

PATIENT SATISFACTION TOWARDS OUTDOOR MEDICAL AND SURGICAL SERVICES PROVIDED IN A PUBLIC SECTOR TERTIARY CARE TEACHING HOSPITAL OF AN INDUSTRIAL CITY OF PAKISTAN: A CROSS-SECTIONAL STUDY

Shahid Mahmood,¹ Imrana Aslam,² Sariah Mashood³
 Ghazia Qasmi,⁴ Noreen Bokhari,⁵ Ayesha Khalid⁶

ABSTRACT

Background & Objectives: Patient satisfaction is a multidimensional concept that consists of client's perceived needs, their expectations and experience of a health care system. There is no data available on patient satisfaction with outdoor (OPD) medical and surgical health care services in public sector tertiary care hospital of an industrial city of Punjab, Pakistan. This study aimed at measuring patients' satisfaction towards health care facilities provided in OPD of a public sector tertiary care level hospital of Sialkot, Pakistan

Methods: This descriptive, cross-sectional study was undertaken during the month of April-June, 2020 in the medical and surgical OPDs of Allama Iqbal Memorial teaching hospital, Sialkot. Overall, 180 adult patients visiting OPD were randomly selected and interviewed in-person in OPD settings using modified O-PAHC questionnaire. Analysis was based on descriptive characterization of participants, estimating patient's satisfaction score and assessing relationship of socio-demographic factors in relation to summary satisfaction score using multiple linear regression technique.

Results: Of 180 participants, 93 clients were from medical and 87 were from surgical OPD. Most clients were aged 40 years or above, with females constituted 60% of sample. Two-third participants had no formal education. More than fifty percent clients were not satisfied with OPD timings, waiting time for examination, cleanliness in toilets, and surgeons not listening their health issues attentively. Mean satisfaction score was $59\% \pm 6$ (range: 41% -70%). No statistically significant difference was found for mean satisfaction score as regards to age, sex, education status, and frequency of visit.

Conclusion: On average, 59% of the OPD Clients attending medical and surgical departments of this teaching hospital were satisfied from its working. Hospital administration needs to devise strategy to reduce waiting time for consultation, extend OPD timings, with more efforts required to improve physical ambience.

Key words: Patient's satisfaction, Out-patient Department (OPD), Health care system, health service delivery, O-PAHC questionnaire, Hospital, Healthcare

How to Cite: Mahmood S, Aslam I, mashood S, Qasmi G, Bokhari N, Khalid A. Patient satisfaction towards outdoor medical and surgical services provided in a public sector tertiary care teaching hospital of an industrial city of Pakistan: A cross-sectional study. JAIMC 2022;20(1): 22-29

Affiliations:

1. Associate Professor Department of Community Medicine, Allama Iqbal Medical College, Lahore.
2. Senior Demonstrator Department of Community Medicine, Khawaja Safdar Medical College Sialkot
3. House Physician Allama Iqbal memorial Hospital, Sialkot
4. Consultant General Surgeon / Assistant Professor FMH College of Medicine and dentistry / Hijaz Hospital Lahore
5. Department of Community Medicine, Khawaja Safdar Medical College Sialkot
6. Senior Demonstrator Department of Community Medicine, Khawaja Safdar Medical College Sialkot

Correspondence:

Dr Shahid Mahmood, Associate Professor, Department of Community Medicine, Allama Iqbal Medical College, Lahore
 Email: shahidsethi@hotmail.com

