, 2020 across South Wollo public hospitals. A total of 618 admitted patients were selected using multistage systematic random sampling and interviewed using a structured questionnaire. Five health professionals were selected for in-depth interviews. Binary logistic regression analysis was carried out to identify associated variables, and potential confounders were controlled using a multivariate logistic regression model, and $P<0.05$ was considered significant.

Results: Overall, 60.9% (95% CI 57.1%–64.5%) of patients received patient-centered care. Age 25–35 years (AOR 0.39, 95% CI 0.32–0.64) years, rural residence (AOR 2.61, 95% CI 1.62–4.02), social well-being (AOR 2.34, 95% CI 1.45–3.78), perceived high quality of care (AOR 3.69, 95% CI 2.07–6.04), length of stay (AOR 0.13, 95% CI 0.02–0.79), and routine checkups (AOR 1.92, 95% CI 1.15–3.13) were variables significantly associated with patient-centered care.

Conclusion: This study revealed that among admitted patients, three in five received patient-centered care. Age, residence, social well-being, length of stay, perceived quality of care, and routine checkups were significantly associated with patient-centered care. Therefore, working on provider improvements in providing consultation and facilitation and decreasing length of stay to improve patient-centered care is needed.

Keywords: patient-centered care, public hospitals, South Wollo zone, Ethiopia

Introduction

The US Institute of Medicine's "quality chasm" report defined patient-centered care as care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.[1] A patient-centered approach hastens interactions in which clinicians and patients engage in two-way sharing of information, explores patients' values and preferences, helps patients and their families make clinical decisions, facilitates access to appropriate care, and enables patients to follow through with often difficult behavioral changes needed to maintain or improve health.[2]

Patient-centered care enables patients to participate actively in all aspects of their care, such as choices about treatment and self-management, resulting in better adherence to medications and improved chronic disease control without higher costs, which helps to decrease length of stay.[3,4] It also improves well-being of patients through directly

reducing anxiety and depression and indirectly by building trust and social support, promoting patient self-efficacy, and addressing disparities.[5,6] According to the Picker Institute, patient-centered care has eight dimensions: respect for the patient's values, preferences, and expressed needs, information and education, access to care, emotional support to relieve fear and anxiety, involvement of family and friends, continuity and secure transition between health-care settings, physical comfort, and coordination of care.[7]

In low- and middle-income countries, 5.7–8.4 million deaths are attributed to poor-quality of health care each year. A lack of patient-centered care contributes to poor quality through loss to follow-up, unnecessary spread of disease, and decreased medication adherence in health systems.[8] Nonetheless, in African health institutions there are limited data on patient-centered care.[9] Provision of health-care services in Ethiopia is more biomedical than biopsychosocial: 71% of health-care providers admitted to failing to deliver compassionate and respectful care services in Ethiopia in 2015.[9,10]

A study conducted in Tigray region revealed that more than half the patients who received services from health facilities had not experienced patient-centered care.[11] A lack of patient-centered care leads to unimproved health status, decreased patient and family satisfaction, and poor patient outcome, resulting in high readmission rates, increased average length of stay, increase mortality, poor chronic disease management, and increased cost.[4] However, provision of care in developing countries, including Ethiopia, is focused on the needs and desires of health-care professionals, particularly physicians.[12,13]

There is limited information on patient-centered care and factors associated with it. As such, international studies have explored patient-centered care from staff and health workers' perspectives to identify key factors associated with its provision. Data from the patient's perspective can optimize health-care delivery.[14,15] Therefore, this study aimed to assess patient-centered care and associated factors among admitted patients in South Wollo public hospitals, northeast Ethiopia.

Methods
Study Design and Setting
This institution-based cross-sectional study supported by qualitative data was conducted from February 10 to March 10, 2020 in four public hospitals of South Wollo zone. South Wollo has a population of 2,718,842 and 17 districts with ten public hospitals and 129 health centers. All public hospitals of this zone deliver health services, including inpatient care.[16] All patients aged ≥18 years who were admitted and discharged from the selected hospitals and five health professionals were included in this study, while patients who were discharged from intensive care units (ICU) or who discharged themselves were excluded.

