Effect of Family Physician Qualification on Patient Satisfaction in King Abdul-Aziz National Guard Hospital Al-Ahsa, Saudi Arabia 2017

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Abstract: *This cross-sectional study was conducted at the Family Medicine department at King Abdul-Aziz Hospital in Al-Ahsa between January 15 and February 8, 2018. It aimed to measure patient satisfaction with health services and physicians, and to assess the effect of physician qualification on patient satisfaction via a self-administered questionnaire. In total, 351 randomly selected questionnaires,completedduring the printing of discharge summary papers, were analyzed. Proportions of patientswho weresatisfiedwith primary healthcare services and physicians were 88.6% and 96.4%, respectively. Patient satisfaction withprimary healthcare services provided by board-certified physicians was higher relative to that observed for noncertified physicians (AOR: 2.4, P = .04, 95% CI: 1.04–5.55). Patients treated by board-certified physicians were significantly more satisfied with their physicians relative to those treated by noncertified physicians (AOR: 2.7, P = .04, 95% CI: 1.03–7.2). These results indicatedthat physician qualification influenced patient satisfaction.*

Keywords: Patient satisfaction, physician qualification, primary healthcare services, Saudi Arabia

1. Introduction

Primary healthcare (PHC) is an important aspect of healthcare systems that deliver comprehensive services (Bener et al., 1993). Saudi Arabia usesthe "Almaata" declaration to formulate its healthcare system and aims to providehealthcare services for all citizens.In 1980,itadopted the World Health Organization's"Health for All"policy, which promotes the application of PHC as a superior means of reaching goals (Bener et al., 1993; Billinghurst andWhitfield, 1993). The plan for PHC improvement aims to increase PHC availability and its role in co-ordination between all sectors of theMinistry of Health (Al-Mazrou et al., 1990).

The public sector enhances preventive medicine, reduces infectious diseases, and encourages people to seek PHC as a first step (Saudi Arabia Vision, 2016).Further,it emphasizes the importance and improves the quality of preventive care and therapeutic services, as they aim to enhance and optimize facilitiesat hospitals and healthcare centers(Saudi Arabia Vision, 2016).Physicians are one of the cornerstonesofpatientsatisfaction. Pascoedefined patient satisfaction as "a health care beneficiary's reaction to important factors of all aspects of the service provided in PHC" (1983, pp. 185–210). Satisfaction generally refers tothe patient's feeling that PHC services are not deficient and meet his or her needs and expectations (Avis et al., 1995).

The World Health Organization(2008) proposed five factors forattaining this goal: excluding exceptions and differencesbetween people in health, formulating health services based on people's needs and expectations, contributing to health in all other sectors, following

collaborative styles of policy dialog, and raising the participation of stakeholders (Almutairi, 2016).

Numerous studies have been conducted in Saudi Arabia to assess patient satisfaction, but mostdonot focus on satisfaction with healthcare providers. Moreover, measuring the effect of physician qualification on patient satisfaction is a novelapproach in this field, which will improve the quality of PHC services. This study aimedto measure the rate of satisfaction with family medicine (FM) physicians and to assess the relationship between physician qualification and patient satisfaction.

2. Methodology

Across-sectional study was conducted at the FM and PHCdepartmentsof King Abdul-Aziz National Guard Hospital in Al-Ahsa, between January 15 and February 8, 2018. The departmenttreats National Guard dependents, employees, or employees' dependents.The study included 36 physicians from FM, employee, business, and general practice clinics, distributed as follows: two consultants, eight assistant consultants, two board-certified physicians, 21 staff physicians, and three R4 residents.The study also included 351 patients aged ≥18 years (mean age: 45.6 ± 15.9) who visited the clinics during regular working hours within the study period.

