ORIGINAL ARTICLE

SERVICE QUALITY OF DIAGNOSTIC FINE NEEDLE ASPIRATION CYTOLOGY IN A TERTIARY CARE HOSPITAL OF LAHORE (PROCESS MEASURE AS PATIENT'S PERSPECTIVE)

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Background: Quality of any service is the most important aspect for the manufacturer as well as the consumer. The primary objective of any nation's health system is to provide supreme quality health care services to its patients. The objective of this study was to assess the quality of diagnostic fine needle aspiration cytology service in a tertiary care hospital. As Patient's perspectives provide valuable information on quality of process, therefore, patient's perception in terms of satisfaction with the service was measured. **Methods:** In this cross sectional analytical study, 291 patients undergoing fine needle aspiration cytology in Mayo Hospital were selected by systematic sampling technique. Information regarding satisfaction of patients with four dimensions of service quality process, namely "procedure, sterilization, conduct and competency of doctor" was collected through interview on questionnaire. The questionnaire was developed on SERVQUAL model, a measurement tool, for quality assessment of services provided to patients. All items were assessed on 2- point likert scale (0=dissatisfied, 1=satisfied). Frequencies and percentages of satisfied and dissatisfied patients were recorded for each item and all items in each dimension were scored**.** If the percentage of sum of all item scores of a dimension was ≥60, the dimension was 'good quality'. Whereas <60% was 'poor quality' dimension. Data was analysed using epi-info-3.5.1. Fisher test was applied to check statistical significance. (p-value <0.05) **Results:** Out of the 4 dimensions of service quality process**,** Procedure (48.8%), Sterilization (51.5%) and practitioner conduct (50.9%) were perceived as 'poor' by the patients. Only practitioner competency (67.4%) was perceived as 'good'. Comparison of dimensions of service quality scoring with overall level of patient satisfaction revealed that all 4 dimensions were significantly related to patient dissatisfaction (p<.05) **Conclusion:** The study suggests that service quality of therapeutic and diagnostic procedures in public hospitals should be routinely monitored from the patients' point of view as most aspects of service quality in public hospitals of Pakistan, require improvements. In this manner patient's satisfaction regarding use of services in public hospitals can be made better.

Keywords: FNAC; SERVQUAL; Service quality measurement instrument; Patient perspective

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INTRODUCTION

Healthcare is the rapidly growing service in developed as well as developing countries. However, this sector is encountering tough competition in this globalized world**.** The key step towards success in any field is the provision of high quality service.[1]

The most important element in the success of health care organization is perception of service quality by the patient. Measurement of this essential factor can help us achieve high level of patient satisfaction.[2] For health care providers, patient satisfaction undoubtedly leads to fruitful results.[3,4] With patient satisfaction comes compliance.[5,6] In this way, satisfaction interferes with the effect of medical practices.[7] Quality provided by healthcare and patient satisfaction are the two most important pillars of quality measurement and overall health consequence.[8]

Donabedian has formulated a model on process, structure and outcome for measuring the quality of health care. Process refers to the professionalism associated with providing care, structure denotes the organization delivering care along with the condition under which it is being delivered and outcome means the effects of care[9]. This study focuses on patient's perception regarding "process" of health service provided to them. Four dimensions namely procedure, sterilization, practitioner conduct and competency were assessed. Patient's satisfaction was used as a measuring tool of patient's judgmental opinion on the level of care provided.

In the developed world, studies have been conducted on patient's viewpoint and expectation regarding quality of diagnostic and therapeutic procedures like colposcopy, LASIK services, maternity services and cancer care using various measurement instruments e.g. SERVQUAL, Service Satisfaction Scale for Cancer Care (SCA) and many more.[10–12] A hospital study on service quality and patient satisfaction

in a developing country, Bangladesh also supported this point of view.[13]

The health care delivery system in Pakistan is growing very fast. However, the service quality of healthcare is not up to the mark and unfortunately, the health outcome is quite unsatisfactory. Surprisingly, in Pakistan and other developing countries only a few studies have been conducted to assess patient's perceptions on the quality of health care services.[14,15] These studies have clearly depicted that patients are able to observe structural, process, and outcome measures of quality.[16,17] In addition there is decline of satisfaction measures for inpatients as well as outpatients.