Sample Size and Sampling Procedure
The sample size was determined using a single population–proportion formula by assuming a proportion (P) of patient-centered care of 74% (from a pilot study at an Ataye primary hospital in northern Shewa), a 5% margin of error (d), 5% nonresponse rate and two design effects: $n = (Za/2)^2(P)(1 - P)/(d)^2$. The result was 618. Five health professionals (three physicians and two nurses) were selected for in-depth interviews.

Multistage systematic random sampling was employed to select study participants. Of the ten public hospitals in South Wollo, four public hospitals (40%) were randomly selected for this study using a lottery method. Hospitals were stratified into medical, surgical, and gynecological wards and there were 3,240 eligible admitted adult patients. Finally, proportional allocation were done in each ward and among selected hospitals using systematic random sampling. Respondents were interviewed on discharge using a pretested interviewer-administered questionnaire.

Measurements and Variables
Patient-centered care was the outcome variable of this study. Sociodemographic characteristics (age, sex, residence, educatio, marital status, occupation, and income), relationship factors (consultation, empathy, health care–provider facilitation), health-related factors (insurance, frequency of visits, routine checkups, perceived quality of care, and length of stay) and patient-related factors (perceived waiting time, perceived severity of illness, social well-being, prior illness experiences, and perceived involvement of care) were independent variables.

Patient-centered care was measured on eight dimensions (patient preference 7, education and communication 4, physical comfort 5, access to care 5, emotional support 4, continuity and transition care 4, coordination and integrated care 4, and involvement of family or friends 3) with total of 36 Likert scale questions (1 [strongly disagree] to 5 [strongly agree]). Patients who scored above the mean regarded as receiving patient-centered care (labeled 1) and below the mean as not receiving patient-centered care (labeled 0).[7]

Data-Collection Tools and Procedure

Data were collected using the pretested interviewer administered questionnaire, which had been developed based on previous research.[7,17,18] This covered sociodemographic characteristics, the eight dimensions of patient-centered care, patient-perceived involvement in care, health-care service, and the patient–provider relationship, and an open-ended questionnaire were used to collect data through in-depth interviews of selected health professionals in the study area. Five diploma- and two BSc-qualified nurses were recruited for data collection and supervision, respectively.

Data Quality Control

The questionnaire was prepared in English and translated into Amharic (the local language) and back to English by language experts to maintain consistency. Prior to data collection, 1 day's training was given to data collectors and supervisors on the study objectives, data-collection instruments, techniques, and producers. Pretesting was done on 39 patients (5%) at an Ataye primary hospital and necessary amendments made. The consistency and completeness of data were checked by the principal investigator and supervisors on a daily basis. The reliability of the tool was checked by investigators, with Cronbach's α for measuring patient-centered care of 0.97, consultation and empathy-related questions 0.73, and patient decision-making involvement 0.78, indicating good reliability.

Data Processing and Analysis

Quantitative data were transferred to Epi Info 7 and exported to SPSS 23 for cleaning, coding, and analysis. Descriptive measures were computed to summarize participants' sociodemographic characteristics and patient-centered care. Bivariate and multivariate logistic regression analysis was used to assess association between each independent variable and patient-centered care. Independent variables with $P<0.2$ on bivariate logistic regression were used for multivariate logistic regression analysis. AORs with 95% CIs and $P<0.05$ were used to reveal associations between explanatory and dependent variables. Variables with $P<0.05$ were considered significant. Model fitness was checked using the Hosmer–Lemeshow goodness-of-fit test ($P=0.57$) and multicollinearity checked using the variance-inflation factor. A factor <10 and tolerance >0.1 were regarded as absence of multi-collinearity. The audio-recorded qualitative interviews were transcribed verbatim and translated from Amharic into English by the first author. Translations were also done by data collectors to ensure that the participants' original meanings were fully captured and OpenCode 4.3 was used for analysis of the qualitative data.