Submission Date: 27-12-2021

1st Revision Date: 01-03-2022

Acceptance Date: 30-03-2022

Healthcare provided in hospital settings is an essential service to community and its management and quality is depended on number of factors. These factors range from provision of physical ambience to clients to more complex technical issues such as communication between clients and medical staff or attitudes of medics towards clients. Patient satisfaction is a multidimensional concept that consists of client's perceived needs, their expectations and experience of a health care system.¹ Surveys to assess patient's satisfaction is a tool to provide necessary data to

hospital management and policy makers to understand client's needs, feedback and gaps in service provision and to devise strategies to meet these needs, improve the quality of medical and surgical services for the clients. Patient or client's satisfaction towards medical and surgical out-patient department (OPD) services has been defined diversely by the authors in literature. According to Donabedian's model of quality measurement, it is considered as the reported outcome by the patients, whereas Ahmed et al.² described it as the attitude towards care or aspect of care. On the other hand, Mohan et al.³ stated that patient satisfaction is the patient's emotions, feeling and perception of healthcare services. Overall, patient's satisfaction is the degree of agreement between patient's expectations of ideal care and their perception of real care received.⁴ Measurement of patient's satisfaction is conducted with qualitative and quantitative methods, however, quantitative approach using standardized questionnaires has found to be more accurate way of ascertaining patient's satisfaction.⁵ Number of valid and reliable questionnaires are being used in research, such as patient's satisfaction questionnaire (PSQ-18), SERVQUAL instrument, consumer assessment health plans (CAHPS), yet O-PAHC is an instrument especially designed and validated for low income countries.⁶ Current study used O-PAHC questionnaire, which addresses five domains of OPD health services including physical ambience, waiting time, attitude of medics, client-medic communication, extent of client satisfaction for future visit and to refer friends/ relatives.⁶ Medical OPD services in a studied public sector hospital include general medicine, cardiology, gastroenterology, nephrology related consultation, whereas surgical OPD provides general surgery, orthopedic, urology services. Number of studies examining patient satisfaction in a public owned hospital settings are scarce and there is a need to investigate and provide evidence to hospital administrators and policy managers for improving the quality of OPD healthcare. This study aimed to assess patient's satisfaction towards medical and surgical services of a public sector teaching hospital in Sialkot

using a standardized O-PAHC questionnaire.

METHODS

This descriptive, cross-sectional study was conducted in Out-Patient Department (OPD) settings of a tertiary care teaching hospital located in an industrial city of Punjab, Pakistan. This study aimed to measure the level of client's satisfaction towards medical and surgical services provided in Allama Iqbal Memorial Hospital, Sialkot, which is a 500-bedded teaching hospital. After taking ethical approval from institutional Ethical Board (ERB), a total of 209 clients (patients) aged 18 years and above, both men and women, visiting medical and surgical outdoors were invited for this study and 180 participants completed this study. We used a validated O-PAHC questionnaire,⁶ to undertake in-person exit interviews in OPD settings. O-PAHC instrument encompasses five domains of OPD health services including physical environment, patient registration and waiting time, attitude of medics and support staff, client-medic communication, extent of client satisfaction for future visit and to refer friends/ relatives. Based on these themes, participants were asked 15 questions on a 5-item Likert scale (strongly agree to strongly disagree). These questions covers aspects about OPD timings, waiting time, attitude of medics/ nurses/support staff, physical ambience, cleanliness of OPD, privacy during examination, communication of health issues and satisfaction as regards to management and advice by the medical staff. Participants were also asked to give score to their level of satisfaction towards OPD services on a scale of 0 (worse) to 10 (perfect). A summary percent satisfaction score was calculated for each participant. Each interview took 15-20 minutes from taking consent to thanking the participant. Responses were marked on hard form and checked for missing entries before relieving the participants.). Data were then entered into SPSS version 25 for coding and cleaning. Frequency distributions were run for data consistency, checking coding and missing values. Socio-demographic characteristics (age, sex, education employment status, income and frequency of OPD visits) were categorized into logical groups for analysis.

Difference of proportion was examined using Pearson's Chi-squared test (Fisher's exact test if cell values are less than 5). Normality assumption was checked for summary satisfaction score and for mean comparison of satisfaction score, in relation to socio-demographic characteristics. Difference of proportion was examined using Student t test. We also modelled summary satisfaction score using multiple linear regression to examine mean satisfaction score regressing against age groups, sex, area of residence, educational status, monthly income and frequency of visit. Adjusted estimates were presented for mean difference of satisfaction score with 95% confidence intervals. P-value of less than 0.05 was considered statistically significant.

