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Patient satisfaction with quality of primary health care in Benghazi, Libya

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Introduction: The Libyan National Health System (LNHS) is debated for the paradox of its performance versus impact. It has poor performance, but the national health statistics are good and competitive. There are concerted efforts to manage health care services and to regain the lost trust. A primary health care (PHC) system that focuses on preventive and promotive care is the core focus of LNHS efforts.
Objectives: To assess patient satisfaction with quality of PHC assessed in terms of (a) customer profile, (b) patient satisfaction, and (c) health care-seeking behavior.
Methodology: A sample of nine health centers and seven polyclinics from various locations in Benghazi, Libya were selected for gathering information by structured face-to-face interviews. A total of 310 beneficiaries were interviewed by using an Arabic translation of the Charleston Psychiatric Outpatient Satisfaction Scale.
Results: The beneficiaries appear to be quite satisfied with the quality of services. Geographical zone, marital status of beneficiary, and type of facility are satisfaction-related factors. There are preferences for facilities located within the City Centre over those located elsewhere. There is also an interaction effect of the geographical zone and the type of facility in creating differences in satisfaction.
Conclusions: A customer-friendly facility concept that emphasizes reception, physician interaction, and cordiality shall add value. Polyclinics require more attention as does the Al Slawy area. A few utility services might also be considered.

Keywords: *exit interviews*; *Health For All by All*; *geographic zone*; *administrative and environmental factors*; *health-seeking behavior*; *interaction effect*; *type and location of facility*; *place of residence*

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Primary health care (PHC) – preventive and promotive – receives prime importance under the Libyan National Health System (LNHS). Services are offered through polyclinics, health centers, health units, and workplaces (1), free of cost and within close proximity. Following Alma-Ata Declarations, the LNHS expanded PHC services to include general medical care (for adult population and elderly), care of children, minor surgeries, rehabilitation, family planning, obstetric care, perinatal care, first aid, dispensing of pharmaceutical prescriptions, preventive programs (immunization, screening, etc.), health promotion, and school health (2). The Secretariat of Health and Environment has been designated as the nodal agency to (a) administer PHC services; (b) ensure sustainability; (c) strengthen quality; and (d) emphasize community and outreach services (3).

The Libyan Health System offers PHC services through its public health care network, free of charge to all citizens. Major reforms in PHC were witnessed during 1990s in the form of National Health Strategy, National Health Decree, Health For All by All, and other actions (2). The PHC services are provided in Benghazi through 39 facilities: 10 primary health centers, 11 polyclinics, and 18 health units (Secretariat of Health, Benghazi). Based on the national motto of PHC, namely, 'Health For All by All,' the secretariat of health in Benghazi stresses (a) comprehensiveness; (b) equal distribution and utilization of resources; (c) integration of health development within

the whole process of socioeconomic development; (d) cooperation with the other related sectors; (e) use of appropriate technology; (f) community participation and involvement; and (g) establishing a link between people and PHC units (3). There are efforts to offer high quality of care at PHC level by (a) strengthening health administration, management training and improving health information and documentation systems; (b) developing health manpower resources through continuous education; (c) fostering concepts of PHC in medical schools; (d) maintaining existing health facilities for diagnostic and therapeutic capabilities; (e) improving methods of medical supplies; (f) advocating cooperation with the international, regional, and Arab organizations; and (g) increasing financial resources by creating new sources of funding and promoting rational use of available resources (3). Through Health Decree 24 of 1994, PHC in Libya was promulgated to restructure the system and to endorse elements such as mental health, school health, occupational health, and geriatric health (2).

PHC, as conceived by the International Conference held at Alma-Ata, requires full participation of all stakeholders and is offered at an affordable cost to create self-reliance and self-determination (4) in order to protect and promote the health of the world's population. These in turn facilitate attainment of the highest level of health and reduce gross inequality in health status. Quality of care is the prime consideration at this point: to offer proper services at the right time and provide the greatest health benefits with the least health risks to the greatest number of people given the available resources (5). Quality of care is 'a property of and a judgment upon, some definable unit of care and that care is divisible into at least two parts: technical and interpersonal. At the very least, the quality of technical care consists of the application of medical science and technology in a manner that maximizes its benefits to health without correspondingly increasing its risk' (6).

