
PUBLIC HEALTH RESEARCH

A Cognitive Analysis of Influencing Factors towards Urbanites' Healthcare Satisfaction in Bhubaneswar

Nihar Ranjan Rout^{1*} and Ram Babu Bhagar²

¹Post Graduate Department of Population Studies, Fakir Mohan University, Odisha, India.

²Department of Migration and Urban Studies, International Institute for Population Sciences, Mumbai, India.

*For reprint and all correspondence: Nihar Ranjan Rout, P. G. Department of Population Studies, Fakir Mohan University, Nuapadhi, Balasore – 756 020, Odisha, India.

Email: nihar_rout@rediffmail.com / niharfmu@gmail.com

ABSTRACT

Accepted	28 November 2012
Introduction	Despite of the potential role of service quality analysis from the beneficiaries' perspectives in health system strengthening, its use has been limited in the developing world. More so, the analysis of socio-economic and demographic correlates of the perception differentials has been least addressed by the researchers. This study is an attempt to explore the perception of the urbanites regarding quality of health centres in Bhubaneswar, India and its socio-economic correlates.
Methods	A cross-sectional study was carried out in which, data were collected from a sample of 180 respondents residing in six different types of residential localities of the city and an un-weighted hospital quality index was computed for analyzing the satisfaction level and its differentials, after carrying out the validity and reliability analyses of the index.
Results	Urbanites in this study were dissatisfied with many aspects of health care delivery in government health centres, like supply of medicines and availability of appropriate medical equipments. Although most of the respondents (78%) were quite satisfied with the private hospitals, there existed few lacunas to be bridged too. Overall satisfaction level was found to be associated with age ($p=.134$), migration status ($p=.005$), education ($p=.000$), residence type ($p=.000$), household size ($p=.001$) and income of the respondents ($p=.000$).
Conclusions	A strong need of strengthening the government health centres was felt and so also taking measures to further improve private hospital quality in the city. There was also a need to address the disparity in health care service provision between slum and non-slum households, at an urgent basis.
Keywords	Perception - Hospital Quality - Urban - Index - Bhubaneswar

INTRODUCTION

It has well been understood that health need of each and every section of the society in both developing and developed nations is increasing at an alarming rate and catering to such needs would require a lot of resources to be utilized. No nation, however rich, has enough resources to meet the health needs¹ and thus proper assessment, allocation and utilization of the available resources is required for providing efficient health care services.

Availability, acceptability, accessibility and affordability have always been the issues closely linked with the health care delivery system and more so in case of developing countries. As far as the available health infrastructure and resource allocation (in terms of health manpower, money and material) in India is concerned, the averages are very much satisfying on a national basis. However, there is a high level of maldistribution of health infrastructure between rural and urban areas¹. In fact, approximately three fourth of the overall health infrastructure is available in urban areas, where just above one fourth of the total population live. This problem is particularly acute in a state like Odisha. Thus, availability of health care facilities has never been a big problem in the urban areas of India. Yet, the most important question is whether the urban health centres are being able to provide quality care to the beneficiaries or not. As per a recent report², in most of urban India, public hospitals are overburdened affecting the quality of care, whereas the high costs make private healthcare facilities out of reach for the urban poor. In order to effectively address the health concerns of such population, Government of India has declared to launch the National Urban Health Mission (NUHM). Nevertheless, such studies assessing public opinion about health centre quality can be of immense help in improving the overall standard of health care facilities in a region. However, despite of the potential role of quality improvement in health system strengthening and improving hospital management its use was very limited and modest in the developing countries³.

Quality is one of the most important strategic tools for attaining operational efficiency and improved business performance in both goods and services sectors; but is more difficult to identify and measure in case of the later⁴. What so ever, quality determination can be done from the perspectives of both the clinicians as well as the patients. More recently, patients' assessment of quality care has begun to play an important role, especially in the advanced industrialized countries, where their satisfaction or dissatisfaction with services has become an important area of inquiry⁵. Though few researchers feel that customer satisfaction as a gauging rod of quality of health care provision is not very appropriate, use of such a methodology is well accepted now. In fact,

Petersen⁶ goes on to say that whether the patient is right or wrong hardly matters, and what counts the most is how the patients feel about the service. Perceptions of service quality enable healthcare providers to identify the activities that require improvement⁷. Thus, 'patient satisfaction' should be considered to be one of the desired outcomes of care, and gathering such information become indispensable in the management of health care systems⁸.