RESULTS

Two hundred and nine clients visiting OPD departments of a tertiary care teaching hospital were invited for an exit interview. Twenty-two clients refused to participate and four clients were excluded since they were referred to medical or surgical emergency departments. Finally, data from 180 clients (93 from medical and 87 from surgical OPDs) were analyzed (Figure 1). Of 93 clients from medical OPD, 43(46.2%) were aged 49-59 years, 59(63.4%) were females, mostly were household workers. Most clients (60%) were from suburban areas, with more than two-thirds had no formal education and monthly income was ranging between 10,000-20,000 rupees. About 60% clients were the regular visitor to this hospital (Table 1). In contrast, majority of clients (59%) in surgical OPD were aged less than 40 years and about 60% were females, working only as house-wives, mostly married, with 37 (43%) had completed secondary education. Comparing socio-demographic characteristics of clients, we found that most clients in surgical outdoor were aged less than 40 years, whereas those in medical OPD were aged between 40-59 years. This difference was found statistically significant ($p=0.01$). Difference of educational and marital status of those attending medical and surgical outdoor departments were also found statistically significant (<0.001), whereas no difference was observed for gender, employment

status, area of residence, monthly income or frequency of OPD visit (Table 2).

Regarding level of satisfaction from medical OPD services, we found that 53% of clients were dissatisfied from OPD timings and 54% were dissatisfied from waiting time for examination. In contrast for surgical OPD services, 56% clients were dissatisfied from cleanliness, 55% dissatisfied from waiting time and 53% were dissatisfied from the attitude of surgical staff (Table 2).

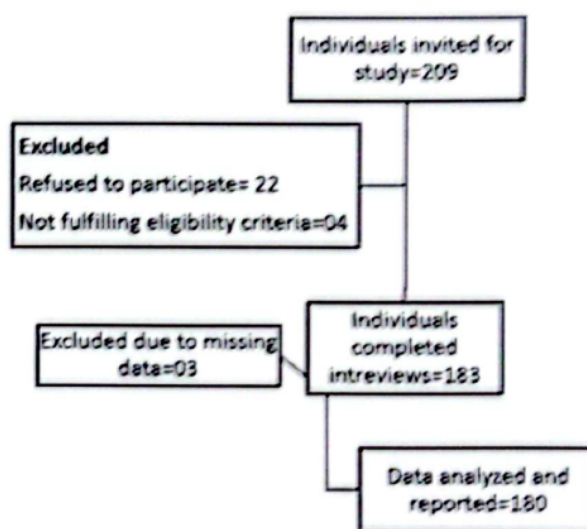


Figure 1: Flow diagram showing recruitment process of study participants

Comparison of mean satisfaction summary score in relation to socio-demographic characteristics showed that those clients aged less than 40 years has mean score of 60% from medical and surgical OPD services; females were more satisfied compared with males (59% versus 57%) and satisfaction score was higher for those with primary education or above. However, difference of summary score in regards to these factors were not statistically significant (Table 3). Yet, we found a statistically significant difference of satisfaction score ($p=0.03$), comparing area of residence of clients attending surgical OPD service, where 62% against 59% clients from rural versus urban areas reported their satisfaction (Table 3).

Table 4 represents the results of the multiple linear regression analysis, it shows that mean summary satisfaction score was 59%, and there was no statistically

significant relationship found between summary score and age, sex, educational status, monthly income or frequency of visit after adjusting for these factors in regression model.