Quality of care within the context of PHC has technical, non-technical, and programmatic elements. The technical aspect refers to treatment techniques and equipments used, the non-technical aspect refers to the clients' waiting time and the staff's attitudes; and the programmatic aspect refers to policies, infrastructure, accessibility, and management. Quality might also be understood from (a) structural measures focusing on internal characteristics, (b) process measures focusing on procedures, such as diagnosis; and (c) outcome measures focusing on observed changes in health status (7). A dual perspective of quality of care considers the clients' concerns about technical competence as essential to quality healthcare (8). From a providers' perspective, quality means offering technically competent, effective, and safe care that contributes to an individual's well-being. Accordingly, elements that could produce an impact might include (a) client's knowledge; (b) client's health; or (c) client's satisfaction. As proposed by the above theorists, patient satisfaction is a reflection of the quality of care received. Measurement of satisfaction associated with improved clinical outcomes and administrative measures of quality (9) shall lead to identification of opportunities for improvement and competition.

It was in this context of the increasing importance of the quality of PHC in the Libyan health system and its importance in determining patient satisfaction, that this current study was carried out to assess (a) customer profile, (b) customer satisfaction; and (c) health-seeking behavior.

Patients and methods

This survey was conducted during January–February 2009 at PHC facilities (health centers and polyclinics) located in various geographical zones of Benghazi. The survey included nine primary health centers and seven polyclinics selected through a lottery method and giving geographical (cluster) representation (Table 1).

This survey was carried out by face-to-face interviews with the patients. The interviews were held as exit interviews within the facility premises. The Charleston Psychiatric Outpatient Satisfaction Scale (Likert-type scale) was translated into Arabic. This 15-item E5 response format (Excellent, Very Good, Good, Fair, and Poor) is intended to minimize positive response bias and optimize variability and predictive validity (9). The 15th item assesses behavioral intent to recommend the facility by using a 4-point scale (Yes Definitely, Yes Probably, No Probably Not, and No Definitely Not). Some are predictor items, such as overall quality and

Table 1. Sampling procedure

	Health centers			Polyclinics			
Facilities	All	Selected	Interviews	All	Selected	Interviews	Total interviews
Al Birka	4	3	40	5	3	40	80
Al Slawy	3	3	60	3	1	20	80
City Centre	3	3	110	3	3	40	150
Total	10	9	210	11	7	100	310

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Table 2. Characteristics of patients

Profile	Zone			Total
	Al Birka	Al Slawy	City Centre	
Age				
15–24	17 (21.3)	17 (21.3)	17 (11.3)	51 (16.5)
25–59	56 (70.0)	57 (71.3)	122 (81.3)	235 (75.8)
60+	7 (8.8)	6 (7.5)	11 (7.3)	24 (7.7)
Sex				
Male	24 (30.0)	34 (42.5)	53 (35.3)	111 (35.8)
Female	56 (70.0)	46 (57.5)	97 (64.7)	199 (64.2)
Education[a]				
Primary	9 (15.0)	22 (27.5)	29 (19.3)	60 (20.7)
Middle	9 (15.0)	19 (23.8)	38 (25.3)	66 (22.8)
Secondary	20 (33.3)	25 (31.3)	50 (33.3)	95 (32.8)
Higher	22 (36.7)	14 (17.5)	33 (22.0)	69 (23.8)
Marital status				
Currently married	63 (78.8)	36 (45.0)	97 (64.7)	196 (63.2)
Divorced	1 (1.3)	27 (33.8)	19 (12.7)	47 (15.2)
Widowed	–	2 (2.5)	8 (5.3)	10 (3.2)
Single	16 (20.0)	15 (18.8)	26 (17.3)	57 (18.4)
Occupation				
Teachers	7 (8.8)	2 (2.5)	11 (7.3)	20 (6.5)
Police	6 (7.5)	7 (8.8)	12 (8.0)	25 (8.1)
Other government job	30 (37.5)	32 (40.0)	49 (32.7)	111 (35.8)
Business	29 (36.3)	35 (43.8)	48 (32.0)	112 (36.1)
Unemployed	–	1 (1.3)	2 (1.3)	3 (1.0)
Retired	8 (10.0)	3 (3.8)	28 (18.7)	39 (12.6)
Type of family				
Nuclear	68 (85.0)	58 (72.5)	113 (75.3)	239 (77.1)
Joint	12 (15.0)	22 (27.5)	37 (24.7)	71 (22.9)
Size of family				
≤6	45 (56.3)	35 (43.8)	68 (45.3)	148 (47.7)
7–9	20 (25.0)	24 (30.0)	35 (23.3)	79 (25.5)
≥10	15 (18.8)	21 (26.3)	47(31.3)	83 (26.8)
Total	80 (100.0)[a]	80 (100.0)	150 (100.0)	310 (100.0)

[a]Twenty patients in Al Birka did not indicate educational level and are excluded from the calculation of percentage.
Note: Numbers in parentheses are percentages.

recommendation intent, and the other items assess administrative and environmental factors unique to the outpatient setting: helpfulness of secretariat, waiting time, amount of information received about the problem, respect for opinions, matching treatment plan with individual needs, helpfulness of services, appearance of waiting room, appearance of office, working hours, location, and parking.