Research on patient satisfaction with medical care as an explanatory variable can be traced back to the late 1960s⁹⁻¹⁰, and the interest shifted gradually to patient satisfaction as the dependent variable, in the subsequent years⁹. Service quality is mostly conceptualized by three alternative theories - the attribute theory, the customer satisfaction theory and the interaction theory and the most important service models currently in wide use worldwide are 'Karl Albrecht's Service Triangle' and 'SERVQUAL Gap Model'¹¹. However, perception scores provide a better measure of service quality than the gap scores, based on composite reliability, fit indices, and correlation indices¹².

There have been plenty of studies suggesting a preference towards opting private hospitals for obtaining health care services in different part of the world. In fact, available literature clearly indicate that given the opportunity and the means, many patients in developing countries - as well as in the industrialized world - prefer private practitioners to the public sector, and in their words, patients expect more responsiveness and/or a better quality of care in the health centres, which they feel is worth paying for. However, empirical evidence regarding comparative advantages of private health care delivery was not available in plenty¹³. Since private hospitals are dependent on income from clients (i.e. market incentives) and not subsidies; they would be more motivated than public hospitals to provide quality services to patients. It was found in a study in Bangladesh that the respondents did perceive the quality of services to be better in private hospitals, with greater proportion of patients seeking private care⁵. Similar observations were also made in the analysis of private health care provision in India¹⁴.

When it comes to health care of the urbanites, individuals hardly make any arbitrary choice. There are plenty of factors related to different aspects of service provision, which affect the choice of a particular health centre and overall satisfaction with the services. It was found in a study in Korea that general satisfaction with medical services is determined primarily by factors related to medical staff, followed by those related to payment, and to comfort and accessibility¹⁵. Despite of the fact that technical competency is

always considered by both the service providers and the beneficiaries to be one of the most important characteristics of good quality hospital, importance of other allied factors in determining the level of satisfaction of the consumers with the services cannot be ignored. In fact, people also feel many non-clinical traits like behaviour of the doctor, use of understandable language, cleanliness etc. to be important aspects of quality of care in hospitals¹⁶. Looking at the fast paced urban life, waiting time seems to be an important factor affecting the perception of the population regarding quality of hospitals they visit. In fact, perceived waiting time has been found to be a strong predictor of patient satisfaction¹⁷. A significant number of studies have also reported that short waiting time is always considered as one of the criteria for high quality health services and thus considered as a valuable indicator of hospital quality¹⁸.

Another major issue of concern, which has not been given enough emphasis, is the correlates of satisfaction with health care services. Current research on hospital quality has little interest in the correlations between patients' characteristics and their levels of satisfaction¹⁹. In a micro level study in Malaysia, it was found that higher level of satisfaction with health centre quality was associated with higher age, lower educational level and lower level of income, mostly because of the differential in their expectation levels²⁰. Very similar findings were also obtained in a study carried out in Selangor state²¹. Although Qatari and Haran²² found no association between age and healthcare satisfaction in their study, most of the available literature argued that overall satisfaction with health services increased with the age of the respondent²³⁻²⁵, whereas level of education was negatively associated with satisfaction score^{24, 26}. Further, in a hospital based study, it was observed that clients' satisfaction with health service deliveries was higher for farmers (possibly with lower income level) and relatively lower for individuals with business and services as sources of income²⁴. There are many demographic and institutional characteristics, which are not within the control of the health centre, but influence the overall satisfaction score. In fact, such scores were consistently influenced by age, health status and race, the factors that need to be adjusted before any justification is made about the original findings²⁷. Therefore, in this study, peoples' perception about the hospital quality in the city has been cross-analyzed by number of background characteristics in order to arrive at a better understanding of the actual state.