The investigators collected data at the nursing station while printing discharge summary papers, assistedpatients in completing the questionnaire, and answered queries. Random samplingwas used to selectevery other patient who fulfilled the study criteria.A required sample size of 350 was estimated, using the one proportion equation for sample size estimation. Based on Almutairi's study, we assumed a rate of

66% for patient satisfaction with PHC(Sebo et al., 2015), a type I error of 5%, and an accuracy of proportions estimate of 5%.

A self-administered questionnairewas used to measure patient satisfaction with the service and healthcare providers. During the questionnaire's creation, the study investigators reviewed previous studies(Al-Doghaither et al., 2001; Alaiban et al., 2003; Al-Sakkaket al., 2008;Almoajel et al. 2014; Mohamed et al., 2015; Sebo et al., 2015), translated the original versioninto Arabic, and performed backtranslation.The questionnairewasreviewed by three FM consultants and a biostatistics expert, who assessedvalidity and reliability andmodified it accordingly.A pilot study with 21 participants was conducted in the same department. The reliability of the questionnaire was assessed, and it demonstrated good internal consistency between items (Cronbach'sα = .90).

The questionnaire included three sections: Section 1 collecteddemographic data (six items), Section 2measuredsatisfaction with healthcare settings and providers, andSection 3collectedvisit-related data.

The dependent variable was patient satisfaction, divided into satisfaction with healthcare settings and providers. Responses were provided using a five-pointLikert scale ranging from1 (very poor) to 5(excellent). Independent variablesincludedage, sex, marital status, employment status, residence, reason for visit,clinic, physician's qualification, physician's sex, andtime of visit. Physicians were classified as board-certified physicians or general practitioners(GPs) depending on certification,following completion of a boardtraining program recognized by the Saudi Commission of Health Specialties.

During data analysis, all variables were coded before entry and checkedusing SPSS.Frequency tables were created with percentages for categorical variables. Central tendency, dispersion, and distribution were assessedfor continuous variables. Physician qualification was assessed usingchi-square tests, bivariate analysis, and logistic regression as a multivariate analysis. Adjusted odds ratios (AORs)were calculated, and the significance level was set at .05, with a 95% confidence interval that did not cross the null hypothesis (Nh=1).

The study was approvedby the Saudi Commission for Health Specialties, King Abdullah International Medical Research Center, and related departments.All information gained via the questionnaire remained confidential, and all participants provided written informed consent.
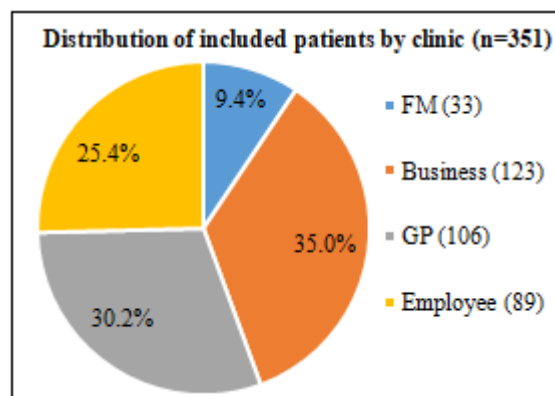
3. Results

Figure 1: Patient distribution according to clinic
FM = family medicine, GP = general practice

Table 1 shows the general characteristics of patients and physicians.

Table 1: Distribution of general characteristics

Variable	Category	n (N = 351)	%
Age (years)	18–40	142	40.5%
	41–59	132	37.6%
	≥60	77	21.9%
Sex	Male	168	47.9%
	Female	183	52.1%
Marital status	Married	290	82.6%
	Single	46	13.1%
	Divorced	4	1.1%
	Widowed	11	3.1%
Employment status	Student	29	8.3%
	Homemaker	116	33%
	Employed	107	30.5%
	Retired /Unemployed	99	28.2%
Residence	Outside	325	92.6%
	Housing	26	7.4%
Reason for visit	New visit	97	27.6%
	Follow-up	234	66.7%
	Refill	13	3.7%
	Other	7	2%
Physician's qualification	Board certified	169	48.1%
	Nonboard certified	182	51.9%
Physician's sex	Male	187	53.3%
	Female	164	46.7%

Table 2 shows patient satisfaction with PHC services and physicians.