The survey process was standardized by allotting three man-days in each facility during the morning shift. It was decided to conduct exit interviews with as many beneficiaries as possible within these three man days by adopting a random sampling method. Instructions were laid down to the researchers in the form of a Survey Manual.

Survey monitoring and data quality assurance was carried out by regular discussions with researchers, editing at field level, and centralized editing. The data were coded, computerized, cleaned, and analyzed. A total patient satisfaction score was calculated by adding the

scores of all the items except items 2 and 14 (payment and billing, which are not applicable because the services are offered free), item 8 (overall quality, an anchor item), and item 15 (recommendation intent). With each of the 11 included items scored as 5 (excellent), 4 (very good), 3 (good), 2 (fair), or 1 (poor), the total score varies between 11 and 55.

The data were analyzed by ANOVA (one-way and two-way), *t*-test, and Chi-square test. *P*-values <0.05 were considered significant.

Data collection was carried out with approval from Faculty of Public Health, Al Arab Medical University and also after obtaining permission from the Secretariat of Health and the concerned centers. Informed consent was obtained from the patients.

Results and discussion

Customer profile

The patients were mostly females (64.2%), had low levels of education, were married, and worked in service-oriented jobs (Table 2).

The female–male ratio was highest at Al Birka and City Centre (7:3 each) than in Al Slawy (3:2). Women have been reported to be frequent users of PHC in other populations as well (10). Female-oriented issues and childhood, likely take a higher importance at PHC facilities. A higher proportion of females (20.6% as against 9.0% in males) were in the age group of 15–24 years, indicating that there was a high demand for adolescent health and reproductive health care services at these facilities.

The pattern of educational status was similar in Al Slawy and City Centre, but with a slight trend to a lower level in the former. In Al Birka, 20 patients (25%) did not answer this question, which makes it unadvisable to draw conclusions regarding the seemingly higher educational level in this area.

There was a high demand from married persons (Table 2). This might not relate to the national population characteristics, as the mean age at marriage remains high in Libya (33 years for males and 29 years for females) (1). More patients from Al Birka were married (78.8%) compared to the City Centre (64.7%) and Al Slawy (45.0%). Among patients from Al Slawy there was a higher proportion of divorcees (33.8%). Two-thirds (66.8%) of those who were married were females and over half (56.8%) were males. A larger proportion of divorced persons were males (30.6%) compared to females (15.2%).

Though family bonds were strong in Libya, families were generally nuclear, and this was observed among the patients. The proportion of nuclear families was highest in Al Birka (85.0%), followed by City Centre (75.3%) and Al Slawy (72.5%). Half the families (52.3%) had more than six members at home. The frequency of small families (up to six members) was higher in Al Birka (56.3%) than in the City Centre (45.3%) and Al Slawy (43.8%).

Table 3. Mean satisfaction and *F* values of variables used in one-way ANOVA

Variable/Groups	Number of cases	Mean satisfaction	*F*-value	*P*-value
Geographical zone				
Al Birka	80	40.7	13.09	0.00
Al Slawy	80	41.5		
City Centre	150	44.4		
Marital status				
Currently married	196	42.3	1.99	0.14
Widowed/Divorced	57	44.1		
Unmarried	57	42.6		
Education[a]				
Primary and middle	126	42.7	0.53	0.43
Secondary	95	42.3		
Higher	69	41.9		
Family size				
<6 persons	148	43.0	0.30	0.74
7–9 persons	79	42.6		
10 and more persons	83	42.4		
Occupation				
Government sector	156	42.8	0.013	0.99
Business	112	42.6		
Unemployed	42	42.7		

[a]Twenty persons did not respond.