DISCUSSION

This study examined the patient's satisfaction based on provision of physical ambience, Medic-client communication, and attitude of medics towards patients/clients, extent to which clients are satisfied to visit again or refer their friends to use OPD services of a public sector teaching hospital in Sialkot. Overall, fifty-nine percent clients expressed their satisfaction

toward medical and surgical OPD services. Clients were dissatisfied in regards to OPD timings, waiting for consultations and cleanliness of toilets.

Main strength of our study is that it used a validated and reliable questionnaire (O-PAHC) designed for low-income countries. Both medical and surgical services were encompassed in the survey and separately analyzed for comparison. The results should be interpreted and read considering the limitations that study design was cross-sectional and only one hospital was surveyed which may affect its generalizability to similar settings. There may be a chance of response (interviewee) bias

Table 1: Baseline characteristics of participants visiting medical and surgical Out-patient Department (OPD) of Allama Iqbal Memorial Hospital Sialkot, Pakistan (n=180)

Characteristics	Clients visiting medical OPD (n=93)		Clients visiting surgical OPD (n=87)		p
	Numbers	Percentage (%)	Numbers	Percentage (%)	
Age (in year)					
Less than 40 years	30	32.3	51	58.6	0.01
40-59 years	43	46.2	29	33.3	
60 years and above	20	21.5	07	8.0	
Sex					
Males	34	36.6	34	39.1	0.72
Females	59	63.4	53	60.9	
Employment status					
Employed	32	34.4	32	36.8	0.74
Unemployed	61	65.6	55	63.2	
Area of residence					
Rural	57	61.3	55	63.2	0.79
Urban	36	38.7	32	36.8	
Marital Status					
Married	86	92.5	65	74.7	0.01
Not Married	07	7.5	22	25.3	
Educational Status					
No Schooling	73	78.5	31	35.6	<0.00
Completed Primary	20	21.5	19	21.8	
Completed Secondary	0	0	37	42.5	
Monthly Income (Rs)					
Less than 10 K	15	16.1	13	14.9	0.69
10K -20K	68	73.1	61	70.1	
More than 20K	10	10.8	13	14.9	
Frequency of visit					
Regularly visiting	59	63.4	50	57.5	0.41
First time visit	34	36.6	37	42.5	

Abbreviations: p stands for probability of rejecting null hypothesis when it is true. K=1000 Rupees

Footnote: Statistical significance for difference in proportions was calculated using Pearson's Chi-Squared test. Fisher's Exact test was used when cell values are less than 5. P less than 0.05 was considered statistically significant. Percentages are column wise. Data are numbers and percentages (%) unless indicated otherwise.

Table 2: Patient's satisfaction towards medical and surgical Out-patient (OPD) services provided at Allama Iqbal Memorial Hospital Sialkot, Pakistan (n=180)

Satisfaction criteria	Clients visiting medical OPD (n=93)				Clients visiting surgical OPD(87)			
	Satisfied		Dissatisfied		Satisfied		Dissatisfied	
	N	%	N	%	N	%	N	%
OPD timings	44	47.3	49	52.7	51	58.6	36	41.4
Registration waiting time	52	55.9	41	44.1	59	67.8	28	32.2
OPD sitting Area	64	68.8	29	31.2	74	85.1	13	14.9
Accessibility of OPD	79	84.9	14	15.1	71	81.6	16	18.4
Cleanliness and ambience	67	72.0	26	28.0	69	79.3	18	20.1
Toilets' cleanliness /facility	49	52.7	44	47.3	38	43.7	49	56.3
Waiting time for examination	43	46.2	50	53.8	39	44.8	48	55.2
Attitude of support staff	73	78.5	20	21.5	63	72.4	24	27.6
Attitude of medical staff	63	67.7	30	32.2	61	70.1	26	29.8
Privacy in examining	76	81.7	17	18.3	70	80.5	17	19.5
Medics listened your issues	62	66.7	31	33.3	41	47.1	46	52.9
Medics explained treatment	68	73.1	25	26.9	56	64.4	31	35.6
Medics gave reasonable time	54	58.1	39	41.9	49	56.3	38	43.7
Satisfied to visit again	59	63.4	34	36.6	54	62.1	33	37.9
Satisfied for your friend/family	61	65.6	32	34.4	49	56.3	38	43.7