Study Area

Bhubaneswar is the capital city of the state of Odisha, located in the eastern coast of India and is

one of the fastest growing cities in the country. Owing to increasing number educational and other institutes, the city is getting an unambiguous transformation now and has arguably become the epicentre of healthcare revolution in Odisha. In fact, industrial and infrastructural development has boosted the healthcare market in Bhubaneswar, attracting corporates to set up base in the temple city²⁸. As such, the city has now been flooded with health centres and almost all the industries established in the state in the recent time have either opened or in the verge of opening of their multi faceted modern hospitals in the city.

Objectives

The current study is an attempt to develop an index for exploring the perception of city dwellers regarding quality of health centres in the city of Bhubaneswar in India, and its socio-economic correlates. The specific objectives are:

- 1) To analyze the perception of the respondents about government health centres, their preferred health centres and its variation across different explanatory variables.
- 2) To find out the level of satisfaction with the available private hospitals in the city and its correlates, among the sample population.

MATERIALS AND METHODS

Samples

The current study is based on a cross-sectional survey carried out in Bhubaneswar during October-November 2007. In this study, information regarding the perception of city dwellers about hospital quality in the study area was gathered through a survey covering 180 households from six different residential pockets of the city. In the process of obtaining the samples, with reference to the classification done by Odisha State Pollution Control Board²⁹ the entire city was divided into six different categories, based on the availability of different infrastructure in those areas, namely Residential area with good infrastructure, Residential area with average infrastructure, Residential areas with poor infrastructure, Industrial area, Slums in the main city area and Slum in the outskirts. One residential pocket from each category of localities was selected randomly followed by the selection of 30 households from each of the selected pockets on the basis of stratified systematic sampling. The raw data gathered by using a structured interview schedule were processed and analyzed by using SPSS 15.

Measurement

Consumers' perception has always been considered to be the most important indicator of health care

service. In fact, studies carried out in different parts of the world have found a significant relationship between the perception of the consumers on the quality of services and their satisfaction³⁰⁻³². After reviewing the available literature³²⁻³⁵, a number of items explaining the quality of health care service were listed e.g. Clinical effectiveness, Responsiveness to patients, Production efficiency, Safety, Responsive governance, Acceptability, Accessibility, Appropriateness, Capacity, Competence, Timeliness, Availability of modern equipments and technology, Prompt service, Personal attention, Physical facility, Willingness to help, Ability of staff, Waiting time, Cleanliness, Fee and payment, Politeness of employee, Cost of the service, Provision of information etc. However, keeping in mind the relevance of the items for the current study, feasibility of collecting information on those items and the fact that the respondents would be the common urbanites and not necessarily the patients, directly hospitalised in recent past, six items were finalised for collecting information on the quality of private health centres (Doctors’

treatment ability, Staff behaviour, Availability of equipments, Staff attendance, Expenditure on treatment and Waiting time).

The set of questions asked to the respondents were 1) Doctors’ diagnosis and treatment ability is good, 2) Level of attendance by hospital staff is good, 3) Appropriate medical equipments are available in the hospital, 4) All staff members show good behaviour and cooperation to the patients and their attendants, 5) Expenditure on treatment in Private Hospital is very high and 6) Usually the patients and attendants have to wait for a long time during their checkup, among which, the first four were positive indicators and the last two were negative indicators. The responses were collected in a five point Likert Scale (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree) and as shown in Table 1, the respondents were assigned with their respective scores against each item. Further, respondents reporting Don’t Know/ Can’t Say, along with those who did not answer the particular set of questions were omitted from the analysis (8 cases in total).

Table 1 Values assigned to different responses on questions on private hospital quality

Type of Variables	Response				
	SA	A	N	D	SD
Positive	5	4	3	2	1
Negative	1	2	3	4	5

For the purpose of establishing construct validity of the index, patterns of inter-correlations among the measures were also analysed. The correlation coefficients (as shown in table 2) clearly indicated that the four positive variables

were having strong positive relationships among one another and strong negative relationships with the negative variables, at 99 percent level of significance.

