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**AN EMPIRICAL STUDY ON QUALITY OF SERVICE DELIVERY BY  
RURAL HEALTH CARE CENTRES IN COIMBATORE DISTRICT**

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**ABSTRACT**

*A majority of 700 million people live in rural areas where the condition of medical facilities is appalling. Considering the picture of dismal facts there is a urging need of new practices and procedures to ensure that quality and timely healthcare reaches the deprived corners of the villages in India. The government has implemented scores of policies and programs but the success and effectiveness of these programs is questionable due to disparity in the implementation. The government of India has promoted primary and community health centres in all the states and Union territories. In the recent development private health centres also play a major role in rural health. Coimbatore district caters its rural population with primary, community and private health centres. The study aims at the perception of quality of services provided by these health care centres in Coimbatore district. The research data were collected through survey and total of 256 participants completed the questionnaire. The study is descriptive in nature with the sampling method being simple random sampling. T-test, factor analysis, Mean and SD was applied to compare the different health care centres. The result of this empirical study proved that overall quality of services provided by both primary and private health care centres is higher compare to community health care centre. Keywords: Health care centres, Rural, Services, Quality*



## INTRODUCTION

In late 1980s the Government of India launched an initiative to increase the number of primary health centres and subcentres in the country. The Government of Tamil Nadu committed itself to this initiative and expanded its rural health infrastructure with rigorous pace. There was a constant rise in number of primary health centers and subcenters in the state with financial support from the central and state governments and from development partners like DANIDA. The private sector in Tamil Nadu also has expanded rapidly since 1990 and has contributed to the improved health indicators of the state. There have been many ventures of joint public-private partnerships like in Health education campaigns, contracting of diagnostic facilities, financial and logistics support from many private corporate bodies. Improvement in the quality of primary and as well as Private healthcare centres in the developing nations has gained importance in the recent years.

Quality in health care system has been interpreted differently by different researchers. According to the institute of medicine (2001) quality is “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and consistent with current knowledge. Researchers had focused of user perception, standards and provision of care (Boller et.al., 2003, Hulton Mathews and stones, 2000). The concept of quality is multifaceted connoting different meanings to stakeholders such as government, hospital administration, service provider and patients. Studies in developing nations like Sri lanka (Akin and Huchison, 1999), Bangladesh (Andaleed,2000) Nepal

(Lafond 1995) have confirmed the impact of perceived quality of healthcare services on utilization. Obviously the quality is important and demands continuous attention. The current study aims to measure the perception of users availing rural healthcare services in Coimbatore district with a view to provide important information for policy makers to improve the quality of healthcare.

## REVIEW OF LITERATURE

The most accepted tool for measuring quality has been SERVQUAL which was developed by Parasuraman, Zeithaml and Berry, (1985) and has been applied in various businesses including industrial, commercial, noncommercial, and services settings (Dabholkar, Thorpe and Rentz, 1996; Kang and Kostas, 2002, Seock-Jin and Il-Soo, 2006). However, despite its extensive application, SERVQUAL has also been criticized on both theoretical and operational aspects (Babakus and Mangold, 1989; Carman, 1990; Cronin and Taylor, 1992; Redman and Mathews, 1998). The problems linked to measurement have also been cited in the context of hospitals (Reidenbach and Sandifer- Smallwood, 1990).

Some of the research conducted have made an attempt to develop a multi-dimensional scales for measuring the quality of healthcare services in developing countries. Andaleep (2000) investigated five dimensions of quality in his study conducted in Bangladesh; his dimensions are responsiveness, assurance, communication, discipline and bribe money paid to the health staff. Later Baltussen et al (2002) adapted 20 item which was validated and used in Guinea and identified four dimensions of healthcare quality i.e. health personnel and



conduct, adequacy of resources and services, healthcare delivery and financial and physical accessibility. Duong et.al (2004) have also demonstrated the feasibility, reliability and validity of the instrument developed by Hadded, Fournier and Potvin (1998) and identified four dimensions related to healthcare to measure the perceived quality: healthcare delivery, facility, interpersonal aspects of care and access to services.