Abbreviations: N, Number; %, percentage; OPD, Out-patient department

Footnotes: Data are numbers and percentages (%) unless indicated otherwise. Row percentages are used. NO statistically, significance difference found in comparing satisfaction criteria in medical and surgical OPD (except for time given for consultation and privacy given during examination); Chi-squared test was used. P<0.05 was taken as cut off point.

Table 3: Comparison of mean patient's satisfaction summary score (as percentage) in relation to socio-demographic characteristics of clients attending medical and surgical Out-patient Department (OPD) of Allama Iqbal Memorial Hospital Sialkot (n=180)

Patients' satisfaction summary score	Clients visiting medical OPD (n=93)				Clients visiting surgical OPD (87)			
	Mean score (%) ± SD	Mean difference	95% CI. of mean difference	p	Mean score (%) ± SD	Mean difference	95% CI. of mean difference	p
Age								
< 40 years	59.5 ± 6.9	2.038	-0.59 - 4.7	0.13	60.0 ± 5.4	0.234	-2.3 - 2.8	0.85
≥ 40 years	57.4 ± 5.4				59.8 ± 6.4			
Sex								
Male	57.0 ± 6.5	-1.666	- 4.2 - 0.8	0.19	58.8 ± 7.1	-1.885	-4.4 - 0.65	0.14
Female	58.7 ± 5.6				60.7 ± 4.6			
Area of residence								
Rural	57.8 ± 6.2	-0.766	-3.3 - 1.8	0.41	58.9 ± 5.8	-2.711	-5.2 - (-0.2)	0.03
Urban	58.6 ± 5.7				61.7 ± 5.5			
Educational Status								
No Schooling	57.7 ± 5.4	-1.801	-4.8 - 1.2	0.24	58.7 ± 6.6	- 1.915	-4.4 - 0.64	0.14
Primary and above	58.0 ± 6.2				60.6 ± 5.2			
Frequency of visit								
First visit	58.2 ± 5.4	0.189	-2.4 - 2.8	0.88	59.3 ± 5.6	- 1.076	- 3.5 - 1.4	0.39
Regularly visiting	58.0 ± 6.4				60.4 ± 5.9			
Monthly Income (Rs)								
< 10K	59.8 ± 6.6	2.044	-1.3 - 5.4	0.23	57.9 ± 5.3	- 2.374	- 5.8 - 1.1	0.17
10K and above	57.8 ± 5.9				60.3 ± 5.3			

Abbreviations: CI, confidence interval; p stands for probability of rejecting a null hypothesis when it is true, SD, Standard deviation; K=1000 Rupees.

Footnotes: Student t test was used to compare difference of mean satisfaction score and to examine the null hypothesis (i.e there is no difference in mean satisfaction score as regards to age, sex, education status, monthly income, frequency of visit or area of residence).

Table 4: Regression coefficients of patient's satisfaction summary score (as percentage) on socio-demographic characteristics of clients attending medical and surgical Out-patient Department (OPD) of Allama Iqbal Memorial Hospital Sialkot (n=180)