Table 2 Inter correlation between the items used for constructing PHQI

Doctors’ treatment Ability (V1)	1					
Staff Attendance (V2)	.837**	1				
Availability of equipments (V3)	.819**	.826**	1			
Staff Behaviour (V4)	.742**	.753**	.761**	1		
Expenditure on treatment (V5)	-.678**	-.673**	-.750**	-.825**	1	
Waiting Time (V6)	-.522**	-.552	-.556**	-.657**	.626**	1
Variables	V1	V2	V3	V4	V5	V6

** : $p \leq .001$

Finally, PHQI (Private Hospital Quality Index) was calculated by the simple addition of the values of all the six variables, and the computed index had a theoretical minimum value of 06 and a theoretical maximum value of 30. The response ‘neutral’ was taken as a cutoff point. This means that an index value of above 18 was considered to be an overall level of satisfaction with private hospital service quality in Bhubaneswar.

Cronbach’s alpha has been a well known method of determining the reliability of

questionnaire used for measuring patient satisfaction⁹. Thus, as a part of the reliability analysis, internal consistency of the index (PHQI) was tested by using Cronbach’s alpha statistic in SPSS 15. The computed values of both alpha and standardized alpha (.931 and .935 respectively) indicated that PHQI was in the level of excellence (>.9), as a composite index.

As discussed earlier, correlates of satisfaction level with health facilities is an important matter to look in to. Thus, the computed

index along with the variable of government hospital preference were cross tabulated against selected background characteristics like type of locality, migration status, household size, ownership status, age group, educational level, and source of income etc.

RESULTS

The current study is based on a sample of 180 respondents, out of which around 26 percent were of age less than 35 years and majority of the population were in between 35 years and 54 years of age. As far as educational level was concerned more than 31 percent of the sample was found to be illiterate, while almost equal number of respondents were having high educational level. In this study, migrants outnumbered the natives marginally and almost 70 percent of the samples residents had their own house either legal or illegal as in the case of many slum dwellers. Most of the households were having household size up to four members and almost half of the sampled households had one or two living rooms. As far as construction type was concerned, almost 69 percent of the households were *pucca* (concrete) in nature. In this study, characteristic features like having separate kitchen, separate bathroom, own toilet, using private tap as the main source of drinking water was reported by almost two third of the sampled households. It was found that around 64 percent of the households were using cooking gas as the major fuel and around 63 percent were

purifying the drinking water in some way or the other.

As evident from a number of studies, private health care centres are always preferred more because of a number of factors³⁶. Table 3 reflects the perception of urbanites about different aspects of government health centres in the city. It was found from the survey that around 66 percent of the respondents felt that doctors were available at any time in Government hospitals. The figure cannot be considered good, at least for a state capital. Another issue of concern was sanitary conditions in government hospitals, which was considered to be in good condition, by only half of the respondents. Still bigger problems were availability of required medical equipments and provision of free medicines in government health centres, at least for the needy population. While only 28.4 percent of the respondents were of the opinion that required equipments were available in government hospitals, just above six percent of the respondents reported about availability of free medicines in government hospitals. More than 63 percent of the respondents mentioned about preferring private over government medical service and the figure was obviously very high as the respondents were asked to state their preferences looking at their state of affordability. Moreover the data revealed that 68.8 percent of the respondents perceived medical service in the city to be satisfactory, which of course needed a lot of improvement.

Table 3 Percentage distribution of respondents in the city with respect to their perception regarding government health centres (GHC)

SN	Variable	Percentage	95% CI	N
01	Doctors available at any time in GHC	65.9	59 – 73	176
02	Good sanitary Condition in GHC	50.6	49 – 58	176
03	Free Medicines available in GHC	06.3	03 – 10	176
04	Required Equipments available in GHC	28.4	22 – 35	176
05	Preferring Private over Government Medical Service	63.3	56 – 70	180
06	Medical service in the city satisfactory	68.8	62 – 76	176

