Demographic determinants of patient satisfaction among hypertensive and patients with diabetes in primary health care centers, Jeddah

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Abstract

Background: Patient satisfaction has been widely investigated in health care research as an indicator of the quality of care. It has been viewed as an important tool for assessment of the level of care from the patient's perspective.

Aim and Objectives: The objective of the study was to explore the degree of chronic patients' satisfaction towards services provided through the primary health care (PHC) centers in Jeddah city and to determine the demographic characteristics of the patients that might affect their overall perception of satisfaction about the provided services.

Material and Methods: A cross-sectional design was adopted where 400 chronic disease patients were selected randomly from eight centers where they were invited to fill predesigned questionnaire prepared to assess their satisfaction about the health services.

Results: The overall satisfaction score accounted for 3.7/5 which approximate to 74%, and the highest scores were reported for their satisfaction about the performance and behavior of nurses and physicians. Monthly income was the significant determinant for overall satisfaction; the highest is the income the lowest is the level of satisfaction. Among other determinants which showed statistical significance with satisfaction subscales were age and educational level of with easiness of access to the center; the older patient is more satisfied than the younger one while the highest is the educational level the lowest is the level of satisfaction.

Conclusion: Patients with chronic disease are remarkably satisfied about the services provided in PHC centers in Jeddah; and the level of satisfaction is influenced significantly by the age, educational level, and monthly income.

KEY WORDS: Primary health care, diabetes, hypertension, satisfaction.

Introduction

Diabetes and its complications are a growing concern worldwide. Globally, the number of people with diabetes is expected to almost double in the next two decades, increasing from 194 million in 2003 to 380 million in 2025.[1]

Similarly, it had been reported that the overall global prevalence of hypertension accounted for 26.4% of the adult population in 2000, and it is estimated to reach about 29.5% in 2025.[2] Therefore it had been asserted that both hypertension and diabetes mellitus are important public-health challenges worldwide.[1,2]

The detection and control of these patients should be the responsibility of primary care, whose duties include introducing them to the health system, starting treatment early, prevent complications, and be capable of prompt referral to other levels of care. It is clear that to achieve this purpose, these units must have trained health personnel, equipment and supplies sufficient and adequate and functional information system and updated.[3]

The quality of care in general and for patients with chronic diseases in specific are in recent times viewed as the degree to which health services meet needs and expectations of

the patients, both as to technical and interpersonal care.[4] Moreover, it becomes more and more important to deliver medicine that meets the subjective needs of patients.[5]

Accordingly, patient satisfaction is taken into account when planning services, and is used by healthcare providers as a measure of healthcare quality.[6] Moreover, it has been accepted that evaluation of patient satisfaction is a valuable addition to other types of outcome measures (such as health status, quality of life or costs) in measuring the quality of general practice care.[5] And identifying factors that independently influence treatment satisfaction may help in improving clinical outcomes.[7]

Despite its importance, the association between satisfaction and health outcomes is poorly understood.[6] That was partially attributed to the problems with establishing a tangible definition of "satisfaction" and difficulties with its measurement.[8]

Moreover, studies on factors associated with patient satisfaction and the utilization of health services are scarce in the literature.[9] And fewer studies attempted to identify characteristics of patients such as age, gender, and geographical region to predict patient satisfaction levels.[10]

In the Kingdom of Saudi Arabia (KSA), primary health care (PHC) physicians began to play an important role and take increasing responsibility for the care of diabetes. In order to help the PHC physicians to manage particular chronic diseases namely diabetes and hypertension, the Ministry of Health (MOH) in the KSA approved the guidelines and standards of diabetic and hypertensive care at PHC levels through a Scientific Quality Assurance Committee in 1994.[11] Since then, only mini-reports were provided to evaluate the quality of care provided through the chronic patients' care clinics in the PHC centers.[12]

The present study aimed to assess the satisfaction level of patients and its demographic determinants about the provided services through the chronic diseases care clinics of MOH PHC centers in Jeddah 2012.