A study conducted by Sharma and Narang (2011) in North India included the dimensions of 20 item scale developed by Hadded, Fournier and Potvin (1998) and it was relevant to rural India. Few modifications were made to the original scale to reflect Indian context. With 23-item scale was developed and measured the primary health care services and community healthcare services in rural Uttar Pradesh. The findings of the study revealed quality differences in different health care centres. The government of India has promoted primary and community health centres in all the states and Union territories. In the recent development private health centres also play a major role in rural health. Coimbatore district caters its rural population with primary, community and private health centres. The study aims at the perception of quality of services provided by these health care centres in Coimbatore district.

## RESEARCH METHODOLOGY

The present research is of descriptive in nature with the sampling method being Simple Random sampling. For this purpose of data collection a sample of 256 respondents were considered from rural healthcare centres of the Coimbatore district. The Healthcare centres considered

for the study were Primary healthcare, Private healthcare and Community healthcare centres. This research has an applied questionnaire as the research instrument for collecting the data. This questionnaire has about 23 variables of 5 constructs as Healthcare delivery, Interpersonal and medical care, facility, Service and availability of drugs, and financial and physical access to care A five point scaling items was applied ranged from ‘-2’Very unfavourable, ‘-1’unfavorable, ‘0’ neutral, ‘+1’favourable and ‘+2’ very favourable.. The statistical tools used for this current study is factor analysis, t test, mean and standard deviation. The study was conducted in Coimbatore district with 5 CHC, 5 each from private and primary healthcare centres. A sample size of 300 was distributed among these centres . The respondents comprising both Outpatient and Inpatient department were selected ensuring that they had utilized the health care centres within last six months. Before administering the questionnaire, the meaning of the scale was explaining to them. Out of 300 samples, a response rate of 85.33 per cent was obtained resulting in 256 complete questionnaires. The scale was tested for reliability. It had an overall Cronbach’s alpha value of 0.96 that ranged from 0.706 to 0.919 for the subscales. The reliability was highest for ‘interpersonal and medical care’ (0.92) and lowest for ‘financial and physical access to care’ (0.71). The overall mean score was 1.782.

## ANALYSIS

Factor Analysis was employed on the 23-item scale on the basis of principal component extraction by using Varimax rotation converged in sixteen iterations and resulted in five homogeneous sub-scales



with the Eigen values of 4.127, 3.817, 3.798, and 2.440. The total variance explained after rotation was 74.216 per cent with the communalities after extraction ranging from 0.592 to 0.829. SPSS version 16 software was used for performing all statistical analysis. The factors so obtained were named in accordance with the nature of their underlying construct keeping in mind the statements that had higher loading on a specific factor. Subsequently, they were named ‘healthcare delivery,’ ‘interpersonal and Medical care,’ ‘facility,’ ‘Service and availability of drug,’ and ‘financial and physical access to care.’

The first subscale with Cronbach alpha 0.92 included seven items related to ‘healthcare delivery’ (HCD): adequate availability of doctors, good diagnosis, satisfaction over prescriptions, quality of drugs, recovery/ cure, sufficient time to patients, and payment arrangements. The second subscale, ‘interpersonal and Medical care’ (IMC) with Cronbach alpha 0.91 comprised five items: overall reception facility, honesty, good clinical examination, follow-up/monitoring of patients, adequate medical equipment.

The third subscale, ‘facility’ with Cronbach alpha 0.85, included five items: adequacy of rooms, adequate availability of doctors for women, neat and clean hospital premises, clean appearance of staff, and proper disposal of waste. The fourth subscale with Cronbach alpha 0.84 contained three items related to ‘Service and availability of drug’ (SAD): compassion and support, adequate respect to patients, and availability of all drugs. The last subscale, ‘financial and physical access to care’ (FPAC) with Cronbach alpha 0.71, comprised three items: financial feasibility of treatment, ease of obtaining drugs, and easy approachability.