Respondents were asked to mention their preferred type of healthcare centre – Private or Government, and the variation was studied across selected background characteristics of the respondents. The computed Chi-square p values suggested that there existed a significant association between the choice of medical centre and two of the explanatory variables, namely migration status (95 percent level of significance) and educational level of the respondents (99 percent level of significance). On an average, looking at the budget/ affordability, 63 percent of the respondents reported their preference for private clinic/ hospital or nursing home, whereas

the rest showed their preference for government hospitals. As far as the type of locality was concerned, as high as 60 percent of the respondents from the slum of main city area reported about preferring government hospitals, whereas in case of all other types of locality, the preference was more for private health centres. Government hospitals were preferred the least by the respondents of good residential areas, which clearly suggest a positive link between economic status and preferring private health centres. This relationship was further assured by the fact that 54 percent of the daily wage earning respondents preferred private health centres, while for the rest, the corresponding figure

was more than 70 percent. It was also found that preferring private health centres was relatively more in case of the natives in comparison with migrants. Interestingly, such preference was found to follow a declining trend with increasing size of the household. While more than 70 percent of the respondents with a household size of four or less members preferred private health centres, about 51 percent did so in case of households with more than four members. Respondents staying in their own houses were found to be slightly ahead of those staying in rented house or quarter provided to the employees, as regard to preferring private health centres to government hospitals. In this study, age was clearly found to be associated with the choice of health centres. As evident from the table,

respondents below 45 years of age were inclined towards private health centres relatively more in comparison to their older counterparts and in fact among those with age 55 years or above, number of respondents preferring government hospitals was more than that preferring private health centres. Another important finding of the survey was that the respondents with high educational level had remarkably higher inclination towards private health centres in comparison to other groups of respondents. Almost 90 percent of highly educated respondents reported about preferring private health centres, while for the rest of the categories, the corresponding figures were little over 50 percent.

Table 4 Percentage distribution of respondents with preferred medical centre against selected background variables

SN	Variable/ Category	Type of Medical Centre		N
		Government	Private	
01	Type of Locality			
	Good Residential	23.3	76.7	30
	Average residential	23.3	76.7	30
	Poor Residential	36.7	63.3	30
	Slum (Main City Area)	60.0	40.0	30
	Slum (Outskirt)	36.7	63.3	30
	Industrial	40.0	60.0	30
02	Migration Status*			
	Migrant	47.3	52.7	93
	Native	25.3	74.7	87
03	Size of the Household			
	Less than Five	29.8	70.2	94
	Five	38.5	61.5	39
	More than Five	48.9	51.1	47
04	Ownership of the House			
	Rented House/ Quarter	40.0	60.0	55
	Own House	35.2	64.8	125
05	Age Group			
	Less than 35 Years	38.3	61.7	47
	35 to 44 Years	28.8	71.3	80
	45 to 54 Years	42.4	57.6	33
	55 Years or more	55.0	45.0	20
06	Educational Level**			
	No Education	49.1	50.9	57
	Low education	47.2	52.8	36
	Moderate education	48.4	51.6	31
	High Education	10.7	89.3	56
07	Source of Income			
	Salary/Pension/Business	29.8	70.2	104
	Daily wage	46.1	53.9	76
	Total	36.7	63.3	180

*: $p < .005$; **: $p < .001$

It was evident from the current analysis that majority of the respondents preferred private health centres. The next issue was how respondents perceived about the quality of such private healthcare centres in the city. As mentioned in the

methodology, the computed PHQI had a theoretical range of 06 to 30 and the respondents with index values greater than 18 were considered to be satisfied with the quality of private hospitals in the city. Following it, the variable was dichotomized in

Analysis of Health Centre Quality

to the categories 'satisfied' and 'not satisfied' and then cross tabulated against different background variables and its summarized form has been presented in Table 5. It was found that 'type of locality', 'size of the household', 'sources of

income', 'educational level of the respondents' and 'migration status' were significantly associated with the variation in the index value and thus, the satisfaction level.

Table 5 Percentage distribution of respondents satisfied with quality of private hospitals in the city against selected background variables

Variable/ Category	Percentage	N	Variable/ Category	Percentage	N
Type of Locality**			Ownership		
Good Residential	100	27	Rented House/ Quarter	88.9	54
Average residential	93.3	30	Own House	72.9	118
Poor Residential	96.6	29	Age Group		
Slum (Main City)	27.6	29	Less than 35 Years	66.0	47
Slum (Outskirt)	55.6	27	35 to 44 Years	83.5	79
Industrial	93.3	30	45 to 54 Years	79.3	29
Migration Status**			55 Years or more	82.4	17
Migrant	69.3	88	Educational Level**		
Native	86.9	84	No Education	41.5	53
Household Size**			Low education	88.6	35
Less than Five	89.1	92	Moderate education	96.7	30
Five	73.7	38	High Education	96.3	54
More than Five	57.1	42	Source of Income**		
Total	77.9	172	Salary/Pension/Business	93.1	101
			Daily wage	56.3	71