Ethics Approval and Consent

Ethics approval was obtained from the University of Gondar Research and Ethical Review Committee, College of Medicine and Health Sciences (IPH/837/06/2012). In addition, letters of authorization from South Wollo Zone Health Department and hospital administrators were obtained before contacting participants. Participants were then fully briefed about the study's purpose and benefits, and written informed consent was obtained for both data collection and publication. Confidentiality was maintained through anonymity, and privacy measures were taken to preserve the rights of participants throughout the research, including with regard to publication. Finally, participants were asked about their willingness to join the study. Any participant willing to engage in the study and those who wanted to stop an interview at any time were allowed to do so. This study was conducted in accordance with the Declaration of Helsinki.

Results

Sociodemographic Characteristics of Respondents

A total of 611 patients participated, for a response rate of 98.8%. Mean age was 40.4±15.8 years. A majority (330, 54%) of respondents were male, and 371 (60.9%) had had no education. More than half (315, 51.6%) respondents were urban dwellers and more than two-fifths farmers (Table 1).

Patient Centered–Care Dimensions

Overall, 60.9% (95% CI 57.1%–64.5%) of patients received patient-centered care. More than 65% received care based on their needs and preferences and got emotional support from their care providers. Most of the health-care providers said that patients' preferences and needs were well understood and respected. They disagree on not providing the wrong care and not the patient's preferred type, because patients coming to the hospital requested both necessary and unnecessary services for their health problems.

> One patient wanted to have an X-ray not related to their illness and asked directly if they could come to the hospital for this. I advised them that an X-ray was not necessary for their illness. (30-year-old respondent)

Table 1 Sociodemographic characteristics of the study participants (n=611)

	Category	n	%
Sex	Male	330	54
	Female	281	46
Age, years	18–34	259	42.4
	35–64	276	45.2
	>64	76	12.4
Residence	Urban	315	51.6
	Rural	296	48.4
Education	None	371	60.9
	Primary school	86	14.1
	Secondary school	85	13.6
	Diploma and above	69	11.4
Marital status	Married	370	60.6
	Unmarried	241	39.4
Income, ETB	<5,200	555	90.8
	≥5,200	28	4.6
Occupation	Government	69	11.3
	Merchant	136	22.3
	Farmer	262	42.9
	Daily labor	101	16.5
	Other*	43	7

Note: *Private employer/student.

Table 2 Dimensions of patient-centered care (n=611)

	Category	n	%
Respect patient need and preference	Yes	400	65.5
	No	211	34.55
Information, education, and communication	Yes	318	51.9
	No	293	48.1
Physical comfort	Yes	302	50.6
	No	309	49.4
Access to care	Yes	341	55.8
	No	270	44.2
Emotional support	Yes	399	65.3
	No	212	34.7
Continuity of care	Yes	395	65
	No	214	35
Coordination of care	Yes	399	65
	No	212	35
Family or friend involvement	Yes	333	45.5
	No	278	54.5
Patient-centered care	Yes	372	60.9
	No	239	39.1

> Not only as a health professional but also as a human being, providing emotional support to patients is very important. (37-year-old respondent)

Two-fifths (45.5%) of care was delivered with the involvement of patients' friends and families, and more than half (50.6%) the patients received their care in physical comfort.

> Involvement of family or friends is based on the patient's decision, but may necessitate other considerations depending on the disease's condition. For example, TB patients can easily transmit the disease, so disclosure of this to the family for their protection is preferable. (29-year-old respondent, physician)

> In this hospital, we have changed the old beds to keep our patients comfortable. (34-year-old respondent) (Table 2)

Service Delivery and Patient-Related Characteristics

Of the 611 respondents, 379 (62%) had community health insurance and 425 (69.6%) had visited the health facility one to five times. Most respondents (412, 67.4%) perceived that they had been consultat and had received empathy from the health-care provider and 412 (32.6%) received good provider facilitation (Table 3).

