

IJMA

INTERNATIONAL JOURNAL OF MEDICAL ARTS



Volume 3, Issue 4 [Autumn (October-December) 2021]



<http://ijma.journals.ekb.eg/>

Print ISSN: 2636-4174

Online ISSN: 2682-3780

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- ✓ International Journal of Medical Arts is the Official Journal of the Damietta Faculty of Medicine, Al-Azhar University, Egypt
- ✓ It is an International, Open Access, Double-blind, Peer-reviewed Journal
- ✓ Published four times a year
- ✓ The First Issue was published in July 2019
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Original Article

Subjective Evaluation of Health Care Services Provided at Outpatient Clinics of Different Levels of Health Care in Cairo

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Submission date: September 26, 2021; Acceptance date: November 5, 2021

DOI: [10.21608/IJMA.2021.98040.1373](https://doi.org/10.21608/IJMA.2021.98040.1373)



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ABSTRACT

Background: Assessment of client's satisfaction about healthcare services is an important tool for improvement of provided healthcare services as it enables the administrators of healthcare facilities to identify areas of least satisfaction from client's point of view that can help to make services more effective and efficient.

Aim of the work: To assess and compare the degree of patient satisfaction at different levels of health care in Cairo, Egypt.

Methods: An analytical cross-sectional study was carried out. The study included 1131 clients to assess their satisfaction about the received healthcare services after completing their visits and before discharge from the facility. Data was collected through patient interview questionnaire which asked about ten domains of patient satisfaction.

Results: Of studied participants, 47.7% were in a state of acceptance about overall received medical services while 40.1% were not satisfied. 4.7% were not satisfied at all, 7.4% were satisfied and only 1% was very satisfied about overall healthcare services at outpatient clinics in the study sites. The mean satisfaction score was statistically significant higher among clients attending primary level regarding accessibility, reception service, environment of unit, doctor performance, nurse performance, pharmacy services, patient rights and overall satisfaction. On the other hand mean satisfaction score was statistically significant higher among clients attending tertiary level in comparison to secondary and primary level regarding effectiveness of health care.

Conclusion: The majority of participants in our study were not satisfied with overall services in the study sites. Nurse performance, patient rights and continuity of services were the domains of least satisfaction.

Keywords: Patient satisfaction; Quality of healthcare; Levels of healthcare.

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Citation: Salama EM, Imam ME, Ammar MA, Mohamed TS. Subjective Evaluation of Health Care Services Provided at Outpatient Clinics of Different Levels of Health Care in Cairo. IJMA 2021; 3 [4] October-December: 1891-1899 [DOI: [10.21608/IJMA.2021.98040.1373](https://doi.org/10.21608/IJMA.2021.98040.1373)].

* Main subject and any subcategories have been classified according to the research topic

INTRODUCTION

Quality is a compulsory requirement for health care services, positioning client's satisfaction as an important element within that definition. Patient satisfaction is a major domain of quality and care and considered an objective to be reached. Satisfaction assessment is an instrument for planning and administration, in addition to playing an important role in the communication between service provider and the user, since satisfaction is considered a judgment of the quality of provided care. Quality evaluation through measurement of users' satisfaction is part of the hospitals accrediting process, which is under implementation within the health services [1].

Findings in the developed countries about quality of healthcare services have influenced the developing countries to assess the quality of their healthcare delivery systems. Outcomes have received special prominence as a measure of quality healthcare. Quality assessment studies over the past years usually measure one of three types of outcomes thus patient's satisfaction, costs, and medical outcomes [2].

Patient's satisfaction has gained a great importance nowadays specially in developing countries. It is both a quality component and service quality indicator. Patient satisfaction has been emphasized as the latest trend in most studies manipulating healthcare delivery assessment. It has been realized, that in order to achieve a good competitive advantage in the field of healthcare, the perception of patients for quality need to be deeply evaluated [3].

Patients' perceptions with received health care services are important in bridging the gap between the actual health care provided and the care that should have been provided. Therefore, it is important to analyze the patients' perceptions of satisfaction with the provided health care services. Patients' satisfaction with health care services is determined by patients expectations regarding the healthcare they are about to receive and their perceptions of past healthcare. So, assessment of patients' satisfaction level is now one of WHO indicators to improve the quality of provided healthcare services [4]. Patient satisfaction is an attitude towards the overall experience of received health care service. Satisfaction comprises both emotional and cognitive facets and relates to previous expectations and experiences [5].