** $p \leq .001$

Based on the computed index value it was observed that around 78 percent of the respondents felt satisfied with the quality of private hospitals in the city. As evident from the study, respondents staying in the non-slum areas were found to be highly satisfied with private hospital quality in Bhubaneswar. However, percentage of respondents expressing their satisfaction with private hospital quality in the city was found to be as low as 27.6 percent in case of the slum located in the main city area. It was also found that natives were more satisfied with the facilities compared to the migrants and also those staying in rented house compared to their counterparts staying in their own homes. Percentage of respondents satisfied with private hospital quality was found to be increasing with decrease in the household size and increase in educational level. Not only better educated respondents, but also younger respondents and respondents with salary/ pension/ business as the source of income were more satisfied with the private hospital quality in the city.

DISCUSSION

The composite index used in the study was found to be reliable and valid for analysing the service quality perception, although inclusion of few more indicators could have enhanced its quality. It has

been well proven that people in both developing and industrialized countries prefer private medical service to the public sector¹³. In this study too, majority of the respondents showed their preference towards private health centres, which indicated towards the possible deterioration of service quality in the government health centres in the city. Going in line of a previous study²⁴, where lack of drugs and supplies in the hospital pharmacies were found to be the major problems, in the current study too, urbanites were highly dissatisfied with supply of free medicine and availability of medical equipments in the government hospitals. Opening of modern private health centres and deteriorating image of the government hospitals in the city had in fact, resulted in a higher level of preference in choosing private health centres over the government ones. Regarding the existing variation in choice, it was observed that the preference towards private health centres was relatively higher among natives, younger and educated respondents as well as those with service/ business as the major source of income, which was similar to the findings of a study carried out at Riyadh³⁷, where positive effect of higher income and education was observed on the choice of private outpatient clinic. There is a possibility that better salary offered by those health centres would attract better health manpower,

which along with improved technique and better management system, could increase the gap further.

Although there are questions raised on the quality of private health services in comparison to the expenditure made³⁸, people usually feel satisfied with the overall quality of private health centres²⁴. In this study too, almost 78 percent of the respondents were fairly satisfied with private health centres. With a little bit of variation, many of the earlier studies^{20-21, 23-25} found an increase in the satisfaction with increasing age. However, this study did not find any such significant and straightaway association. In fact, the level of satisfaction was found to be the highest among the respondents in the middle age group (35 – 44 years) and the lowest among the younger respondents (below 35 years). Further, existing literature suggest that the level of satisfaction usually decreases with increasing education^{20,21,24,26} and income level^{20,21,24}, possibly due to a gap between expectation and actual experience. But the current analysis found a completely contradictory picture in this context. Owing to a relatively higher level of affordability, better educated, better employed respondents and those staying in the non-slum localities were found to be more satisfied with the private hospital quality in the city. Probably, private hospital quality has been good enough in the city and could match the expectations of the better off households; but the higher cost was definitely a barrier for the less educated, low income households to afford such services. As a matter of fact, migrants and larger households were found to be considerably dissatisfied with the overall private hospital quality in the city in comparison to their counterparts.

CONCLUSIONS

Relatively small sample size and less number of questions included for the construction of PHQI can be considered as the major limitations of the study. Incorporating more questions on different domains would definitely make the tool more robust. However, one of the major points that emerged out of the current study is that there has been a definite deterioration in the quality of government health centres and with its current quality of services, government hospitals are no more in a state of enjoying the confidence of urbanites. Therefore, there is a need to strengthen such health centres, at least for those from the lower socio-economic strata, who cannot afford to be treated in the so called state of art luxurious private hospitals. Such quality enhancement is also required for functioning of national/ state level health programmes, as these are the government health centres, through which, such programmes are being implemented in India. In the recent time, Bhubaneswar has seen a tremendous increase in