Factors Associated with Patient-Centered Care

Bivariate analysis showed that sex, residence, age, marital status, education, length of stay, perceived quality of care, social well-being, decision-making involvement, provider facilitation, having community health insurance, consultation

Table 3 Service delivery and patient-related characteristics (n=611)

	Category	n	%
Frequency of health-facility visits	New	153	25
	Fewer than five	425	69.6
	Five and more	33	5.4
Community health insurance	Yes		
	No	232	38
Perceived quality of care	High	154	25.2
	Low	457	74.8
Length of stay, days	1–5	19	3.1
	6–10	122	20
	11–15	284	46.5
	>15	186	30.4
Patient-perceived severity of disease	Yes	511	83.6
	No	100	16.4
History of admissions	Yes	214	35
	No	397	65
Perception of physician competence	Yes	541	88.5
	No	70	11.5
Decision-making involvement	Yes	239	39.1
	No	372	60.9
Social well-being	Poor	300	49.1
	Good	311	50.9
Consultation and empathy	Poor	199	32.6
	Good	412	67.4
Health care–provider facilitation	Yes	230	37.6
	No	381	62.4
Routine checkups	Yes	214	35
	No	397	65

and empathy, routine checkups, patient-perceived severity of disease, and history of hospital admission were significant predictors of patient-centered care. Multivariate analysis illustrated that age, residence, length of stay, social well-being, perceived quality of care, routine checkups, and provider facilitation remained significantly associated with patient-centered care.

Accordingly, the odds of receiving patient-centered care were higher for patients who lived rurally than their counterparts (AOR 2.61, 95% CI 1.62–4.02). Patients age 35–64 years were 61% less likely to have receiv patient-centered care than those aged 18–34 years (AOR 0.39, 95% CI 0.32–0.64). Patients with high social well-being were

Table 4 Bivariate and multivariate logistic regression analysis of patient-centered care and associated factors (n=611)

	Patient-centered care		COR (95% CI)	AOR (95% CI)
	Yes	No		
Residence				
Urban	179 (56.8%)	136(43.2%)	1	1
Rural	193(65.2%)	103(34.8%)	1.42 (1.03–1.97)	2.61(1.62–4.02)*
Education				
None	199 (53.6%)	172(46.4%)	1	1
Primary	59(68.6%)	27(31%)	1.89 (1.15–3.11)	1.28 (0.64–2.55)
Secondary	70(82.3%)	15(17.7%)	4.03 (2.23–7.30)	1.23 (0.53–2.59)
Diploma and above	44(63.7%)	25 (36.3%)	1.52 (0.89–2.59)	0.98 (0.45–2.24)
Age, years				
18–34	175(67.5%)	84 (32.5%)	1	1
35–64	151(54.7%)	125(45.3%)	0.58 (0.41–0.82)	0.39 (0.32–0.64)**
≥64	46 (60.5%)	30(39.5%)	0.74 (0.43–1.21)	0.63 (0.30–1.32)
Prior hospital admission				
Yes	150(64.3%)	83(35.7%)	1.27(0.91–1.78)	1.57(0.97–2.52)
No	222 (58.7%)	156 (41.3%)	1	1
Routine checkups				
Yes	152(71%)	62(29%)	1.97(1.38–2.81)	1.90 (1.15–3.13)*
No	220 (55.4%)	177(44.6%)	1	1
Severity of disease				
Yes	299 (58.5%)	212(48.5%)	0.5(0.32–0.84)	0.93 (0.83–1.20)
No	73 (73%)	27 (27%)	1	1
Perceived quality of care				
Yes	315(68.9%)	142(31.1%)	3.78 (2.28–5.53)	3.69 (2.07–6.04)**
No	57(37%)	97(63%)	1	1
Length of stay, days				
1–5	15 (78.9%)	4(21.9%)	1	1
6–10	80(65.6%)	42(34.4%)	0.51(0.16–1.63)	0.34 (0.06–2.14)
11–15	181(63.7%)	103(36.3%)	0.47(0.15–1.47)	0.27 (0.04–1.60)
>15	96(51.6%)	90 (48.4%)	0.28 (0.09–0.89)	0.13 (0.023–0.79)*
Health care–provider facilitation				
Yes	169(73.4%)	61(26.6%)	2.43(1.71–3.47)	1.80(1.08–3.00)*
No	203(53.3%)	178 (46.7%)	1	1

(*Continued*)

Table 4 (Continued).