The Ministry of Health [MOH] in Egypt has been concerned with quality of health care services over the past years, which has a strong effect on patient satisfaction, but the improvements in the quality of care has been slow, because quality improvement actions have received inadequate priority. However, there have been many researches in quality of healthcare service, which has patient

satisfaction as an indicator of quality assurance in the Egyptian health care facilities. The results of these researches mentioned that Poor quality of healthcare and low level of client satisfaction resulted in loss of patients' lives, revenue, material resources, time, staff, trust and respect. All of which contribute to lowered effectiveness and efficiency in the Egyptian healthcare system [6].

In this research a comparative approach with a focus on institutional facilities [University hospital, general hospital and PHC center] in Egypt is used. The novelty of our study is to assess patient's satisfaction within the different levels of healthcare in Egypt.

This study also has answered a frequently asked question; why patients in Egypt attending tertiary hospitals surpassing the primary healthcare center? And the study revealed that the participants found tertiary hospitals more effective than primary health care centres.

AIM OF THE WORK

Identification of areas of least satisfaction in healthcare services will enable the healthcare administrators to reconsider the introduced services and this will be reflected on patient compliance to preventive and curative measures which described to improve their illness.

PATIENTS AND METHODS

Study setting, design and participants

In our study, participants were included from outpatient clinics [Gynecology, Internal medicine and pediatrics clinics] of three health care facilities representing the three health care levels in Cairo governorate:

- The urban primary health care centre of Alhy Alsades, Madint Nasr representing the primary level of health care.
- Dar Al-Salam general hospital representing the secondary health care level.
- Al-Husseini university hospital representing the tertiary health care level.

Inclusion criteria included Clients attending the previous mentioned clinics after visit and before leaving the health care facility.

Exclusion criteria included [Clients attending pediatrics clinic for immunization services, unwilling to participate in the study, the mental conditions makes it impossible to perform interview...etc.]

Sampling

Sample Technique: Type of sample is a purposive sample technique to choose the study sites.

- Al-Hussein university hospital was chosen to represent the tertiary health care level as it is Al-Azhar university hospital and this will facilitate the administrative approvals.
- Dar Al-salam general hospital was chosen as the researcher can gain administrative approval from hospital director.
- PHC Centre of Alhay Alsades, Madint Naser was chosen due to presence of administrative coordination between the community department of AL-Azhar faculty of medicine in Cairo and the PHC center.

A systematic random sampling methodology was used on participants. In each healthcare facility we selected a client randomly [1, 4, 7, and 10...etc.]. All attendants who agree with the inclusion requirements were included before the target sample size is met. The sample size was distributed similarly to the three healthcare facilities.

Sample size: The average attendance at outpatient clinics in Al-Hussein university hospital was taken to represent the population size, which were 24039 cases during 2018. The total calculated sample size was 378 case, using Epi info statistical program at 95% CI and 5% margin of error. We have taken 378 cases from Al Hussein university hospital as follow; 30% from GYN clinic, 32% from internal medicine clinic and 38% from pediatric clinic. We have taken 378 client from Dar el- Salam general hospital were taken as follow; 31% from GYN clinic, 25% from internal medicine clinic and 44% from pediatrics clinic. From the PHC center we have taken 378 cases as follow; 27% from GYN clinic, 37.6% from internal medicine clinic and 35.4% from pediatrics clinic.

Study variables

- **Dependent variable:** Patient satisfaction.
- **Independent variables:** Attendance, patient complaint and Socio-demographic criteria including age, sex, residence, occupation, education level, income and crowding index.

Survey tools of data collection

Data were collected by using a pre tested, coded, researcher administered, modified questionnaire which has been finalized after reviewing literature review. This

questionnaire has been tested by pilot study and was revised by the supervisors. This tool consisted of two parts:

The first part

It is intended to collect socio-demographic data related to the study subjects; gender, age, residence, education, occupation, income, family number, room number, in addition to complaint, number of the previous visits to clinics.

The second part

It is intended to assess patient satisfaction and included nine domains in addition to overall satisfaction [tenth domain] as follow:

- **First domain:** Accessibility of health care services and assessed by ten items.
- **Second domain:** Reception services and assessed by three items.
- **Third domain:** Environment of unit and assessed by fourteen items.
- **Fourth domain:** Doctor performance and assessed by fifteen items.
- **Fifth domain:** Nurse performance which tackled with three items.
- **Sixth domain:** Pharmacy services which assessed by four items.
- **Seventh domain:** Effectiveness of received health care service that had been assessed by three items.
- **Eighth domain:** Continuity of health care service and assessed by three questions.
- **Ninth domain:** Patient rights and assessed by two items.
- **Tenth domain:** Overall satisfaction and assessed by one question.