Customer satisfaction

The total satisfaction score was calculated by summing up items 1–13 of the Charleston Scale, but excluding items 2 and 8. Two-way ANOVA, one-way ANOVA,

Table 4. Mean satisfaction scores

Variable/ Groups	Number of cases	Mean satisfaction	*t*-value	*P*-value
Type of facility				
Polyclinic	100	41.7	−2.04	0.04
Health center	210	43.2		
Sex of client				
Male	111	43.4	1.58	0.12
Female	199	42.3		
Type of family				
Nuclear	239	42.8	0.70	0.49
Joint	71	42.3		

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Table 5. Satisfaction levels and variables used in chi-square test

Variable/ groups	Satisfaction score ≤40 *n* (%)	Satisfaction score >40 *n* (%)	Pearson's chi-square	Significance
Age				
15–24	21 (41.2)	30 (58.8)	3.4	0.06
25 and above	73 (28.1)	186 (71.8)		
Place of residence				
Al Birka	34 (30.4)	78 (69.6)	3.1	0.21
Al Slawy	39 (35.5)	71 (64.5)		
City Centre	21 (23.9)	67 (76.1)		

t-test, and Chi-square test were used to identify variables affecting satisfaction.

The overall average satisfaction score was 42.7. Satisfaction with PHC services is usually high (11). Geographic zone was found to be an important factor in creating satisfaction (F-value = 13.09; $p = 0.00$). Thus, the location of the health facility was important in determining satisfaction (Table 3). Mean satisfaction level was higher in the City Centre (44.4) than in Al Slawy (a mean of 41.5) and Al Birka (40.7).

There was no significant difference in patient satisfaction between the married and unmarried persons ($F = 1.99$; $p = 0.14$). Education, occupation, and family size had no relevance in creating differences in satisfaction.

The effect of the type of facility, gender, and type of family on satisfaction was analyzed by an independent sample *t*-test (Table 4). Only the type of facility was found to produce a significant difference in satisfaction ($t = -2.04$; $p = 0.04$), with patients expressing greater satisfaction with health centers than with polyclinics. It might be inferred that health centers offer comparatively better quality of services.

Mean satisfaction among males and females was not significantly different ($p = 0.12$). There was also no significant difference in satisfaction level across the three localities (Table 5).

Comparison of satisfaction level in age groups showed that patients who were 25 years or older were significantly more satisfied ($p = 0.06$) than those who were younger (Table 5). This indicates that younger patients had higher expectations and were more critical. These results confirm the findings of a similar study conducted in United Arab Emirates (12).

Health-seeking behavior

Some patients sought treatment in a facility outside their zone of residence. This choice was significantly associated with the zone of residence. A higher proportion of persons from Al Birka and Al Slawy sought facilities outside their residential zone ($\chi^2 = 24.01$; $p < 0.01$). Half of those residing in Al Birka and over one-third of those from Al Slawy went outside their residential area (Table 6a). By contrast, only 13.6% of the City Centre residents went to another zone. Looked at from the other perspective, 49.9% of those attending facilities in the City

Table 6. Health-seeking behavior

a. Seeking facilities by location of residence

		Facility	
Residential zone	No. of patients	Within the residential zone	Outside the residential zone
Al Birka	112	61 (54.5)	51 (45.5)
Al Slawy	110	73 (66.4)	37 (33.6)
City Centre	88	76 (86.4)	12 (13.6)
Total	310	210 (67.8)	100 (32.2)

b. Seeking facilities by the location of facility

		Residential zone	
Facility zone	Number of patients	From within	From outside
Al Birka	80	61 (76.3)	19 (23.8)
Al Slawy	80	73 (91.3)	7 (8.8)
City Centre	150	76 (50.1)	74 (49.9)
Total	310	210 (67.8)	100 (32.2)

Table 7. Mean satisfaction and variables in one-way ANOVA for those who seek facilities outside

Variable/groups	Mean satisfaction	Number of cases	*F*-value	Significance
Geographical zone				
Al Birka	39.6	19		
Al Slawy	34.6	7	18.0	0.00
City Centre	44.6	74		
Education[a]				
Primary and middle	43.8	46		
Secondary	42.2	30	1.67	0.19
Higher	41.2	22		
Marital status				
Currently married	43.4	68		
Widowed/divorced	42.3	17	0.82	0.44
Unmarried	41.3	15		
Occupation				
Government sector	43.1	46		
Business	43.3	37	0.79	0.46
Unemployed	41.2	17		
Family size				
<6 persons	44.8	45		
7–9 persons	41.4	21	4.8	0.10
10 and more persons	41.2	34		

[a]Two patients gave no response.