Table 2: Proportions of patients satisfied with healthcare services

	Questionnaire item	Satisfied		Dissatisfied	
		n	%	n	%
A)	**Patient satisfaction withprimary healthcare service**				
1	Easy access to primary healthcare services	220	62.60%	131	37.30%
2	Working hours of primary healthcare service	331	94.30%	20	5.70%
3	Waiting time between nursing screening and consultation with physician	265	75.50%	86	24.50%
4	Total time spent from entering to exiting primary healthcare service(missed=1)	268	76.60%	82	23.40%
5	Comfortablenessof waiting area	259	73.80%	92	26.20%
6	No problems or constraints encountered during visit to primary healthcare service	288	82.10%	63	17.90%
7	Overall satisfaction with primary healthcare service	311	88.60%	40	11.40%
B)	**Patient satisfaction with physicians**				

8	Physician's friendliness and politeness	335	95.40%	16	4.60%
9	Physician's explanation regardingpatient's current condition or health problem	326	92.90%	25	7.10%
10	Physician's concern regarding patient's questions and worries	331	94.30%	20	5.70%
11	Physician's efforts to include patient in decisions about treatment	323	92.00%	28	8.00%
12	Physician's explanation regarding management plan and prescribed medications	325	92.60%	26	7.40%
13	Physician's instructions regarding follow-up and referral toanother specialty or physician	329	93.70%	22	6.30%
14	Patient's understanding of the physician's words and explanation	337	96.00%	14	4.00%
15	Total time spent with physician in the clinic	336	95.70%	15	4.30%
16	Likelihood of recommendingthe physician to other patients	326	92.90%	25	7.10%
17	Overall satisfaction with the physician	328	93.40%	23	6.60%

The results of bivariate analysis ofphysicians' qualificationsare shown in Table 3.

Table 3: Distribution of general characteristics according to physician qualification

Variable	Category	Board certified (N = 169)		Nonboard certified (N = 182)		P
		n	%	n	%	
Age (years)	18–40	56	33.10%	86	47.30%	0.03
	41–59	71	42%	61	33.50%	
	≥60	42	24.90%	35	19.20%	
Sex	Male	96	56.80%	72	39.60%	0.001
	Female	73	43.20%	110	60.40%	
Marital status	Married	141	83.40%	149	81.90%	0.7
	Unmarried	28	16.60%	33	18.10%	
Employment status	Employed	58	34.30%	49	26.90%	0.001
	Homemaker	39	23.10%	77	42.30%	
	Other	72	42.60%	56	30.80%	
Residence	Outside	159	94.10%	166	91.20%	0.3
	Housing	10	5.90%	16	8.80%	
Reason for visit	Follow-up	116	68.60%	118	64.80%	0.5
	New visit & other	53	31.40%	64	35.20%	
Physician's sex	Male	121	71.60%	66	36.30%	0.001
	Female	48	28.40%	116	63.70%	

Table 4 shows the distribution of patient satisfaction according to physician qualification.