Responses were measured on a five points rating scale ranged from unsatisfied at all, unsatisfied, accepted, satisfied, and strongly satisfied.

Scoring system

Responses of patients to the questions were evaluated on a five-point Likert scale, including unsatisfied at all [1score], unsatisfied [2 scores], accepted [3 scores], satisfied [4 scores] and very satisfied [5 score].

The level of patient satisfaction with the whole domain was evaluated as follows:

- The total score less than 50% is classified as [unsatisfied].
- The total score $\geq 50\%$ is classified as [satisfied].

Ethical approval

It was obtained from Institutional Review Board at Faculty of Medicine for boys, Al-Azhar University, Cairo. An informed consent from anonymous participants was added as an initial page of the questionnaire before their interview started with emphasis on full voluntary participation and withdrawal at any time without justification.

Statistical analysis

It was done using the statistical package for the social sciences [SPSS, version 23; SPSS Inc., Chicago, Illinois, USA] [using an IBM personal computer]. Percentage, Frequency, the mean and the standard deviation were used as a descriptive statistics. For groups comparisons, chi-square and t-tests were used for qualitative and quantitative variables respectively. ANOVA with post hoc LSD was used for comparison between more than two quantitative groups via Kolmogorov–Smirnov test [K–S test] and Levene's test for variance equality.

RESULTS

Socio-demographic characteristics of study participants and healthcare levels

The study included 1131 participants, 77.6% of them were female. As regards age groups, the majority [56.3%] of the studied samples was in age group from 20 to 40 years and the mean age of all clients was 33.9 ± 15.6 year. As regards residence, the percentage of clients were living in urban areas was 47.57% compared to 52.43% were living in rural and slum areas. As regard educational level, the majority of participants were having university education 61.5% while the minorities have had a basic education 7.5% and 7.3% for illiterate. As regards occupation, the participants not working at time of the study representing 66.8% compared to having unskilled jobs 11.6%, skilled jobs 13.8% and professional jobs 1.3%. As regards income most of participants reported income as not enough 54.1% compared to 6.1% who reported it as enough and more and 39.8% who reported it as hardly enough [Table 1].

Table [2] showed that there was statistically significant increased level of healthcare [tertiary level] when age were between 20 to 40 years old. There was statistically significant increase in level of health care [secondary and tertiary level] when residence was rural and slum while there was statistically significant decrease in health care level [primary level] when residence was urban. As regards gender, level of education, occupation and income, there was no statistically significant difference between groups in relation to these items.

Figure [1] shows that percentage of clients of acute complaint at tertiary hospital clinics [67.70%] is more than it at secondary [67.20%] and primary [39.90%] health care facilities.

Satisfaction score of participants in all domains of satisfaction

Figure [2] shows that 47.7% of studied participants were in a state of acceptance about overall received medical services while 40.1% were not satisfied. 4.7% were not satisfied at all, 7.4% were satisfied and only 1% was very satisfied about overall healthcare services at outpatient clinics in the study sites.

Table [3] shows that the accessibility and effectiveness of health care services scored highest satisfaction percent 75.2% and 66.8% in order. The domains showing least satisfaction percent are in order; nurse performance 0.0%, patient rights 4.9% and environment of the unit 7.8%.

Table [4] shows that mean satisfaction score was statistically significant higher among clients attending primary level regarding accessibility, reception service, environment of unit, doctor performance, nurse performance, pharmacy services, patient rights and overall satisfaction. On the other hand mean satisfaction score was statistically significant higher among clients attending tertiary level in comparison to secondary and primary level regarding effectiveness of health care.

Post Hoc test [Turkey's test] shows that no statistically significant difference between mean satisfaction score of clients attending primary and tertiary level regarding nurse performance [$P=0.171$]. Concerning effectiveness of health care services and patient rights, Turkey's test shows no significant statistically difference between clients at secondary and tertiary levels [$P=0.130$], [$P=0.548$].