The SERVQUAL instrument, a widely-used service quality measurement tool, is applicable in most of the service providing organizations like public and private hospitals[14], cell phone industry[18], hotels[19] and many more. The instrument identifies that there is obvious inequality between the perception and expectation of consumers depending on these five factors, i.e., responsiveness, reliability, assurance, empathy and tangibles to measure satisfaction[20]. However, numerous researchers have modified the SERVQUAL model according to their needs and keeping in view their cultural context, done in this study as well.[21]

Fine needle aspiration cytology is a simple method used to obtain a tissue diagnosis of tumours. The method is used commonly for the preoperative evaluation of breast lumps, but can also be used in cases of lymph nodes, prostate, thyroid etc.[22–24]

According to World health organization, service quality of health systems in developing countries must be focused to optimize the use of existing resources and to expand population coverage. This process should be based on sound strategies so that the best results for quality improvement are achieved from new investment.[25] Hence it is radical to assess various aspects of service quality at local health care settings**.** The objective of this study was to determine the service quality of fine needle aspiration cytology (FNAC) procedure via modified SERVQUAL measurement instrument in Mayo Hospital, Lahore, by measuring patients' satisfaction with it.

MATERIAL AND METHODS

A cross-sectional analytical study was conducted in July 2012 on patients undergoing fine needle aspiration cytology at Pathology Department, Mayo Hospital, Lahore. Two hundred and ninty-one patients fulfilling the inclusion criteria were selected through systematic sampling technique. First patient was selected randomly from the patients undergoing FNAC. After that every third patient was selected for interview.

A semi structured questionnaire was prepared for assessment of service quality by using "patient satisfaction" as a measurement tool. SERVQUAL instrument was used to prepare 20 items covering the four dimensions of service quality process: Procedure, Sterilization, Conduct and Competency of doctor.

A modified 2 point Likert scale was used for scoring each item as: 1- for satisfied patient. 0- for dissatisfied patient. Frequencies and percentages of satisfied and dissatisfied patients were recorded for each item and all items in each dimension were scored. If the percentage of sum of all item scores of a dimension was ≥60, the dimension was 'good quality'. Whereas <60% was 'poor quality' dimension.

Permission for carrying out the research was taken in advance from concerned authority. Informed consent was taken from every patient included in the study. The patients were interviewed by the researcher herself immediately after the FNAC procedure, outside the clinician room. Privacy and confidentiality was maintained during interview.

Data was entered and cleaned using Epi data version 3.1 and was analysed using Epi info version 3.5.1. Frequency tables and percentages were generated for all possible variables. Fisher exact test was applied to check statistical significance between level of patient satisfaction and dimensions of service delivered. (p-<0.05)

RESULTS

In this study, 291 patients visiting the pathology department of a tertiary care hospital for FNAC procedure were interviewed. Table-1 shows the number and percentages of satisfied and dissatisfied patients for the 20 items include in questionnaire.

The first dimension 'Procedure' included 9 items. Patients were satisfied with couch availability 290 (99.7%), cleanliness of FNA site 191 (65.6%), trained doctor 281 (96.6%), privacy 280 (96.2%)and presence of attendant 195 (67%). However, dissatisfaction was greatest among the items: waiting time ((81.1%), charges (45.4%), comfort level (69.1%) and pain (48.5%).

Next dimension "Sterilization" depicted that 280 (96.2%) patient was satisfied with the doctors practice of wearing gloves. However, 191 (65.6%) and 141(48.5%) patients were dissatisfied with the practice of wearing mask and used of sterilized kit for the procedure respectively.

"Conduct" of doctor during FNAC procedure. (4 items) showed that majority of patients were satisfied with greetings 202 (69.4%), and introduction of doctor 275 (94.5%). However, they were dissatisfied with counselling 180 (61.9%) and compassionate attitude of doctor 141 (48.5%). Lastly, all 4 items in "Competency" of the doctor namely: previous record review 291 (100%), history 195 (67%), examination 211 (72.5%) and information 175 (60.1%) revealed patient's greatest

satisfaction. As far as overall service quality was concerned, 84 (28.9%) patients were satisfied while 207 (71.1%) patients were dissatisfied with over all service quality of FNAC procedure.