Material and Methods

A cross-sectional descriptive study based on interview has been carried out in Jeddah Governorate, Saudi Arabia. It is located on the west coast of the Kingdom of Saudi Arabia with population of 3,400,000 in an urban area of 1765 km².[13] It is considered as the main seaport of the Kingdom, and the principal entry gate for Holy Makkah. There are 38 PHC centers providing essential curative and preventive health care including care of patients with diabetes and hypertension through mini-clinics. For administrative and geographic considerations, the health centers are grouped under four supervisory sectors; each sector encompasses 9–10 centers. Target population for the study was patients with diabetes aged 18 years and above and registered in the mini-clinics in PHC centers who accounts for 22,500, in addition to about 8200 hypertensive patients. The average monthly visits is 3320 for patients with diabetes and 2430 for patients with diabetes.[14]

Using the statistical program EPI ver. 6.4 for calculation of sample size, that the percentage accounted for 50% to get the maximal sample size and by using the worst acceptable percentage as ± 5%, and using the confidence level of 95% and the power of 80%, the calculated sample size accounted for 384 which was rounded to 400 patients. Multistage sampling was conducted to select 200 patients with diabetes and 200 patients with hypertension. First stage: provided that there are assumed socio-demographic differences among population according to their residence, and demographic characteristics are the fundamental independent variables in the current study, therefore, and in order to represent different levels in our sample, two centers were selected by simple random sampling from each supervisory sector, making a total of eight centers. Second stage: systematic convenient sampling was followed to enroll every other patient attending the mini-clinic and fulfilling the inclusion criteria till completing the sample size designated for each center (25 patients with diabetes and 25 patients with hypertension). In case of violation of the inclusion criteria, the next patient was invited to be recruited in the study (Figure 1).

Self-administered questionnaire was used for assessing patients' satisfaction, the questionnaire is adopted from the General Practice Assessment Questionnaire,[15] and the Consultation Today Questionnaire.[16] The response for each item of doctor's communication skills and enablement is either "usually", "occasionally" or "rarely". The original questionnaire had been translated into Arabic and was used and tested for validity and reliability in a study conducted in Riyadh, Saudi Arabia.[17] To ensure reliability of the questionnaire, Chronbach alpha test was carried out which revealed a value of 0.84; which is considered as sufficient level for adoption of the questionnaire. It covers the socio-demographic characteristics of the patients, level of satisfaction as it consists of different domains to assess the participants' level of satisfaction and their responses are rated from a minimum score of one (completely unsatisfied) to a maximum score of five (fully satisfied). Domains reflecting the overall services provided through the center including accessibility to services, continuity of care, laboratory services, pharmacy services, radiology services, as well as general aspects of health care center (appendix). Each domain consists of questions to assess the level of satisfaction and for each question or statement there are 5 answers, reflecting the performance of the health center as expressed by the participants on a Likert scale ranging from 1 (strongly dissatisfied) to 5 (strongly satisfied) . For the passive questions or statement the score is reversed. Pilot study was conducted in one of the MOH PHC centers among 40 patients (20 patients with diabetes and 20 patients with hypertension) to ensure applicability, and to estimate average time to complete a questionnaire per patient.

Data entry and statistical analyses were carried out using SPSS 16.0 statistical software package. Quality control was carried out at the stages of coding and data entry. Data were presented using descriptive statistics in the form of frequencies
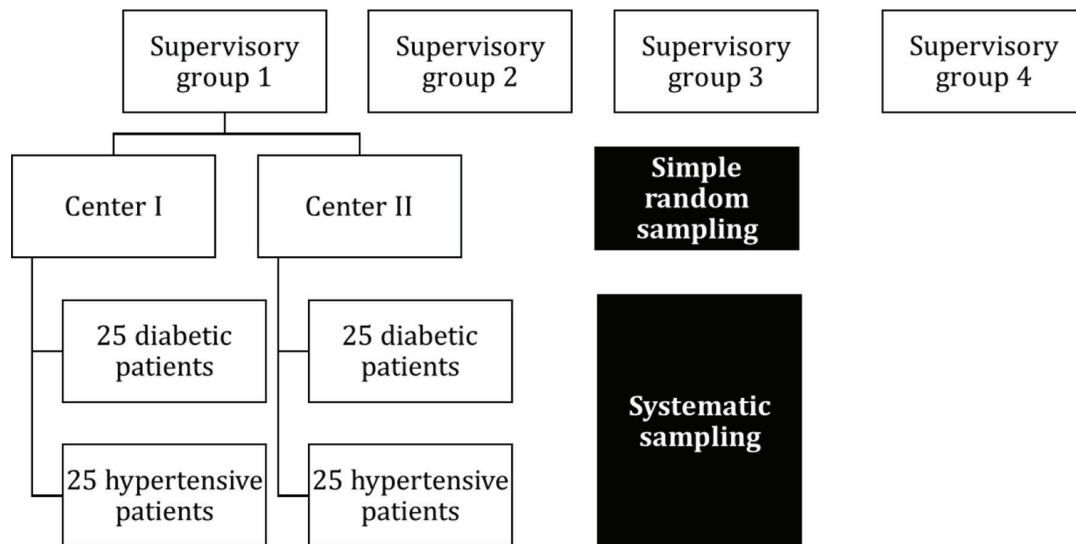
Figure 1: Sampling techniques applied in the study.