Table [1]: Socio demographic characteristics of the studied population

Variables		N [=1131]	%
Gender	Male	253	22.4
	Female	878	77.6
Age group	<20	159	14.1
	20-	637	56.3
	40-	229	20.2
	60+	106	9.4
	Range	19-68	
	Mean±SD	33.978±15.688	
Residency	Urban	538	47.57%
	Rural and slum	593	52.43%
Levels of education	Illiterate	82	7.3
	Read and write	120	10.6
	Basic education	85	7.5
	Secondary	148	13.1
	University	696	61.5
Occupation	Not working	755	66.8
	Un skilled job	131	11.6
	Skilled job	156	13.8
	Office work	74	6.5
	Professional work	15	1.3
Income	Not enough	612	54.1
	Hardly enough	450	39.8
	Enough and more	69	6.1
Crowding Index	>1	935	82.67%
	≤1	196	17.33%

Table [2]: Socio demographic characteristics and health care levels

		Levels of health care						Total		Chi-square	
		1ry level group		2ry level group		Tertiary level group		No.	%	X ²	P
		No.	%	No.	%	No.	%				
		[378]		[375]		[378]	[1131]				
Gender	Male	81	21.4%	84	22.4%	88	23.3%	253	22.4%	0.374	0.83
	Female	297	78.6%	291	77.6%	290	76.7%	878	77.6%		
Age group	<20	18	4.8%	66	17.6%	75	19.8%	159	14.1%	139.66	<0.001*
	20-	168	44.4%	231	61.6%	238	63%	637	56.3%		
	40-	135	35.7%	53	14.1%	41	10.8%	229	20.2%		
	60+	57	15.1%	25	6.7%	24	6.3%	106	9.4%		
Residency	Rural and slum	10	2.64%	300	80%	283	74.8%	593	52.43%	751.89	<0.001*
	Urban	368	97.3%	75	20%	95	25.1%	538	47.6%		
Level of education	Illiterate	30	7.9%	25	6.7%	27	7.1%	82	7.3%	1.945	0.982
	Read and write	42	11.1%	39	10.4%	39	10.3%	120	10.6%		
	Basic school	32	8.5%	27	7.2%	26	6.8%	85	7.50%		
	Secondary education	51	13.5%	48	12.8%	49	13%	148	13.1%		
	University education	223	59%	236	62.9	237	62.7	696	61.5		
Occupation	Not working	245	64.8%	250	66.7%	260	68.8%	755	66.8%	10.42	0.2366
	Non skilled job	49	13%	42	11.2%	40	10.6%	131	11.6%		
	Skilled job	62	16.4%	48	12.8%	46	12.2%	156	13.8%		
	Office work	21	5.6%	27	7.2%	26	6.9%	74	6.50%		
	Professional work	1	0.3%	8	2.1%	6	1.6%	15	1.30%		
Income	Not enough	210	55.6%	194	51.7%	208	55%	612	54.1%	6.96	0.138
	Hardly enough	150	39.7%	148	39.5%	152	40.2%	450	39.8%		
	Enough and more	18	4.8%	33	8.8%	18	4.8%	69	6.1%		
Crowding Index	>1	285	75.4%	370	98.6%	280	74%	935	82.7%	167.48	<0.001*
	≤1	93	24.6%	5	1.4%	98	26%	196	17.3%		

Table [3]: Level of satisfaction of all studied population with different satisfaction domains

Domains of satisfaction	Satisfaction				Mean score \pm SD
	Not satisfied		Satisfied		
	No.	%	No.	%	
Accessibility of health care service	281	24.8%	850	75.2%	2.86 \pm .55
Reception Service	665	58.8%	466	41.2%	2.41 \pm .87
Environment of unit	1043	92.2%	88	7.8%	2.06 \pm .36
Doctor Performance	739	65.3%	392	34.7%	2.41 \pm .34
Nurse Performance	1131	100.0%	0	0.0%	1.27 \pm .43
Pharmacy Service	862	76.2%	269	23.8%	1.60 \pm .70
Effectiveness of healthcare services	376	33.2%	755	66.8%	2.64 \pm .80
Patient rights	1076	95.1%	55	4.9%	1.53 \pm .45
Overall satisfaction	903	79.8%	228	20.2%	2.19 \pm .31

Table [4]: Mean satisfaction score in the studied groups in relation to domains of satisfaction