Patients' satisfaction summary score	Clients visiting medical OPD (n=93)				Clients visiting surgical OPD (87)			
	Mean score (%) $\pm$ SD	Regression Coefficient	95% CI	p	Mean score (%) $\pm$ SD	Regression Coefficient	95% CI	p
Age								
<40 years	59.5 $\pm$ 6.9	Reference			60.0 $\pm$ 5.4	Reference		
40-59 years	57.0 $\pm$ 5.7	-1.7	-5.1 -1.6	0.30	60.5 $\pm$ 5.9	0.63	-2.4 -3.7	0.69
$\geq$ 60 years	58.3 $\pm$ 4.8	0.05	-4.1 -4.2	0.97	56.9 $\pm$ 8.3	-2.9	-8.1 -2.2	0.26
Sex								
Male	57.0 $\pm$ 6.5	Reference			58.8 $\pm$ 7.1	Reference		
Female	58.7 $\pm$ 5.6	1.8	-0.9 -4.5	0.19	60.7 $\pm$ 4.6	1.5	-1.2 -4.2	0.27
Area of residence								
Rural	57.8 $\pm$ 6.2	Reference			58.9 $\pm$ 5.8	Reference		
Urban	58.6 $\pm$ 5.7	1.1	-1.6 -3.9	0.41	61.7 $\pm$ 5.5	2.3	-0.3 -4.9	0.08
Educational Status								
No Schooling	57.7 $\pm$ 5.9	Reference			58.7 $\pm$ 6.6	Reference		
Completed Primary	59.5 $\pm$ 6.1	1.8	-1.3 -4.9	0.26	58.1 $\pm$ 5.4	-1.1	-4.6 -2.4	0.52
Completed Secondary School	-	-	-	-	61.9 $\pm$ 4.7	2.1	-0.9 -5.2	0.17
Frequency of visit								
First visit	58.2 $\pm$ 5.4	Reference			59.3 $\pm$ 5.6	Reference		
Regularly visiting	58.0 $\pm$ 6.4	-0.20	-2.8 -2.4	0.87	60.4 $\pm$ 5.9	1.3	-1.2 -3.7	0.30
Monthly Income (Rs)								
<10K	59.8 $\pm$ 6.6	Reference			57.9 $\pm$ 5.3	Reference		
10K -20K	57.8 $\pm$ 5.8	-0.9	-5.1 -3.2	0.65	60.1 $\pm$ 6.1	2.5	-1.3 -6.4	0.19
More than 20K	57.5 $\pm$ 6.5	-1.4	-6.9 -4.1	0.61	59.5 $\pm$ 4.6	0.67	-1.3 -5.4	0.78
Intercept (β_0)		57.8			54.9			

Abbreviations: CI, confidence interval; p stands for probability of rejecting a null hypothesis when it is true, SD, Standard deviation.

Footnotes: Multiple linear Regression modelling was used. t-test was used to examine the null hypothesis (i.e mean patient satisfaction score is not related to age, sex, education status, monthly income, frequency of visit or area of residence, R square=0). Outcome is the patient's satisfaction (numerical) presented as percentage score. Model estimates are adjusted for age, sex, educational status, employment status, frequency of visit, area of residence and monthly income. Lowest category was used as reference category (age= <40; Sex= male; Area of residence=Rural; Educational Status= No Schooling; Frequency of visit= First time; Monthly Income= Less than 10 K). Mean patient satisfaction score is 59% $\pm$ 6 (Range=41% to 70%).

Generalized model = $\beta_0 + \beta_1(\text{age}) + \beta_2(\text{sex}) + \beta_3(\text{area}) + \beta_4(\text{education}) + \beta_5(\text{visit}) + \beta_6(\text{income})$

due to socio-cultural variations.

Comparing our results with previous studies, we found that a big study (n=850) in Southern Panjab identified doctor and nurses services along with waiting time as strong predictors of patient satisfaction.⁷ Our results are consistent with these results and additionally we found physical ambience and attitude of surgical staff affect the level of satisfaction. Similarly, Javed et al. (2018) reported that patient satisfaction is strongly related to the attitude and empathy in public sector hospitals.⁸ Same team of author also found in their

another study that reliability and responsiveness of healthcare staff are most strongly predicting patient satisfaction in public and private health care sectors and clients were more satisfied with private hospital settings.⁹ However, comparing public and private hospital services in our settings may not be applicable, since type of clients in two settings are different. Usually, poor patients attend public sector hospitals. Comparable findings regarding patient's satisfaction towards OPD services have been reported in our neighboring countries, such as India, China and Bangladesh, where