and percentages for qualitative variables, and means and standard deviations for quantitative variables. Quantitative variables were compared using independent sample t test for two groups and ANOVA test for more than two categories. Statistical significance was considered at P-value <0.05.

Results

Table 1 describes the demographic characteristics of the participants, it shows that there is almost equal percentage of male (51.7%) and female patients (48.3%). The majority of them (75.5%) were in the age group 40+ years and a higher percentage (79.2%) is married. The patients who have university or above qualifications constituted almost one quarter of patients (23.7%) and almost one half (50.3%) are employed with an overwhelming majorities of them (91%) in civilian jobs. Regarding the monthly income, it was found that 43.7% of the patients had income less than 5000 SR.

Patients with diabetes formed 41.8% of the respondents and 16.3% are hypertensive, while the rest (42%) were both diabetic and hypertensive.

The analysis revealed that the mean duration since diagnosis of the disease accounted for 10 ± 7.6 years, and the mean duration of attending the same center for care was 7.1 ± 6.5 years. Slightly more than one quarter of the patients (27.3%) were attending other health institute rather than the current PHC center.

Collectively higher percentage of the patients (93.9%) agreed that getting appointment directly than those who agree to get it by phone (44%), and only one half of the patients (55.6%) indicated that they could assign the physician who will care for them and almost equal percentage (57.8%) agreed that

they are consistently cared by the same physician. Meanwhile, it was observed that almost two-thirds of the patients (64.7%) agree that the time lag for appointment is suitable. However, it was observed that the majority of the respondents perceive that they have to wait for too long time before being examined by the physician. On the other hand, it was noted that a total of 68.3% of the patients agree that the working hours of the centers are suitable for them. Nevertheless, slightly more than one half of them (59.2%) agree that the waiting areas are suitable.

The overwhelming majorities of the patients (97.1%) agreed that their physicians deal respectfully with them and a slightly lower percentage (95.8%) indicated that they respect their privacy. Similarly, the majority indicated that their physicians let them express in details their condition (90.4%) while listening carefully to all their stating (92.7%), and they avoid exposure of the patients to unnecessary stress (93.7%). In addition, they describe the nature of health condition and plan of treatment (93.8%), the requested laboratory investigations (93.4%) and the importance of referral if needed (87.3%). Also, they help patients to care about their health (95.7%) and give them adequate time in the clinic (84.1%). On the other side, it was noted that a relatively lower percentage of the patients (70.8%) agree that their physicians know well the details of their condition and an overall 87.4% of the patients perceive that their physicians are efficient.

About two-thirds of the patients (61%) pointed to the suitability of the waiting time in the lab and a slightly higher percentage (69.6%) expressed that the lab technician describe to them the maneuvers that will be conducted before starting. On the other hand, only 45.6% of the patients reported that they receive the results of the lab investigation within acceptable duration. Nevertheless the overwhelming majorities of the patients perceive that the lab technicians are dealing with them respectfully.