Domains of satisfaction	1ry level	2ry level	Tertiary level	ANOVA		Tukey's test		
	Mean \pm SD	Mean \pm SD	Mean \pm SD	F	P-value	P1	P2	P3
Accessibility of health care service	3.23 \pm 0.34	2.79 \pm 0.52	2.56 \pm 0.53	189.69	0.000	0.000	0.000	0.000
Reception Service	3.41 \pm 0.34	1.76 \pm 0.31	2.04 \pm 0.71	1195.82	0.000	0.000	0.000	0.000
Environment of unit	2.33 \pm 0.15	1.86 \pm 0.29	1.96 \pm 0.38	264.88	0.000	0.000	0.000	0.000
Doctor Performance	2.54 \pm 0.41	2.28 \pm 0.29	2.39 \pm 0.21	63.26	0.000	0.000	0.000	0.000
Nurse Performance	1.77 \pm 0.39	1.00 \pm 0.00	1.03 \pm 0.14	1225.34	0.000	0.000	0.171	0.000
Pharmacy Service	2.51 \pm 0.22	1.00 \pm 0.00	1.26 \pm 0.31	4985.37	0.000	0.000	0.000	0.000
Effectiveness of healthcare	2.80 \pm 0.53	2.18 \pm 0.95	2.91 \pm 0.65	108.35	0.000	0.000	0.000	0.130
Patient rights	1.68 \pm 0.38	1.24 \pm 0.43	1.65 \pm 0.38	142.04	0.000	0.000	0.000	0.548
Overall satisfaction	2.55 \pm 0.15	1.95 \pm 0.15	2.06 \pm 0.17	1497.12	0.000	0.000	0.000	0.000

*P1: comparison between 1ry level and 2ry level; *P2: comparison between 1ry level and tertiary level; *P3: comparison between 2ry level and tertiary level.

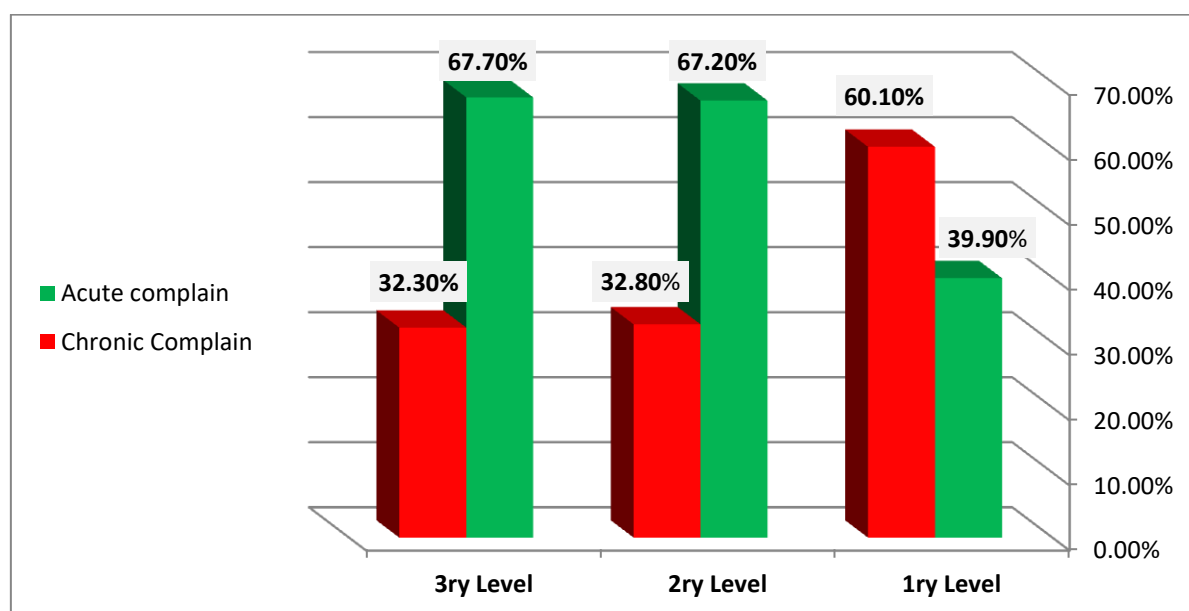


Figure [1]: Frequency distribution of the studied groups according to their complaint and health care levels

