QUALITY OF CARE IN RHEUMATOID ARTHRITIS AT VAIDYARATNAM AYURVEDA COLLEGE HOSPITAL, OLLUR, THRISSUR, KERALA

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Abstract: Rheumatoid Arthritis (RA) is an autoimmune systemic, inflammatory, symmetrical polyarthritis. RA is a major cause of disability in India affecting about 7 million people with a prevalence of 0 .75%. RA is well managed in the IPD of Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala. Quality of service in hospitals should be directed to patient satisfaction, this is to maintain patient loyalty. The objective of this study is to identify the gaps between customer expectations of a service and their perceptions of service in Rheumatoid Arthritis care at Vaidyaratnam Ayurveda College Hospital. A hospital based cross-sectional study was conducted using SERVQUAL as the survey instrument. The comparison of perceived expectation (E) of a service with perceived performance (P), giving rise to Service Quality (SQ=P-E). The duration of the study was 90 days including report writing. Gap analysis was done using independent paired t test. There is no service quality gaps in all the five dimensions i.e. Tangibles, Reliability, Responsiveness, Assurance, Empathy. From the results it can be assessed that Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala is rendering an overall god quality of service in RA care.

Index Terms: *Rheumatoid Arthritis (RA), quality of service, SERVQUAL, expectation, perception, patient centered care*.

I. INTRODUCTION

Rheumatoid Arthritis (RA) is a chronic systemic disease that affects the joints, connective tissues, muscle, tendons, and fibrous tissue. RA is a chronic disabling condition often causing pain and deformity. The prevalence varies between 0.3% and 1% and is more common in women and in developed countries. Within 10 years on onset, at least 50% of patients in developed countries are unable to hold down a full-time job (1). About 7 million people in India are affected with R A with prevalence of 0 .75%, causing major disabilities similar to developed countries (2)

Ayurvedic management yields results when applied to chronic diseases like RA. In Vaidyaratnam Ayurveda College, Ollur, Thrisuur, Kerala, RA patients are managed effectively in concerned departments. Present-day therapeutic care is affected by two ideal models: evidence-based medicine and patient-centered care. That comes from the biopsychosocial perspective (3). The patient centered care can be defined as providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions (4). The important feature of the service process is the degree of customer influence on the service process. The unique characteristic of the service package is that it consists of both tangible and intangible aspects. The service package is described by the degree of customization found in those tangible and intangible elements (5).

Service quality can be defined as the difference between customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (6). The research on measuring service quality is focused primarily on how to meet or exceed the external customer's expectations, and is viewed service quality as a measure of how the delivered service level matches consumer's expectations. In this study SERVQUAL instrument has been planned for service quality analysis (6) **.** SERVQUAL, later called RATER, is a quality management framework. SERVQUAL was developed in the mid-1980s by Zeithaml, Parasuraman & Berry to measure quality in the service sector. The SERVQUAL authors identified five factors - reliability, assurance, tangibles, empathy and responsiveness - that create the acronym RATER (7).

As per Center Council for Indian Systems of Medicine (CCIM), NABH accreditation is now made mandatory in all Hospitals attached to Ayurveda Medical Colleges. Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala is looking forward for NABH accreditation. The gap analysis in service quality will be useful for the accreditation procedure. The data collected by giving questionnaire to RA patients (in patients) of the Vaidyaratnam Ayurveda College Hospital.

Review of literature

Historically, scholars have treated service quality as very difficult to define and measure, due to the inherent intangible nature of services, which are often experienced subjectively (8). As the health care sector in India gets more competitive, health care practitioners and academic researchers are increasingly interested in exploring how patients perceive the quality before building up their satisfaction levels and generating behavioral intentions. Hospitals today are increasingly realizing the need to focus on service quality as a measure to improve their competitive position. Customer based determinants and perceptions of service quality, therefore, play an important role when choosing a hospital (9). Quality is considered as one of the important factors in differentiation and excellence of services and it is a basis of competitive advantage so that its understanding, measuring, and developing it are important challenges for all health services organizations (10). Service quality (SQ), in its contemporary conceptualization, is a comparison of perceived expectations (E) of a service with perceived performance (P), giving rise to the equation SQ=P-E (11).

Always there exists an important question: why should service quality be measured? Measurement allows for comparison before and after changes, for the location of quality related problems and for the establishment of clear standards for service delivery.