Table 1: Demographic characteristics of the study group (*n* = 400)

Characteristics	No.	%
Gender		
Males	207	51.7
Females	193	48.3
Age		
<20 years	18	4.5
20–<40 years	80	20.0
40–<60 years	189	47.2
60+ years	113	28.3
Marital status		
Single	23	5.8
Married	317	79.2
Widowed	30	7.5
Divorced	30	7.5
Educational level		
Illiterate	82	20.4
Read and write	53	13.3
Intermediate	41	10.3
Secondary	69	17.3
Diploma	60	15.0
University/postgraduate	95	23.7
Occupational status		
Jobless	199	49.7
Has a job	201	50.3
Civilian job	183	91.0
Military job	18	9.0
Monthly income of the family		
<5000 SR	175	43.7
5000–<10,000 SR	133	33.3
10,000+ SR	80	20.0
Missing	12	3.0

Almost two-thirds of the patients (64.1%) addressed that the waiting places in the pharmacy are suitable and a higher percentage (75.1%) reported that the waiting time till receiving their prescribed drugs is suitable, nevertheless, a much lower proportion of the patients (47.7%) expressed that all the prescribed drugs are available. On the other side, it was noted that the majorities of the patients (93.5%) indicated that the pharmacists describe to them how to administer the prescribed drugs, and (96%) perceive that the pharmacists are respecting them.

Although about one-half of the patients (53%) indicated that the waiting places of the X-ray departments are suitable and an equal percentage (55%) reported that the waiting time till they got X-ray services is suitable, a higher percentage (68.4%) expressed that X-ray technicians describe to the patients what is going to be done before starting and a much

higher proportion expressed that the X-ray technicians are respecting their privacy.

More than one-half of the patients (59.3%) indicated that the clinics in the PHC centers are properly equipped, and the majorities of the patients (92.9%) pointed that the workers are usually good looking in addition to 87.3% who perceive that the receptionist are dealing with the patients with good manner. However, it was remarked that only (39.6%) of the patients agree that the centers are clean and a lower percentage (28.2%) agree that the WCs are clean. Also, it was found that only (23.6%) of the patients agree that there are suitable prayer places in the centers. On the same line, it was observed that although (58.1%) of the respondents indicated that the center is easily accessible, only (32.2%) agree that there are clear guidance signs to help reaching the center and only (36.9%) who expressed that there are suitable car parking.

More than three quarters of them (78.2%) agree that they would provide that advice to their family members. In order to summarize and facilitate comparison of the level of satisfaction of the patients about the services provided through the PHC centers, their response was scored from 5 to strongly agree to 1 for strongly disagree, putting into consideration the opposite for the reversed questions. Figure 2 shows that the overall satisfaction score accounted for 3.7/5 which approximate to 74%, and the highest scores were reported for their satisfaction about nurses' and physicians' performance and behavior. On the other side, it was found that the lowest level of satisfaction was recorded for the PHC centers in general (resources, accessibility, etc.).

Table 2 shows that there are no significant differences among patients regarding their level of satisfaction about different domains representing services provided to chronic disease patients according to their gender, marital status and occupational status $P > 0.05$. However, considering the age groups, it was remarked that the lowest satisfaction scores were recorded among patients aged 20–<40 years towards easiness to reach the center, lab services, X-ray services and the PHC center in general, and these differences are statistically significant $P < 0.05$. On the same line, it was noted that the highly educated patients with university or higher degrees were significantly the least to be satisfied about easiness of access to the center and the pharmacy services $P < 0.05$. Also, it was observed that the highest the monthly income the less satisfaction level about easiness of access to the center, continuity of care, lab services, pharmacy services, PHC center in general and their overall satisfaction, and this observed inversed level of satisfaction is statistically significant $P < 0.05$.