Table-2 shows scoring of the quality dimensions on the basis of satisfaction and dissatisfaction of the patient. Competency of doctor was the only dimension perceived as 'good' by the patients (67.4%) while Procedure 48.5%, Sterilization 51.5% and Conduct 50.9% were perceived to be of 'poor quality'.

Table-3 shows the comparison of dimensions of service quality scoring with overall level of patient satisfaction. Out of 84 satisfied patients, 65 (77.4%%) considered 'Procedure' of FNAC good while 19 (22.6%) considered it poor. However, majority of dissatisfied patients (130 out of 207) considered the procedure 'poor'. *p* value was 0.000 which was statistically significant. Similarly, the comparison of rest of the dimensions showed that poor Sterilization (*p*-0.046), Conduct (*p*-0.000) and competency (*p*-0.000) had statistically significant relationship with overall patient dissatisfaction. (*p*-value <0.05).

Table-1: Satisfaction of patient with service quality of FNAC procedure (20 items) (n=291)

Quality of service	Level of satisfaction			
ITEMS	Satisfied		Dissatisfied	
	n	%	n	%
Procedure				
Waiting time for the procedure	55	18.9	236	81.1
Charges for the procedure	159	54.6	132	45.4
Availability of couch or chair for procedure	290	99.7	1	.3
Comfort level maintained during procedure	90	30.9	201	69.1
Practice of cleaning FNAC site before procedure	191	65.6	100	34.4
Pain free procedure	150	51.5	141	48.5
Well trained doctor for the procedure	281	96.6	10	3.4
Privacy maintained with screening	280	96.2	11	3.8
Presence of female attendant for female patients and vice versa	195	67.0	96	33.0
Sterilization				
The doctor's practice of wearing new gloves	280	96.2	11	3.8
The doctor's practice of wearing mask	100	34.4	191	65.6
Use of sterilized kit for each patient	150	51.5	141	48.5
Conduct				
The doctor greeted you	202	69.4	89	30.6
The doctor introduced himself to you	275	94.5	16	5.5
He/she counselled you	111	38.1	180	61.9
The doctor was compassionate	150	51.5	141	48.5
Competency				
Reviewing of previous medical records before procedure	291	100.0	0	0.0
Detailed history taken prior to procedure	195	67.0	96	33.0
Examination before the procedure	211	72.5	80	27.5
Information about the procedure	175	60.1	116	39.9
Total service quality of diagnostic procedure	84	28.9	207	71.1

Table-2: Quality scoring of dimensions

Dimensions of Quality	Quality Scoring	
	%	Good*/Poor*
Procedure	48.8	Poor
Sterilization	51.5	Poor
Conduct	50.9	Poor
Competency	67.4	Good

Good Quality*: percentage of sum of all item scores of a dimension ≥60. Poor Quality*: percentage of sum of all item scores of a dimension <60.

Table-3: Comparison of dimensions of service quality scoring with overall level of patient satisfaction (n=291)

Dimensions of service quality Scoring	Overall level of satisfaction				Total %)	*p*-value
	Satisfied (84)		Dissatisfied (207)			
	n	%	n	%		
Procedure						
Good	65	77.4	77	37.2	142 (48.8)	.000
Poor	19	22.6	130	62.8	149 (51.2)	
Sterilization						
Good	51	60.7	99	47.8	150 (51.5)	.046
Poor	33	39.3	108	52.2	141 (48.5)	
Conduct						
Good	61	72.6	87	42.0	148 (50.9)	.000
Poor	23	27.4	120	58.0	143 (49.1)	
Competency						
Good	70	83.3	126	60.9	196 (67.4)	.000
Poor	14	16.7	81	39.1	95 (32.6)	

DISCUSSION

Service quality is the central element of health systems. It has a significant effect on success of health care practice and patient satisfaction. The present study was conducted on 291 patients attending Mayo hospital, Lahore to determine the service quality of fine needle aspiration cytology (FNAC) process, by measuring patients' satisfaction with it.