Table 4: Distribution of satisfaction according to physician qualification

	Questionnaire item	Board certified (N = 169)		Nonboard certified (N = 182)		P
		n	%	n	%	
Patient satisfaction with primary healthcare service						
1	Easy access to primary healthcare services	105	62.10%	115	63.20%	0.8
2	Working hours of primary healthcare service	160	94.70%	171	94%	0.8
3	Waiting time between nursing screening and consultation with physician	147	87%	118	64.80%	0.001
4	Total time spent from entering to exiting primary healthcare service (missed=1)	148	88.10%	120	65.90%	0.001
5	Comfortableness of waiting area	136	80.50%	123	67.60%	0.006
6	No problems or constraints encountered during visit to primary healthcare service	145	85.80%	143	78.60%	0.08
7	Overall satisfaction with primary healthcare service	160	94.70%	151	83%	0.001
Patient satisfaction with physician						
8	Physician's friendliness and politeness	165	97.60%	170	93.40%	0.06
9	Physician's explanation regardingpatient's current condition or health problem	163	96.40%	163	89.60%	0.01
10	Physician's concern regarding patient's questions and worries	164	97%	167	91.80%	0.03
11	Physician's efforts to include patient in decisions about treatment	159	94.10%	164	90.10%	0.2
12	Physician's explanation regarding management plan and prescribed medications	160	94.70%	165	90.70%	0.2
13	Physician's instructions regarding follow-up and referral toanother specialty or physician	160	95.30%	168	92.30%	0.3
14	Patient's understanding of the physician's words and explanation	163	96.40%	174	95.60%	0.7
15	Total time spent with physician in the clinic	162	95.90%	174	95.60%	0.9
16	Likelihood of recommending the physicianto other patients	161	95.30%	165	90.70%	0.1
17	Overall satisfaction with the physician	163	96.40%	165	90.70%	0.03

The results of the multivariate analysis are shown in Tables 5 and 6. The AORforpatient satisfactionwith PHC serviceswas adjustedfor age, sex, employment status, and physician's sex. The AOR for patient satisfaction with physicianswas adjustedforpatients' sex and employment status.

Table 5: Multivariate analysis of patient satisfaction with healthcare services

Variable	Category	B	AOR	P	95%CI
Age		0.02	1.02	0.23	0.99–1.04
Sex	Male	-0.44	0.7	0.43	0.22–1.91
	Female				
Employment status	Employee	0.06	1.06	0.91	0.41–2.76
	Homemaker	-0.54	0.59	0.32	0.20–1.69

	Other			0.57	
Physician's gender	Male	0.94	2.57	0.02	1.13–5.83
	Female				
Physician's qualification	Board certified	0.88	2.4	0.04	1.04–5.55
	Noncertified				
	Constant	1.06	2.9	0.08	

*-2 Log likelihood=228.410, Cox & Snell R^2=.06, Nagelkerke R^2=.11. AOR = adjusted odds ratio

Table 6: Multivariate analysis of patient satisfaction with physicians

Variable	Category	B	AOR	P	95%CI
Sex	Male	-0.02	0.98	0.98	0.29–3.30
	Female				
Employment status	Employee	-0.81	0.45	0.16	0.14–1.40
	Homemaker	-0.54	0.58	0.45	0.14–2.40
	Other			0.38	
Physician's qualification	Board certified	1.01	2.7	0.04	1.03–7.20
	Noncertified				
	Constant	2.8	15.8	0.001	

*-2 Log likelihood=162.735, Cox & Snell R^2 =.02, Nagelkerke R^2=.05. AOR = adjusted odds ratio

4. Conclusions and Discussion

This study examined the rates of patient satisfaction with primary healthcare services and FM physicians. Rates of satisfaction with healthcare settings in previous studies conducted in Saudi Arabia vary. Mohamed et al. (2015) estimated apatientsatisfaction rate of82% in AlMajmaah; Almoajel et al. (2014)reported an overall patient satisfaction rate of 77% in AlJubail;and Al-Sakkaket al. (2008) observedan overall satisfaction rate of 64.2% in Riyadh in 2008.The patient satisfaction rate observed in this study was higher relative to those reported in these previous studies; this could be attributed to differences in times, locations, participants, study objectives and methods, and questionnaire content.

Results revealedthat patients of board-certified physicians were significantly more likely to be satisfied with the physicians in comparisonto those of nonboard-certified physicians. Sebo et al.(2015) assessed 23 GPs' perceptions of 1,637 patients' satisfaction and expectations in primary care in Genevain 2015 andfound that a GP's certification status was a significant factor affecting patient satisfaction (odds ratio: 0.6, P = .04, 95% CI: 0.6). These findings are consistent with those of this study, as board-certified physicians are more familiar with patients' needscomparedto GPs. Further, they usually possessextensiveexperience and have studied social and behavioral sciences in higher education.