Figure 3 shows that the longer the duration since diagnosis, the less satisfied the patients are with chronic diseases. The Pearson correlation coefficient indicated that this relationship is statistically significant $P < 0.05$ with ($r = -0.298$). Meanwhile, it was evident from the regression model of the best fit line that for each increase in the duration since diagnosis by a year, there is drop in the satisfaction score by an average of 0.02.
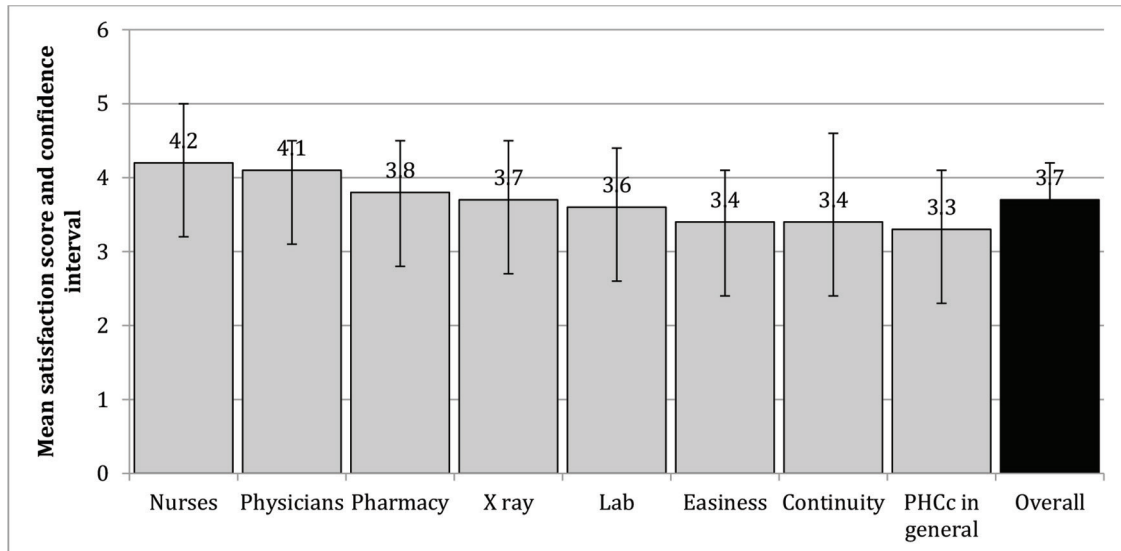
Figure 2: Mean and confidence interval for the satisfaction scores of the patients about different elements of primary health care services

From figure 4, it can be seen that there is significantly inverse correlation between the duration of regular visits to the health center and the overall satisfaction. The Pearson correlation coefficient revealed that ($r = -0.345$). Meanwhile, from the regression model of the best fit line it was found that for each increase in the duration since diagnosis by a year, there is drop in the satisfaction score by an average of 0.03.

From Table 3, it was evident that both duration of regular visits to the center and monthly income are significant predictors of the level of satisfaction about services $P < 0.05$, and these relationships are inversed, i.e., the higher the income and the longer is the duration of regular visits the lower is the level of satisfaction. Meanwhile, it was evident that the combination of the two variables describes about 13.2% of changes in the overall level of satisfaction.

Discussion

Determinants of patient satisfaction are usually examined in relation to the expectations of the patients, and demographic and psychosocial variables in addition to the multidimensional components of satisfaction correlated to the delivery of care.[18] The current study focuses on the demographic characteristics as determinants of chronic patients' satisfaction about health care they are receiving in the PHC centers; the idea of this concern is driven from the concept that in most patients' satisfaction analysis, characteristics of patients are important variables to evaluate satisfaction. The main variables included in these types of studies are: age, sex, educational level, income, and marital status.[19]

The overall level of satisfaction reported in the current study was found to be quite high (3.7/5 which approximates 74%).

Although, an almost similar result was detected in Trinidad, however, the authors were more conservative about these findings and they reported that there were discrepancies between the actual feelings of the respondents which were expressed verbally to the interviewer and the actual responses in the questionnaire.[20] Therefore, it was ascertained that examining the differences across all groups could be more profitable than focusing on the overall level of satisfaction.

Patients with relatively high monthly income have usually higher expectations for care and feeling of personal rights, therefore they are more likely to feel dissatisfaction for sub optimal care. Moreover, wealthier patients have greater sense of control on their circumstances as they have the ability to seek health care elsewhere if they are not satisfied. Accordingly, and in contrast to patients with lower income, affluent patients are more likely to be dissatisfied and more likely to express their satisfaction.[21] Studies showed that patients who cannot afford other types of health care are reluctant to express their complaints from public care due to the "self-interest bias"; additionally, they are less likely to jeopardize care they receive and may feel that problems would not be resolved even they complain.[18]

Age is a well-known determinant of patient satisfaction index; with older patients scoring more satisfied than younger and middle aged patients.[22] The explanation for this notion was reported in researches which pointed to the increased tendency of health care providers to provide patients centered encounters to older patients; consequently, elderly patients are more satisfied about health care services provided.[23] This claim support our findings which revealed that there were significantly higher satisfaction scores among older than middle aged respondents especially in regards