health infrastructure laid by different private organizations. As such, unplanned commercialization of the health care system may raise the question of affordability of available health care services, which is definitely a sort of social injustice to the poor city dwellers of the developing world. Though the respondents were quite satisfied with private hospital quality, there are a lot of gaps to be sealed, in the context of health care delivery by private hospitals in Bhubaneswar. Increasing cost, longer waiting time and manhandling the customers are few of the issues, which need to be looked at by the private health centres. Like other matters, slum dwellers were found to be ill treated, in the context of health care too. Thus, attempts should be made on a priority basis for providing quality and affordable health services to the urban poor living especially in the city slums. In fact, proper implementation of the soon to be launched National Urban Health Mission (NUHM), which has been designed especially for the urban poor, particularly living in the slums would be a vital stride towards it.

REFERENCES

1. Park K. Preventive and Social Medicine. 18th ed. Jabalpur, India: Banarsidas Bhanot Publishers; 2005.
2. Arora R, Neogi S, Misra M. Innovative Ways to Meet Health Challenges in Urban India. Delhi: Public Health Foundation of India; 2011.
3. Bradley E, Hartwig KA, Rowe LA, Cherlin EJ, Pashmani J, Wong R, Dentry T, Wood WE, Abebe A. Hospital quality improvement in Ethiopia: a partnership-mentoring model. *Int J Qual Health Care*. 2008; 20(6):392-9.
4. Jain SK, Gupta G. Measuring Service Quality: SERVQUAL vs. SERVPERF Scales. *Vikalpa*. 2004; 29(2): 25-37.
5. Andaleeb SS. Public and private hospitals in Bangladesh: service quality and predictors of hospital choice. *Health Policy Plan*. 2000; 15(1): 95-102.
6. Petersen MBH. Measuring patient satisfaction: collecting useful data. *J Nurs Qual Assur*. 1988; 2(3): 25-35.
7. Qin H, Prybutok VR. Perceived Service Quality in the Urgent Care Industry. In: Rao M, editor. 2009 SWDSE Proceedings. MS, US: Southwest Decision Science Institute; 2009. p. 548-56. [cited 2010 Dec 22]. Available from: www.swdsi.org/swdsi2009/Papers/9N03.pdf.
8. Donabedian A. Quality assessment and assurance: unity of purpose, diversity of means. *Inquiry*. 1988; 25(1):173-92.