	Patient-centered care		COR (95% CI)	AOR (95% CI)
	Yes	No		
Social well-being				
Good	215(69.1%)	96(30.9%)	2.04(1.67–2.84)	2.34 (1.45–3.78)*
Poor	157(52.3%)	143(47.7%)	1	1

Notes: **$P<0.01$; *$P<0.05$; 1, reference.

2.34 times more likely to have received patient-centered care than their counterparts (AOR 2.34, 95% CI 1.45–3.78). The odds of patient-centered care were higher for patients who perceived their care to be of high quality than those who perceived it to be of low quality (AOR 3.69, 95% CI 2.07–6.04).

In addition, receipt of patient-centered care for those whose length of stay was >15 days was 87% times less likely than for those whose whose length of stay was >5 days (AOR 0.13, 95% CI 0.02–0.79). The odds of patient-centered care were higher for patients who received routine checkups than those did not (AOR 1.90, 95% CI 1.15–3.13). The odds of patient-centered care were higher among patients who received provider facilitation than their counterparts (AOR 1.8, 95% CI 1.08–3; Table 4).

Discussion

This study aimed to determine the magnitude of patient-centered care and associated factors among admitted patients in public hospitals of northeast Ethiopia. In sum, 60.9% (95% CI 57.1%–64.5%) received patient-centered care. This indicated that the remaining 39% had not received disease- or technology-centered care respectful of and responsive to individual patient preferences, needs, and values. This finding is higher than that from a cross-sectional study done in Tigray regional state, which found 54.5%.[11] This difference might be due to differences in measurement, study design, and study period. The Tigray study measured patient-centered care with a 17-item tool, while this study measured patient-centered care on eight dimensions with 36 questions. Our finding is also lower than the pilot study at the Ataye primary hospital and another study in Austria and the Netherlands.[19] This discrepancy could be due to differences in socioeconomic status, study design and period, and health-care systems.

We found that patient-centered care was less likely among adult patients than younger patients, in line with a US study. This might be due to differences between younger and older patients in patient–provider communication,[20] which implies greater information needs among younger patients than older. Patients who resided rurally received more patient-centered care than urban dwellers. This could be due to rural patients being more contented with simple help during care and urban patients being more informed. Patients who went for routine checkups were more likely to receive patient-centered care than those who did not, consistent with a US study.[20] This might be due to the former having established a relationship with their providers and increased involvement in decision-making regarding their healths.

Good consultation and empathy was more highly associated with patient-centered care than poor consultation and empathy, similar to an Italian study found health-provider empathy to be significantly associated with patient-centered care.[21] A US study showed that higher levels of perceived empathy during consultations were related to higher levels of patient-centered care.[17] This could be due to health care providers approach as friend and feel the patient feeling like them. Moreover, patients with high social well-being received more patient centered care than those with low social well-being in this study, which is supported by a Dutch study.[19] This could due to patients with better social-well-being understanding their provider and problems and express their preferences more.

Strengths and Limitations

This was the first study of this nature conducted in a public hospital in Ethiopia. We used eight dimensions to measure patient-centered care more widely. Participants were interviewed in separate areas to reduce social desirability bias but social desirability bias may be a limitation of this study.

Conclusion

This study revealed that among admitted patients, three in five received patient-centered care. Length of stay, social well-being, perceived quality of care, consultation and empathy, age, residence, health care–provider facilitation, and routine checkups were significantly associated with patient-centered care. Therefore, the Federal Ministry of Health should give thorough attention to improving patient-centered care by making a positive influence on factors that are believed to be important enablers of the service.

Data Sharing

Data will be available upon reasonable request from the corresponding author.

Author Contributions

Endalkachew Dellie (assistant professor), Bekalu Endalew, Rahel G/egziabher, and Gashaw Andargie Biks (professor), and Nigusu Worku made significant contributions to the work reported, whether in conception, study design, execution, acquisition of data, analysis and interpretation, or all these areas, took part in drafting, revising, or critically reviewing the article, gave final approval to the version to be published, have agreed on the journal to which the article has been submitted, and agree to be accountable for all aspects of the work.

Disclosure

The authors declare that they have no conflicts of interest for this work.

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