Table2: Differences in the mean satisfaction scores about services according to demographic characteristics of the patients

Characteristics	Easiness	Continuity	Physician	Lab	Pharmacy	X-ray	Nurse	PHC	Overall
Gender									
Males	3.47	3.44	4.11	3.62	3.83	3.62	4.21	3.35	3.70
Females	3.38	3.34	4.06	3.62	3.84	3.74	4.13	3.22	3.65
P-value	0.164	0.369	0.283	0.986	0.889	0.139	0.307	0.122	0.380
Age									
<20 years	3.59	3.44	3.89	3.56	3.73	4.12	4.11	3.47	3.75
20–<40 years	3.18	3.12	4.00	3.45	3.72	3.58	4.03	3.08	3.57
40–<60 years	3.51	3.45	4.16	3.77	3.93	3.63	4.25	3.39	3.74
60+ years	3.46	3.48	4.05	3.51	3.78	3.74	4.16	3.24	3.63
P-value	0.002	0.136	0.064	0.006	0.055	0.040	0.218	0.027	0.101
Marital status									
Single	3.39	3.13	4.06	3.53	3.90	3.80	4.04	3.04	3.58
Married	3.39	3.36	4.09	3.61	3.79	3.64	4.17	3.30	3.67
Widowed	3.68	3.78	4.02	3.58	3.96	3.78	4.37	3.29	3.75
Divorced	3.65	3.53	4.14	3.87	4.13	3.83	4.10	3.39	3.78
P-value	0.058	0.155	0.788	0.349	0.058	0.412	0.470	0.451	0.539
Educational level									
Illiterate	3.55	3.60	4.11	3.66	3.88	3.67	4.33	3.24	3.68
Read and write	3.32	3.50	4.13	3.69	3.75	3.64	4.06	3.06	3.61
Intermediate	3.76	3.63	4.15	3.85	4.12	3.75	4.32	3.50	3.86
Secondary	3.48	3.38	4.07	3.73	4.00	3.82	4.14	3.42	3.73
Diploma	3.34	3.22	4.02	3.49	3.78	3.69	4.13	3.29	3.67
University/post	3.29	3.17	4.04	3.46	3.66	3.55	4.08	3.29	3.61
P-value	0.005	0.096	0.605	0.062	0.002	0.418	0.238	0.127	0.329
Occupational status									
Jobless	3.38	3.31	4.05	3.57	3.82	3.66	4.15	3.30	3.67
Has a job	3.48	3.47	4.11	3.68	3.86	3.69	4.19	3.28	3.68
P-value	0.171	0.177	0.180	0.172	0.583	0.737	0.652	0.847	0.915
Monthly income of the family									
<5000 SR	3.57	3.60	4.07	3.71	3.98	3.74	4.21	3.44	3.76
5000–<10,000 SR	3.41	3.39	4.11	3.62	3.75	3.65	4.17	3.18	3.63
10,000 + SR	3.12	2.83	3.99	3.35	3.57	3.49	4.05	3.08	3.53
P-value	<0.001	<0.001	0.157	0.003	<0.001	0.072	0.361	0.001	0.007

with their perception about easiness of getting care, services provided through laboratories and X-ray departments in addition to the PHC center as a whole. These findings comes also in accordance with what was found in a study conducted in USA which revealed that increased satisfaction was associated with visits by older males, hypertensive and asthmatic patients.[24]

People with educational level of university or postgraduate qualifications represented about one quarter of the study population (23.7%) and the rest have lower educational level; even though the public health services including PHC in Saudi Arabia are accessible for all the population. In a study conducted in Costa Rica (2006), it was found that public PHC centers are used mostly by the lower class. People with higher educational level usually have better paid jobs and can afford private health service. It has also been observed a tendency of a lack of assistance of the upper class to the public health services, due to the idea that this kind of services are for low income class and therefore prefer to assist to hospitals.[25] In this respect, the current study demonstrated that patients with higher educational levels (University and postgraduate degrees) scored the lowest satisfaction points in all aspects, however, only easiness and X-ray services which showed statistical significance.