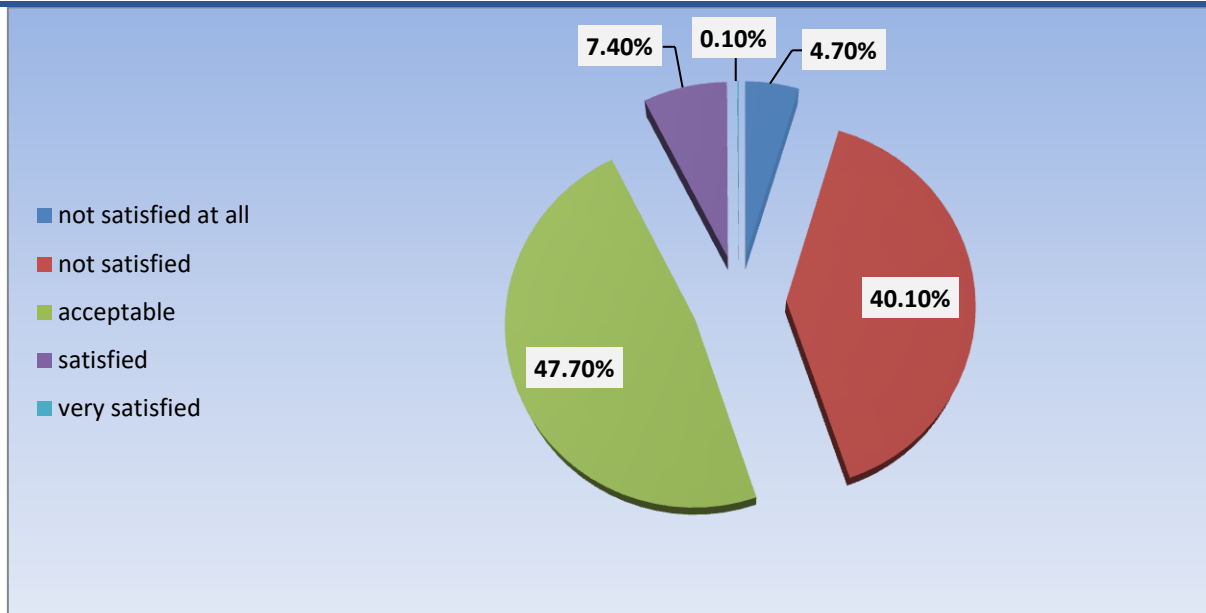


Figure [2]: Level of overall satisfaction among the studied participants about overall received medical services

DISCUSSION

Socio-demographic characteristics of study participants and healthcare levels

Patient satisfaction is the real witness to the efficiency of hospital administration. As a hospital provide medical services to all the members of the society, the expectations of clients differ from one person to another because everyone carries a particular set of thoughts, feelings and needs [7].

Our study revealed that the majority of those using health care facilities [77.6%] were females. This result was expected due to the fact that outpatient hours at the clinics were in the morning and early afternoon, when most of the men were at work. Also, females are frequent bringing their children's to pediatrics clinics than men. This finding is consistent with Gadallah *et al.* [8] who measured patient satisfaction with primary health care services in two districts in Egypt and reported that [70.6%] of their sample were females in Belbis district in Sharkia governorate and [60.4%] of it were females in Abu Korkas district in Minya governorate.

Our results showed that the majority of the studied participants were in the age group 20-40 years [56.3%] and the mean age of all clients was 33.9 ± 15.6 year. These findings are consistent with Bougmiza *et al.* [9] who measured patient satisfaction about introduced healthcare services at Tunisian hospital showed that majority of clients age was 33.4 ± 7.5 years. Our results is against a study conducted by Damghi *et al.* [10] who measured patients' satisfaction with primary health care services in Qatar and reported that the

great majority of the studied population were of old age 55.6 ± 7.6 years.

Our results showed that the majority of the studied population was having university education 61.5% while the minorities have had a basic education 7.5% and 7.3% for illiterate. These results may be due to as we considered clients having high institute as a university education and because the primary healthcare center is an urban one. These results are not aligned with a study conducted by Hegazy *et al.* [11] who measured patient satisfaction about primary health care services at Menoufia Governorate in Egypt, as most patients were illiterate 55.6%, as the study included rural primary healthcare centers.

Our results showed that the majority of clients were not working 66.8% as we considered housewives females as not working as they have no money making work.

These results are not in accordance with a study conducted in university hospitals in Egypt about patient satisfaction with nursing care by Zahr *et al.* [12] which revealed that most participants 55% were having jobs.