Centre came from other zones, whereas only 8.8% of those attending Al Slawy facilities were from other zones (Table 6b).

These results indicate that in general there was more satisfaction with the facilities in the City Centre. This was supported by analysis of satisfaction among the 100 persons who attended facilities outside their zones. Those attending facilities in the City Centre were more satisfied (mean 44.6) than those going to Al Birka and Al Slawy (means 39.6 and 34.6, respectively) (Table 7). The differences in satisfaction scores were statistically significant (F-value = 18.0; p = 0.00). This suggests that persons seek services in facilities with which they were more satisfied even if they were outside their residential zone.

Family size was also related to satisfaction (F-value = 4.8; p = 0.10). Mean satisfaction was higher among those who reside in small families as compared to medium and large families (44.8, 41.4, and 41.2). Education, marital status, and occupation were not significantly associated with satisfaction.

Type of facility was another variable that produced differences in satisfaction (Table 8). More satisfaction was expressed by those attending health centers (mean 43.9) than polyclinics (41.0) (t-value = −2.4; p = 0.02). These statistics indicate that those who access health centers located at zones outside their own residential zone were more satisfied. On the other hand, health centers were more satisfactory than polyclinics for those who seek care away from their homes.

Table 8. Mean satisfaction and variables in t-test for those who seek facilities outside

Variable/groups	Number of patients	Mean satisfaction	*t*-value	*P*-value
Type of facility				
Polyclinic	35	41.0	–2.4	0.02
Health center	65	43.9		
Sex of client				
Male	36	43.6	0.94	0.35
Female	64	42.5		
Type of family				
Nuclear	72	43.5	1.6	0.111
Joint	28	41.4		

Interaction effect of zones and facility on satisfaction

In creating differences in satisfaction, there was an interaction effect between the two types of facilities on the one hand, and the three zones in which the facilities were located, on the other hand. While both of these variables create differences in satisfaction independently, differences were also created through interaction of these two sets of variables (Table 9). The difference in patient satisfaction due to the main effect of facilities was found to be insignificant (F = 2.31; p = 0.128). The main effect of the zone was found to be highly significant (F = 14.3; p = 0.000), meaning that satisfaction varies widely across zones. The interaction of these variables in patient satisfaction was highly significant (F = 31.6; p = 0.000), which means that variations in patient satisfaction across zones were created through the type of facilities.

Table 9. Interaction of facilities and zones (two-way ANOVA) on satisfaction

	Mean square	*F*-value	*P*-value
Model	94,719.5	3,441.6	0.000
Facility	64.3	2.31	0.128
Zone	392.4	14.3	0.000
Interaction	869.5	31.6	0.000
Error	27.5	–	–

Note: R^2 = 0.985.

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Table 10. Interaction of facilities and zones in creating differences in satisfaction

Zone/Facility	*n*	Mean satisfaction	Standard deviation
Al Birka			
Polyclinic	40	38.5	6.13
Health center	40	42.9	6.23
Total	80	40.7	6.53
Al Slawy			
Polyclinic	30	47.8	2.24
Health center	60	39.4	6.40
Total	80	41.5	6.72
City Centre			
Polyclinic	40	41.9	4.80
Health center	110	45.3	4.26
Total	150	44.4	4.65
Total			
Polyclinic	100	41.7	6.04
Health center	210	43.2	5.90
Total	310	42.7	5.98

This interaction was evident from Table 8, which shows that health centers create a high level of satisfaction (mean of 43.2) compared to polyclinics (mean of 41.7). Health centers in City Centre create a satisfaction score of 45.3, which was followed by Al Birka (mean of 42.9) and Al Slawy (mean of 39.4) (Table 10). Polyclinics, on the other hand, were highly satisfactory at Al Slawy (mean of 47.8), followed by City Centre (mean of 41.9) and Al Birka (mean of 38.5). Thus, there was a disparity in the health center *versus* polyclinic issue in that polyclinics at Al Slawy were more satisfactory in offering quality services, whereas health centers in City Centre and Al Birka were more satisfactory.

Conclusions

Customers of the public sector PHC facilities in Benghazi expressed high levels of satisfaction. Factors related to differences in satisfaction were type and location of facility and age of customer. The decision to select a facility was associated with the place of residence. Persons seeking a facility outside of their residential zone were more satisfied. More satisfaction was expressed for health centers than for polyclinics, and there was an interaction of satisfaction between the geographical location and type of facility.

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