The study showed that the longer is the duration of the chronic disease the lesser is the level of satisfaction of the
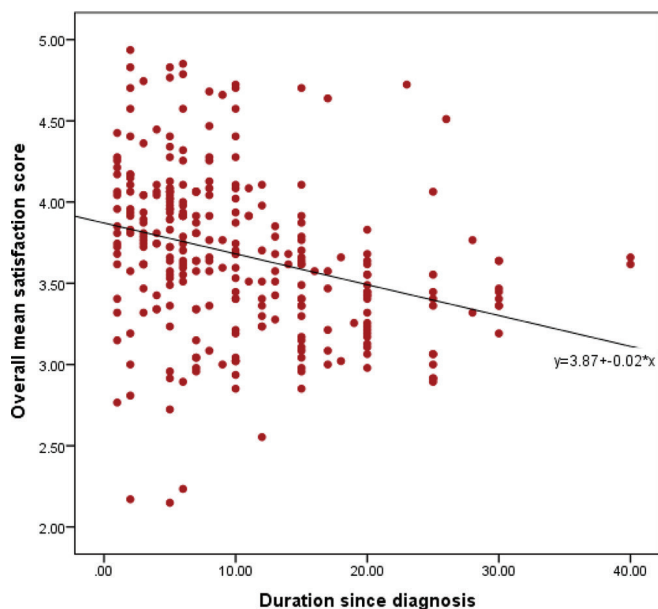
Figure 3: Correlation between duration since diagnosis and overall satisfaction score

Figure 4: Correlation between duration of regular visits to the center and overall satisfaction score

patients about the services provided through the PHC center. The explanation of this inverse correlation can be manifold; for example at the clinical level, with increased duration of the chronic disease there is growing possibilities for occurrence of complications which have negative implications on perception of the patients about their health[26] which is reflected on their view about quality of their life and eventually on their satisfaction about many aspects in their life. According to this disclosure it was not astonishing to reveal this inverse correlation.

Conclusion

In conclusion, the overall level of satisfaction was considerably high, with the highest scores for their satisfaction
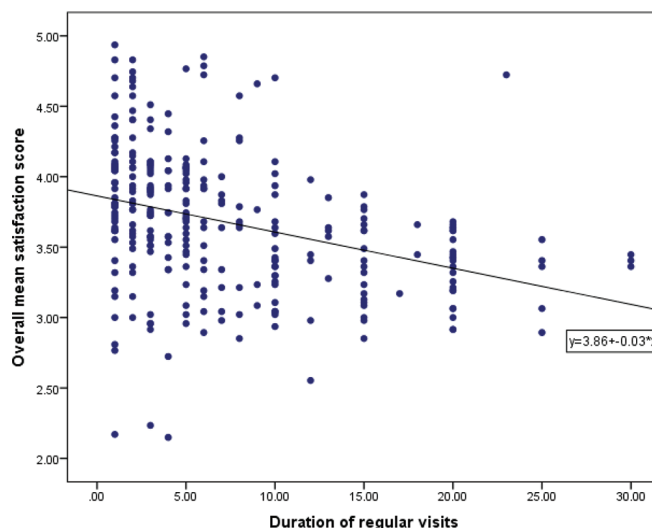
about dealing of nurses and physicians, and the lowest for easiness, continuity, and lab services. Among other socio-demographic characteristics influencing level of satisfaction; monthly income, educational level, and age showed statistical significance. From which it can be concluded that the PHC centers in Jeddah city are providing satisfactory level of care from perspectives of the patients with chronic diseases.

Acknowledgments

Table 3: Predictors of the overall satisfaction about the services provided to the patients with chronic diseases in PHC centers

Model		Unstandardized Coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.993	0.073		54.940	0.000
	Duration since diagnosis	−0.003	0.006	−0.051	−0.519	0.604
	Duration of regular visits	−0020	0.007	−0.276	−2.818	0.005
	Monthly income	−0.085	0.035	−0.135	−2.395	0.017
2	(Constant)	3.985	0.071		56.335	0.000
	Duration of regular visits	−0.023	0.004	−0.317	−5.629	0.000
	Monthly income	−0.086	0.035	−0.137	−2.433	0.016

$r^2 = 0.132$, variable excluded from the last model (duration since diagnosis).

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