The study throws light on the development of a 20- item scale based on SERVQUAL model. It is useful for routine based quality measurement by hospital administrators and external evaluators. It has assessed Service quality in health care facilities of many countries. Studies conducted in India and South Africa, describe the development of scales in their cultural context for measuring perceived quality in outpatients as well as inpatients.[26,27]

The analysis focused four distinct dimensions of quality: Procedure, Sterilization, Conduct and Competency of doctor which describe the 'process' of service quality**.**

Table-1 and 2 show that in the dimensions FNA procedure and sterilization, patients were satisfied with some aspects for example couch availability (99.7%), privacy (96.2%) and wearing gloves (96.2%). However, majority of the items including waiting time (18.9%), charges (54.6%), wearing mask (34.4%) and use of sterilized kit (51.5%) revealed discontent of the patients, therefore, leaving much room for improvement.[13]

These results correspond with other studies which show that irrespective of the fact where this study is being conducted, developed or developing countries, the highest rates of dissatisfaction (32%) are observed if length of the waiting time is increased for that very procedure.[28]

Like many other developing countries, an overwhelming majority of both urban and rural Pakistani population relies on Government hospitals for the health care. Over crowdedness and inadequacy of staff contribute to long waiting times to see a health provider. The dimension 'conduct' showed that patients were satisfied with doctor's introduction and greetings (69.4%). However, they were dissatisfied with the counselling (38.1%) provided to them revealing the time constraint doctors face while providing services. The high doctor-to-patient ratio in public hospitals is thus a major limiting factor from achieving patient satisfaction.

In the present study, competence had proved to be the most important determinant for patient satisfaction, (67.4% table-2) Pakistan's doctors have good knowledge of their field, and if given the chance, are good enough to satisfy their patients. The study of Omer et al, conducted in Bangladesh showed similar results regarding competence of doctors (70%).[29]

In another South African study, satisfaction for family planning services was based on communication, friendliness, and competence of the doctors and staff.[30] These studies have also supported Donabedian's model emphasis on "process" of health care in achieving patient satisfaction.

However, a single study conducted in Pakistan showed different results. It was found that, being capital of Pakistan, Islamabad's public hospitals are providing better services and accomplish the needs of their patient. Hence, further research is required to conduct similar studies in Pakistan to test the generalizability of these findings.[31] To sum up, the results of the study (Table-2 & 3) indicate that there is, no doubt, room for improvement in these four determinants of service quality and health care managers should look carefully at each dimension where patients perceive that the services being provided to them could be made better.

CONCLUSION

The study concludes that attributes of settings and providers are essential components of patient satisfaction and SERVQUAL scale is a valid measure of patient satisfaction for Pakistan's population**.** Service quality from the patients' perspective should be routinely monitored with an aim to make essential changes in process of health care where required. Initiatives should be taken by Government for Hospital Improvement by conducting pilot studies to assess patients' perception regarding use of services in public sector hospitals.

AUTHORS' CONTRIBUTION

ZR developed the research idea, critically evaluated manuscript, designed *pro forma* and wrote manuscript. RAU supervised the research. AR critically evaluated manuscript and analysed results and helped in manuscript writing. SW critically evaluated manuscript and analysed results.
TZ analysed results. HR analysed results.

REFERENCES

1. Chakraborty R, Majumdar A. Measuring consumer satisfaction in health care sector: The applicability of servqual. Int Refereed Res J 2011;2(4):149–160.
2. Williams SJ, Calnan M. Convergence and divergence: assessing criteria of consumer satisfaction across general practice, dental and hospital care setting. Soc Sci Med 1991;33(6):707–16.
3. Peyrot M, Cooper PD, Schnapf D. A consumer satisfaction and perceived quality of outpatient health services. J Health Care Mark 1993;13(1):24–33.