The scale was tested for reliability. It had an overall Cronbach’s alpha value of 0.96 that ranged from 0.706 to 0.919 for the subscales. The reliability was highest for ‘interpersonal and medical care’ (0.92) and lowest for ‘financial and physical access to care’ (0.71). The overall mean score was 1.782

The demographic profile of the respondents is shown in table 1

**Table 1: Demographic Profile of Respondents**

Variables		Number N= 256	Percentage %
Gender	Female	64	25.0
	Male	192	75.0
Literacy	Literate	153	59.6
	Illiterate	103	30.4
Income per Month	Less than Rs. 10,000	46	17.9
	Rs. 10001-30,000	72	28.0
	Greater than 30,000	138	54.0
Age	Below 30 years	114	44.70
	Above 30 Years	141	55.30



The intention of the patients for repeat visit was regressed against the overall quality score as well as scores for different components of quality in order to determine the perceptions among the respondents comparative to demographic characteristics and healthcare centres. So a Linear regression model was employed to study the relationship between intention to repeat visit (dependent variable) at these health centres keeping health care delivery as independent variable. The findings clearly indicate that profile of the respondents and healthcare centres was significantly associated with the perception regarding the quality of service and intention to repeat visit (table 2). Mostly healthcare delivery and financial and physical access to care were seen to be significantly associated with intention to repeat visit and also it impacted the outcome among men. Healthcare delivery and Service and

availability of drug significantly impacted. Among the inpatients department variables like healthcare delivery, interpersonal and medical care, facility and service and availability of drug significantly associated. But in case of outpatient department healthcare delivery and financial and physical access to care were most significant. All the variables except service and availability of drug were significantly associated with income level above 30,000 per month of the respondents. In Primary Health centres, healthcare delivery, service and availability of drug and financial and physical access to care were significantly associated. In case of Private health centres, healthcare delivery, service and availaibility of drug, facility was statistically significant. While in community health centres financial and physical access to care was significant.

Table 2 Components of Perceived Quality that Impact Repeat Visit Relative to Demographic characteristics and Health Centres

	Constant			HCD	IMC	FACILITY	SAD	FPAC
	a	95% CI		B	B	B	B	B
		Lower	Upper					
Overall	<b>0.659</b>	<b>0.615</b>	<b>0.703</b>	<b>0.223*</b>	<b>0.062*</b>	-0.018	-0.013	<b>0.113*</b>
Female	<b>0.857</b>	<b>0.741</b>	<b>0.973</b>	<b>0.146*</b>	-0.034	0.065	<b>-0.141*</b>	0.032
Male	<b>0.642</b>	<b>0.589</b>	<b>0.696</b>	<b>0.281*</b>	0.065	-0.020	-0.031	<b>0.097*</b>
Age<30	<b>0.656</b>	<b>0.586</b>	<b>0.726</b>	0.105	0.085	0.056	-0.015	<b>0.151*</b>
Age>30	<b>0.625</b>	<b>0.563</b>	<b>0.686</b>	<b>0.351*</b>	0.010	-0.021	-0.055	<b>0.074*</b>
OPD	<b>0.608</b>	<b>0.549</b>	<b>0.667</b>	<b>0.250*</b>	0.019	-0.023	0.0001	<b>0.128*</b>
IPD	<b>0.748</b>	<b>0.678</b>	<b>0.819</b>	<b>0.249*</b>	<b>0.154*</b>	<b>0.186*</b>	<b>-0.206*</b>	-0.027
Income<10,000	<b>0.700</b>	<b>0.594</b>	<b>0.807</b>	0.172	-0.061	0.104	<b>-0.160*</b>	<b>0.170*</b>
10001-30,000	<b>0.611</b>	<b>0.526</b>	<b>0.696</b>	<b>0.433*</b>	-0.020	-0.015	0.013	-0.024
>30,000	<b>0.641</b>	<b>0.580</b>	<b>0.701</b>	<b>0.919*</b>	<b>0.173*</b>	<b>-0.118*</b>	0.045	<b>0.159*</b>
Uneducated	<b>0.737</b>	<b>0.684</b>	<b>0.790</b>	<b>0.265*</b>	0.051	0.027	-0.073	0.011
Up to Class 8	<b>0.666</b>	<b>0.515</b>	<b>0.816</b>	0.004	0.179	<b>0.364*</b>	-0.200	0.075
Above Class 8	<b>0.622</b>	<b>0.530</b>	<b>0.714</b>	<b>0.190*</b>	<b>0.207*</b>	-0.068	-0.029	<b>0.322*</b>
Primary HC	<b>0.680</b>	<b>0.622</b>	<b>0.738</b>	<b>0.275*</b>	0.057	-0.019	<b>-0.081*</b>	<b>0.077*</b>
Private HC	<b>0.652</b>	<b>0.587</b>	<b>0.724</b>	<b>0.240*</b>	0.051	<b>0.188*</b>	<b>-0.161*</b>	0.032
Community HC	<b>0.509</b>	<b>0.388</b>	<b>0.629</b>	0.098	-0.030	0.094	0.191	<b>0.158*</b>