healthcare delivery system is also comparable, alongside the socio-demographic features. Sodani et al.¹⁰ in Madhya Pradesh India found that most clients visited public sector facility due to its accessibility, cost and provision of medicine. Waiting time was the main factor of dissatisfaction, whereas clients were satisfied with doctor's behavior. These findings are also consistent with our study. Similarly, another study in Northern India conducted by Kaur et al.¹¹ showed that patients were dissatisfied from waiting time for consultation, status of cleanliness and about 71% (66% in our study) were likely to recommend friend and family members to visit this facility. In contrast to these results, we also found that few studies reported higher level of satisfaction on doctor's behavior, waiting time and cleanliness. For example, Mukhtar et al.¹² showed that 94% of participants in their study were satisfied from cleanliness, waiting time and doctor's behavior. Likewise, Khattak et al.¹³ in Peshawar also reported higher level of satisfaction towards OPD service in contrast to our results. The difference of results may be attributed to varying methodology (instruments) used in these studies as well as interviewee bias.

Patient's satisfaction is an essential aim of any health care system, however, its measurement poses certain limitations, such as availability of valid and reliable tools to measure the accurate construct and predictors. The clinical as well as non-clinical outcomes of care also influence the patient satisfaction. There are number of dimensions of perceived health care delivery been described by various studies, including factors pertains to technical, inter-personal, social and moral aspects of care.^{14,15}

We did not find any association between age, gender, educational status of patients with their satisfaction towards OPD services. This finding is not unusual and literature is quite congruent to this observation.¹⁶ Certain studies found old age and better health status as strong predictors of patient's satisfaction¹⁷, whereas others found age and gender as weak predictors.¹⁸

Over the past two decades, patient satisfaction surveys are increasingly gaining popularity; however, variation in hospital settings and operational mecha-

nisms in both developing and developed countries poses limitation to develop standardized tools of assessment. Another important element in this regard is the using survey data to devise strategies for improving quality of care. There is evidence that countries like France, Germany and Britain are using patient satisfaction data and feedback for planning, management and healthcare quality improvement¹⁹, whereas developing countries are yet to use this vital information for healthcare quality improvement. Future researcher should focus on two fronts: developing and testing new tools of patient's satisfaction and applying these tools to inform managers how clients are viewing healthcare services and what improvements are required in healthcare delivery systems in order to satisfy clients, and ultimately improving the health status of the community.

CONCLUSION

On an average, 59% (range: 41%-70%) of the OPD clients attending medical and surgical departments of this teaching hospital were satisfied from its working. No statistically significant difference was found for mean satisfaction score in regards to age, sex, education status and frequency of visit. Hospital administration needs to devise strategy to reduce waiting time for consultation, extend OPD timings, with more efforts required to improve physical ambience.

Conflict of Interest *None*

Funding Source *None*

REFERENCES

1. Al-Abri R, Al-Balushi A. Patient satisfaction survey as a tool towards quality improvement. *Oman Medical Journal*.2014;29(1):3-7. DOI 10. 5001/omj.2014.02
2. Aerlyn GD, Paul PL. Patient Satisfaction Instruments used at Academic Medical Centers: Results of a Survey. *American Journal of Quality*. 2003;18(6) [online], available at: <http://ajm.sagepub.com/content/18/6/265> [Accessed: December2019]
3. Jenkinson C, Coulter A, Bruster S, Richards N, Chandola T. Patients' experience and satisfaction with Health Care: Results of a questionnaire study of specific aspects of care. *Quality Safety Health Care*.2003; 11:335-339.