4. Zeithaml VA. Service quality, profitability, and the economic worth of customers: what we know and what we need to learn. J Acad Mark Sci 2000;28(1):67–85.
5. Calnan M. Towards a conceptual framework of lay evaluation of health care. Soc Sci Med 1988;27(9):927–33.
6. Pascoe GC. Patient satisfaction in primary health care: a literature review and analysis. Eval Program Plann 1983;6(3-4):185–210.
7. Choi KS, Cho WH, Lee S, Lee H, Kim C. The relationships among quality, value, satisfaction and behavioral intention in health care provider choice: A South Korean study. J Bus Res 2004;57(8):913–21.
8. Ygge B, Arnetz J. Quality of paediatric care: application and validation of an instrument for measuring parent satisfaction with hospital care. Int J Quality Health Care 2001;13(1):33–43.
9. Donabedian A. The quality of care: how can it be assessed? JAMA 1988;260(12):1743–8.
10. Wisniewski M, Wisniewski H. Measuring service quality in a hospital colposcopy clinic, Int J Health Care Qual Assur Inc leadersh Health Serv 2005;18(2-3):217–28.
11. Lin DJ, Sheu IC, Pai JY, Bair A, Hung CY, Yeh YH, *et al*. Measuring patient's expectation and the perception of quality in LASIK services. Health Qual Life Outcomes 2009;7:63.
12. Kamo N, Dandapani SV, Miksad RA, Houlihan MJ, Kaplan I, Regan M, *et al*. Evaluation of the SCA instrument for measuring patient satisfaction with cancer care administered via paper or via the Internet. Ann Oncol 2011;22(3):723–9.
13. Andaleeb SS. Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. Soc Sci Med 2001;52(9):1359–70.
14. Ahmed R, Samreen H. Assessing the service quality of some selected hospitals in Karachi based on the servqual model. Pak Bus Rev 2011;32(5):266–314.
15. Irfan SM, Ijaz A. Comparison of service quality between private and public hospitals: Empirical evidences from Pakistan. J Qual Technol Manag 2011;7(1):1–22.
16. Haddad S, Fournier P, Machouf N, Yatara F. What does quality mean to lay people? Community perceptions of primary care services in Guinea. Soc Sci Med 1998;47(3):381–94.
17. Baltussen RM, Ye Y, Haddad S, Sauerborn RS. Perceived quality of care of primary health services in Burkina Faso. Health Policy Plan 2002;17(1):42–8.
18. Kang GD, James J. Service quality dimensions:An examination of Gronroos's service model Manag Serv Qual 2004;14(4):266–77.
19. BLEŠIĆ I, Ivkov-Džigurski A, Stankov U, STAMENKOVIĆ I, Bradić M. Research of expected and perceived service quality in hotel management. Rev Tur-Stud Si Cercet Tur. 2011;11:6–14.
20. Parasuraman A, Zeithaml VA, Berry LL. Servqual: A multiple-item scale for measuring consumer perc. J Retail 1988;64(1):12–40.
21. Reidenback ER, Sandifer-Smallwood B. Exploring perceptions of hospital operations by a modified SERVQUAL approach. J Health Care Mark 1990;10(4):47–55.
22. Lever JV, Trott PA, Webb AJ. Fine needle aspiration cytology. J Clin Pathol 1985;38(1):1–11.
23. Linsk JA, Franzén S, editors. Clinical aspiration cytology. Lippincott Williams & Wilkins; 1989.
24. Kline TS. Handbook of fine needle aspiration biopsy cytology. CV Mosby; 1981.
25. WHO. Quality of care: a process for making strategic choices in health systems. Geneva: WHO; 2006. p.38.
26. Rao K D, Peters DH, Bandeen-Roche K. Towards patient-centered health services in India—a scale to measure patient perceptions of quality. Int J Qual Health Care 2006;18(6):414–21.
27. Wagstaff, A. Poverty and health sector inequalities. Bull World Health Organ 2002;80(2):97–105.
28. Westaway MS, Rheeder P, Van Zyl DG, Seager JR. Interpersonal and organizational dimensions of patient satisfaction: the moderating effects of health status. Int J Qual Health Care 2003;15(4):337–44.
29. Omer K, Cockcroft A, Andersson N. Impact of a hospital improvement initiative in Bangladesh on patient experiences and satisfaction with services: two cross-sectional studies. BMC Health Serv Res 2011;11(Suppl 2):S10.
30. Westaway MS, Viljoen E, Chabalala HP. Satisfaction with family planning services-interpersonal and organisational dimensions. Curationis 1998;21(4):3–7.
31. Shabbir S, Kaufmann HR, Shehzad M. Service quality, word of mouth and trust: Drivers to achieve patient satisfaction. Sci Res Essays 2010;5(17):2457–62.

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