This study also revealed that most of studied clients 54.1% were having not enough income and 39.8% reported hardly enough income, most of them [82.67%] with crowding index more than one [CI >1], most of them [64.3%] were frequent attenders and majority [58.3%] were having acute complaint.

Such findings [not enough income, CI >1 and frequent attenders] were in agreement with a cross-sectional study by Deriba *et al.* [13] which revealed that most of the studied population [82%] were having sufficient income, most of

them were of low social class [55%], most of them were frequent attenders to the health care facilities [81%].

Regarding the frequency distribution of the studied groups according to their socio demographic characteristics and health care levels, our results revealed that there was statistically significant increase level of health care [tertiary level] when age were between 20 to 40 years old for clients with first visit and acute complaint.

Such findings were in agreement with studies by Goben *et al.* [14] study indicated that large numbers of patients with minor ailments visited the tertiary hospital leading to overload in comparison with the secondary level hospitals and the study recommended a proper referral system in operation in public hospitals, so that the patient load is proportionally distributed and managed well at the primary, secondary, and tertiary levels.

A recent study by Kim-soon *et al.* [15] indicated that in Libya, tertiary hospitals face ever-increasing outpatient volumes that lead to physicians to be asked to work long hours increasing risk factor for inappropriate prescribing.

A cross-sectional descriptive study by Galal and Al-Gamal [16] indicated that families bypass often public primary health care services and overuse outpatient clinics in public hospitals in Egypt.

In explanation of the reasons that rural patients are bypassing the primary health care and seeking tertiary hospitals, a previous study by Louis [17] indicated that many factors influence the service-seeking behavior of rural patients bypassing the primary health care that include their perceptions of the quality of primary health care services, the attitudes of health care workers, opening hours of clinics, community participation, and drug availability as well as the quality of the infrastructures'.

Satisfaction score of participants in all domains of satisfaction

Regarding the level of satisfaction of all studied population with different satisfaction domains, our results indicated that the most satisfaction was about accessibility of health care service [58.5%] and the less satisfaction was about nurse performance [100%]. These results could be interpreted as the research settings were all governmental health services that makes the low cost of admission ticket, the low cost of public transportation and the short distance between residence and health care facilities.

Also these results concerning nurse's performance could be explained by lack of regular professional training programs at health organizations about quality of health care

and the shortage in nursing staff in Egypt.

Regarding the mean satisfaction score in the studied groups in relation to domains of satisfaction, our results indicated that mean satisfaction score was statistically significant higher among clients attending primary level regarding accessibility, reception service, environment of unit, doctor performance, nurse performance, pharmacy services, patient rights and overall satisfaction. On the other hand mean satisfaction score was statistically significant higher among clients attending tertiary level in comparison to secondary and primary level regarding effectiveness of health care.

Such findings were not in agreement with a cross section study conducted to assess patient satisfaction in outpatient healthcare services at secondary level vs. tertiary level by Stefanovska *et al.* [18]. The study included 646 clients from outpatient healthcare services at the secondary and tertiary level during the last two months. Clients were significantly more satisfied in tertiary than in secondary outpatient healthcare services in almost all aspects of assessment related to general settings, physician performance and nurse performance.

A cross sectional study conducted by Saini *et al.* [19] to compare the level of patient satisfaction in the secondary and tertiary outpatient clinics indicated that the overall level of satisfaction was significantly higher in the secondary outpatient clinic and more people were willing to visit it again rather than the tertiary clinic, these results were against our study results in which mean satisfaction score in secondary level group 1.95 ± 0.15 was lower than it in tertiary level group 2.06 ± 0.17 .

CONCLUSION

The majority 79.8% of participants in our study were not satisfied with overall services in the study sites. The only domains passed 50% satisfaction score among the whole participants were the accessibility [75.2%] and effectiveness [66.8%] domains. Although clients [tertiary group] were overall not satisfied with services but they considered it as effective and will repeat their visits and recommend it for relatives. So we recommend:

- Continuous and regular evaluation of patient satisfaction and application of quality control measures should applied at outpatient healthcare facilities.
- Administrators in different healthcare facilities should apply measures to reduce waiting times and to increase work hours and times of work at outpatient clinics.
- Cost of laboratory and radiological investigations in

healthcare facilities should be in accordance with patient's income.

- Clinic pre-booking services and formal referral system between healthcare services should be established to decrease waiting times at out-patient clinics and decrease the load on physicians at clinics.

Financial and Non-financial Relationships and Activities of Interest

None

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