4. Iftikhar A, Allah N, Shadiullah K, Habibullah K, Muhammad AHK. Predictor of patients satisfaction. *Gomal Journal of Medical Sciences*. 2003; 9 (2): 183-188
5. Linda DU. Patient satisfaction measurement: current issues and implications. *Lippincott's Case Management*. 2002; 7(5): 194-200.
6. Webster TR, Mantopoulos J, Elizabeth J, Heather CL, Kidane L, Kebede S, et al. A brief questionnaire for assessing patient healthcare experiences in low-income settings. *International Journal for Quality in Health Care*. 2011;23(3):258-268
7. Hussain A, Asif M, Jameel A, Hwang J. Measuring OPD Patient Satisfaction with Different Service Delivery Aspects at Public Hospitals in Pakistan. *International Journal of Environmental Research and Public Health*. 2019;16(13):2340.
8. Javed SA, Ilyas F. Service quality and satisfaction in healthcare sector of Pakistan- the patients' expectations. *Int J Health Care Qual Assur*. 2018 Jul 9;31(6):489-501. doi: 10.1108/IJHCQA-08-2016-0110. PMID: 29954278.
9. Javed SA, Liu S, Mahmoudi A, Nawaz M. Patients' satisfaction and public and private sectors' health care service quality in Pakistan: Application of grey decision analysis approaches. *Int J Health Plann Manage*. 2019 Jan;34(1):e168-e182. doi:1002/ hpm. 2629. Epub 2018 Aug 30. PMID: 30160783.
10. Sodani PR, Kumar RK, Srivastava J, and Sharma L. Measuring Patient Satisfaction: A Case Study to Improve Quality of Care at Public Health Facilities. *Indian J Community Med*. 2010 Jan; 35(1): 52-56. doi: 10.4103/0970-0218.62554
11. Kaur M, Bashir A, Singh T, Kumar R. Cross-Sectional Study of Clients' Satisfaction With Outpatient and Inpatient Services of Public Health Facilities of a North Indian State. *Health Serv Insights*. 2020 Jun 12; 13:1178632920929969. doi: 1177/ 1178632920929969. PMID: 32587458; PMCID: PMC7294374.
12. Mukhtar F, Anjum A, Bajwa MA, Shahzad S, Hamid S, Masood Z, Mustafa R. Patient satisfaction; OPD services in a Tertiary Care Hospital of Lahore. *Professional Med J* 2013; 20(6): 973-980.
13. Khattak A, Alvi MI, Yousaf MA, Shah SZ, Turial D, Akhter S. Patient satisfaction—a comparison between public & private hospitals of Peshawar. *International Journal of Collaborative Research on Internal Medicine & Public Health*. 2012;4(5):713-22.
14. José MQ, Nerea G, Antonio FA, José A, S, Emilio S, Andrew T. Predictors of patient satisfaction with hospital health care, *Health Services Research*. 2003;6 (102).
15. Oyvind AB, Ingeborg SS, Hilde HI. Overall patient satisfaction with hospitals: effects of patient-reported experiences and fulfillment of expectations, *British Medical Journal Quality Safety*. 2011. [online], available at: <http://qualitysafety.bmj.com> [Accessed on August 2019]
16. Otani K, Herrmann PA, Kurz RS. Improving patient satisfaction in hospital care settings. *Health Serv Manage Res*. 2011 Nov;24(4):163-169.
17. Alzolibani AA. Patient satisfaction and expectations of the quality of service of University affiliated dermatology clinics. *Journal of Public Health and epidemiology*. 2011 Feb 28;3(2):61-7.
18. Ahsan N, Chawala JA, Farooq U, Rasool A, Ahmad A, Burki NA, Qureshi MU. Assessment of patients' satisfaction in medical and surgical wards in a tertiary care hospital. *J Ayub Med Coll Abbottabad*. 2012 Dec 1;24(3-4):147-50.
19. Andrabi S A, Hamid S, Rohul J Anjum F. Measuring patient satisfaction: A cross sectional study to improve quality of care at a tertiary care hospital, *Health line*. 2012; 3(1): 59-62.