The results of the bivariate analysis showed differences between board-certified and nonboard-certified physicians according to patient age, sex, employment status, and physician's sexbut not marital status, residence, orthe reason forthe visit.In addition, there were significant results in the satisfaction of time period of the visit, comfortable place, and feasibility process. Patients were more likely to be satisfied with PHC services if physicianswere male(AOR: 2.57, P = .02, 95% CI: 1.13–5.83) and board certified (AOR: 2.4,P = .04, 95% CI: 1.04–5.5). Satisfaction with explanations of patients'conditions or health problemswas

greater forboard-certified physicians relative to that fornonboard-certified physicians (OR: 2.77, P = .01). Further, patients aged18–40years reported greater satisfaction with board-certified physicians relative to that reported for nonboard-certified physicians(P = .03).

Mohamed et al. (2015) reported that unsuitable buildings and lack of clean facilities and technical competency in staff members were common reasons for low levels of satisfaction (rates: 33.1%, 24.2%, and 29%, respectively). In comparison,the comfort of the waiting room affected satisfaction rates in this study. In addition, Mohamed et al. (2015)reported a significant association between the level of patient satisfaction with PHC services and high levels of education in respondents. However, sex, marital status, and income did notaffect satisfaction levels. In this study,the findings regarding sexwere consistent withMohamed et al.'s (2015) study, in which sexdidnot affect satisfaction.

Ghorbani et al. (2015) reported that increases of oneyear in patients' ageswere associated with reductions in their satisfaction levels (B=0.12, P = .03),and levels of satisfaction in rural areaswere lower relative to those reported in urban areas(B=7.93,P = .03)in Iran in 2015.In this study, younger patients (aged 18–40 years)reported significantly greater satisfaction with board-certified physicianscomparedto older patients.

Almoajel et al. (2014) assessed patients' satisfaction with various aspects of PHC servicesand reported a significant relationship between satisfaction levels and patients' sex (P<.05), with higher levelsreported in women (94.3%) compared to those observed in men. Further,satisfaction was significantly associated with occupational level, and students reported the greatest satisfaction(100%), followed by workers (75%). These findings showed that PHC providers should paygreater attention to patients' enquiries to improve patient health, and addressall oftheir concerns to ensure high-quality healthcare.Levels of satisfaction with the accessibility of PHC services in Almoajel et al.'s (2014) studywere higher comparedto those observed in this study. This difference could be attributed to location, as Almoajel et al.'s (2014) study was conducted at a housing compound,increasing accessibility, and this study was conducted at a hospitalthatis some distance from the most populated areas of the city.

The study was subject tosome limitations.Some patientsdid not read every questionnaire item carefully and respondedinappropriately, whichled to missing data. Some patients did not complete the questionnaire because they were sick and responded quickly.Further, many studies examining patient satisfaction have been conducted at different healthcare centers in Saudi Arabia, and it is a common research topic. Every healthcare institutionis required to assess employee effectiveness and patientsatisfaction via client feedback; moreover, it is a major standard in most accreditation organizations.

Despite these limitations, the study had some strengths. For example, the sample size was estimated scientifically, and the investigators controlled the sampling technique directly. Further, the response rate was high (99.72%)because the

investigators assisted participants in completing the questionnaire.In addition, the questionnaire was reviewed and piloted with 21 participantsto ensure validity and reliability.Moreover, satisfaction with services and physicians was assessed separately in the questionnaire.

Thisstudy'sfindingsshowedthat physicians' qualifications played a significant role in patient satisfaction, in that patient satisfaction levels differed between board-certified andnonboard-certified physicians.

Further studies should be conducted to addressthis issue. Specifically,we recommend a case-control study examining differences in patient satisfaction levels withfamily physicians with different qualifications. Additionally, a larger sample size is required to provide a more accurate demonstration of variations in satisfaction.

5. Acknowledgements

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