\*Statistically significant at 0.05 level



### Perceived Quality of the Health Centres

T-test was conducted to identify differences between primary, private and community health centres. The finding was that the overall quality of healthcare services was perceived to be higher in primary and private health centres than in community health centres. Statistically significant differences were observed on 'healthcare delivery' with low scores being recorded for all the variables for community health centres. Inadequate availability of doctors ( $p= 0.023$ ) and poor quality of drugs ( $p= 0.009$ ) were the most important drawbacks reported at these centres. Furthermore, in comparison to primary and private health centres, poor clinical examination ( $p= 0.043$ ) and inadequate availability of medical equipments ( $p=0.001$ ) were found at the community health centres. However, inadequate availability of doctors for women was perceived at primary health centres (mean score of -0.09) than at community health centres and private health centres. No statistically significant differences were detected for the factor 'service and availability of drugs.' There were statistically significant differences for the subscale 'financial and physical access to care.' It was interesting to observe that patients perceived it easier to obtain drugs and approach the primary health centres, private healthcare centres and found the financial feasibility to be low in the community health centres.

### DISCUSSIONS AND CONCLUSION

The study observed the quality of healthcare centers in rural Coimbatore district, Tamil Nadu in India at 23-item scale. The mean score were positive for all

the factors being high to Interpersonal and medical care (0.095) and Financial and physical access to care (0.820). The mean score was low to health care delivery (0.414) and very low for service and availability of drug (0.295) and facility (0.156).

With improved income and education, respondent's expectation has been increased. To supplement that financial and physical access was stated important than delivery, facilities available, interpersonal and medical care due to their enhanced economic status. However, it was observed that respondents with less education did not considered financial and physical access to centers and they are willing to travel for treatment. So overall this suggests that government has to take efforts for the people in rural India to provide better quality of service. (Bhandari,2006). In regard to Inpatients financial and physical access becomes unimportant while the other services considered great significance. In case of outpatients, financial and physical access, availability of doctors providing with sufficient time and satisfaction is important than other factors, Service providers should understand this clear picture and provide them quality service.

Overall the quality of service is higher in primary and private health centres when compared to community health centres. Inadequate availability of doctors and medical equipment, poor clinical examination, poor quality of drugs were the important drawbacks of community health centres,. Therefore proper team of medical doctors comprising of surgeon, gynecologist, general physician and pediatrician with paramedical and other staff should be in charge for community healthcare centres. The inadequate



availability of doctors for women were also reported in primary healthcare centres as there is no provision for gynecologists available in these centres. Private healthcare centres it was noted that interpersonal and medical care and financial and physical access should be taken utmost care, though availability of doctors, facilities and delivery is been properly carried out in these private centres, there should be interpersonal care for the respondents.

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