9. Hendriks AAJ, Oort FJ, Vrieling MR, Smets EMA. Reliability and validity of the Satisfaction with Hospital Care Questionnaire. *Int J Qual Health Care*. 2002; 14(6):471-82.
10. Hall JA, Dornan MC. Meta-analysis of satisfaction with medical care: description of research domain and analysis of overall satisfaction levels. *Soc Sci Med*. 1988; 27(6):637-44.
11. Nagarajan KV, Chavan M, Tewoldeberhan TW, Vial PJ, Srivalli VN. SIMCTS: A Simulation Based Approach to Understand and Manage Service Quality. In: *Proceeding of the 10th International Simulation Technology Conference*, Sydney; 2005. p. 109-117. [cited 2010 Dec 22]. Available from: www.citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.124.1870.
12. Durvasula S, Lysonski S, Mehta SC. Testing the Servqual Scale in the Business-to-Business Sector: The Case of Ocean Freight Shipping. *Journal of Services Marketing*. 1999; 13(2):132-50.
13. Pongsupap Y, Van Lerberghe W. Choosing between public and private or between hospital and primary care: responsiveness, patient-centredness and prescribing patterns in outpatient consultations in Bangkok. *Trop Med Int Health*. 2006; 11(1):81-9.
14. Berman PA. Rethinking health care systems: Private health care provision in India. *World Dev*. 1998; 26(8):1463-79.
15. Jung M, Lee KH, Choi M. Perceived Service Quality among Outpatients Visiting Hospitals and Clinics and Their Willingness to Re-utilize the Same Medical Institutions. *J Prev Med Public Health*. 2009; 42(3):151-59.
16. Sofaer S, Crofton C, Goldstein E, Hoy E, Crabb J. What Do Consumers Want to Know about the Quality of Care in Hospitals? *Health Serv Res*. 2005; 40(6, Part 2):2018-36.
17. Boureaux ED, O'Hea EL. Patient Satisfaction in the Emergency Department: A Review of the Literature and Implications for Practice. *J Emerg Med*. 2004; 26(1):13-26.
18. Abd Elaal SAM, Ibrahim YA. The Waiting Time at Emergency Departments at Khartoum State-2005. *Sudan J Public Health*. 2006; 1(2): 122-26.
19. Pitaloka SD, Rizal AM. Patients' Satisfaction in Antenatal Clinic Hospital Universiti Kebangsaan Malaysia. *Malaysian Journal of Community Health*. 2006; 12(1):8-16.
20. Sharifa Ezat WP, Jamsiah M, Malka SA, Azimatun Noor A, Tuti N, Noor Izzah AS. Customers' Satisfaction among Urban and Rural Public Health Clinics in state of Selangor, Malaysia. *Malaysian Journal of Public Health Medicine*. 2010; 10(2):52-67.
21. Hayati IN, Azimatun NA, Rozita H, Sh Ezat WA, Rizal AM. In-Patients' satisfaction in the medical and surgical wards – A comparison between accredited and non accredited hospital in the state of Selangor. *J Community Health*. 2010; 16(1):60-68.
22. Al Qatari G, Haran D. Determinants of users' satisfaction with primary health care settings and services in Saudi Arabia. *Int J Qual Health Care*. 1999; 11(6):523-31.
23. Khatutsky G, Anderson WL, Wiener JM. Personal Care Satisfaction Among Aged and Physically Disabled Medicaid Beneficiaries. *Health Care Financing Review*. 2006; 28(1):69-86.
24. Assefa F, Mosse A, H/Michael Y. Assessment of Clients' Satisfaction with Health Service Deliveries at Jimma University Specialized Hospital. *Ethiop J Health Sci*. 2011; 21(2):101-109.
25. Jaipaul CK, Rosenthal GE. Are Older Patients More Satisfied With Hospital Care Than Younger Patients? *J Gen Intern Med*. 2003; 18(1):23-30.
26. Sahin B, Yilmaz F, Lee KH. Factors affecting inpatient satisfaction: structural equation modeling. *J Med Syst*. 2007; 31(1):9-16.
27. Young GJ, Meterko M, Desai KR. Patient Satisfaction with Hospital Care – Effects of Demographic and Institutional characteristics. *Med Care*. 2000; 38(2):325-34.
28. Dutta, R. Bhubaneswar: Boomtown for Healthcare [Internet]. 2010 [cited 2010 Dec 24]. Available from: <http://www.expresshealthcare.in/201005/market01.shtml>.
29. OSPCB. Environmental Management Plan of Bhubaneswar. Bhubaneswar: Orissa State Pollution Control Board; 2003.
30. Cronin JJ, Taylor SA. SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality. *J Mark*. 1994; 58(1):125-31.
31. McAlexander JH, Kaldenberg DO, Koenig HF. Service quality measurement. *J Health Care Mark*. 1994; 14(3):34-40.

32. Caha H. Service Quality in Private Hospitals in Turkey. *J Econ Soc Res.* 2007; 9(1):55-69.
33. Sohail MS. Service Quality in Hospitals: More Favourable Than You Might Think. *Managing Service Quality.* 2003; 13(3):197-206.
34. WHO. Measuring Hospital performance to improve the quality of care in Europe: A need for clarifying the concepts and defining the main dimensions. Report on a WHO workshop held at Barcelona; 2003 Jan 10-11; Spain. World Health Organization; 2003.
35. Kelly E, Hurst J. Health Care Quality Indicators Project Conceptual Framework Paper. Paris: OECD; 2006. [cited 2010 Mar 16]. Available from: www.oecd.org/dataoecd/1/36/36262363.pdf.
36. Das Gupta M, Chen LC, Krishnan TN, editors. *Health, Poverty and Development in India.* Delhi: Oxford University Press; 1996.
37. Al-Ghanim SA. Factors Influencing the Utilisation of Public and Private Primary Health Care Services in Riyadh City. *JKAU: Econ. & Adm.* 2004; 19(1):3-27.
38. Das J, Hammer J. Money for Nothing: The Dire Straits of Medical Practice in Delhi, India. *Journal of Development Economics.* 2007; 83(1):1-36.