In additional to being a measurement model, SERVQUAL is also a management model. The SERVQUAL authors identified five Gaps that may cause customers to experience poor service quality. Reliability, assurance, tangibles, empathy and responsiveness - that create the acronym RATER. SERVEQUAL questionnaire (6) includes 22 questions under 5 factors

Dimension	No. of Items in Questionnaire	Definition
Reliability	5	The ability to perform the promised service dependably and accurately
Assurance	4	The knowledge and courtesy of employees and their ability to convey trust and confidence
Tangibles	4	The appearance of physical facilities, equipment, personnel and communication materials
Empathy	5	The provision of caring, individualized attention to customer
Responsiveness	4	The willingness to help customers and to provide prompt service

As it is well known, quality is accepted as being an important factor that determines the demand of goods and services as well as a main indicator that affects the competitive advantage of firms (5). There is a rich collection of research literature on service performance and service quality. The term of quality in the service sector seems to be different from the term in the goods market.

Consumer satisfaction appears to be a major device in order to take critical decisions in the health care services (12). Therefore, service providers, as a matter of fact, take the satisfaction of customers into account as a main goal of the strategies of their firms (13). There are many studies on measuring service quality in the health care sector that use satisfaction of consumers.

The Objectives of the study were to (1) assess the RA patients expectations on service quality at Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala, (2) to assess the patients perceptions on service quality at Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala and (3) to find out service gap in service quality at Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala.

II. METHODOLOGY

A hospital based cross-sectional study was conducted using SERVQUAL as the survey instrument, at Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala. In – patients in the hospital ward fulfilling 2010 ACR/EULAR criteria for Rheumatoid Arthritis (14) and willing to participate in the study during the period of data collection from July 2019 to September 2019 were recruited into the study consecutively after obtaining written informed consent. A total of 50 patients were given questionnaire at the time of admission (expectations - E) and at the time of discharge (Perception - P). Sequential sampling technique was used. Data collected by personal interview using SERVEQUAL questionnaire (6). Appropriate treatments were given during the period. The service gap between patient's expectations and patient's perceptions on services were analysed using paired t test.

III. RESULTS AND ANALYSIS

Table.1 Age descriptive

		Statistic	S.E
Mean		57.72	1.377
95% Confidence Interval for Mean	**Lower Bound**	54.95	
	Upper Bound	60.49	
5% Trimmed Mean		57.53	
Median		55.00	
Variance		94.818	
Std. Deviation		9.737	
Minimum		40	
Maximum		81	
Range		41	
Interquartile Range		16	
Skewness		.345	.337
Kurtosis		-.637	.662

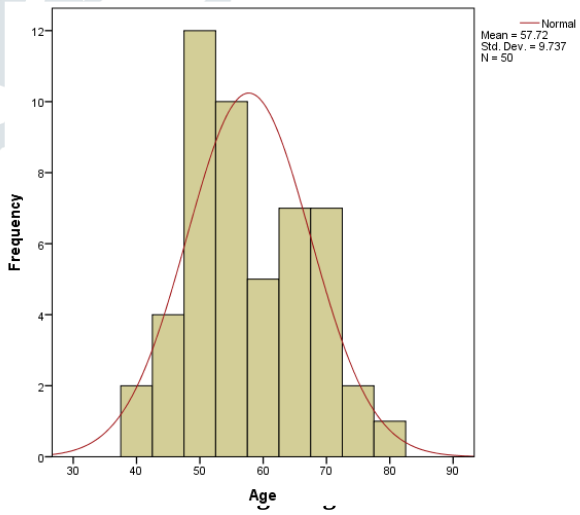

Fig. 1 Age distribution

Table.2 Distribution according to age group

Age group	Frequency	Percent
less than 50	8	16.0
50-59	22	44.0
60-69	12	24.0
70 and above	8	16.0
Total	50	100.0

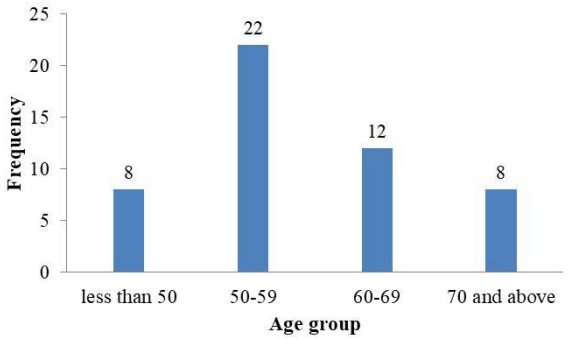

Fig. 2 Distribution according to age group

Table.3 Distribution according to gender

Gender	Frequency	Percent
Male	36	72.0
Female	14	28.0
Total	50	100.0

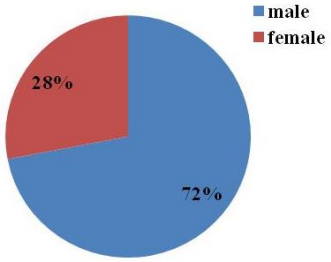

Fig. 3 Distribution according to gender

Table.4 Distribution according to marital status

Status	Frequency	Percent
Married	43	86.0
Widow / widower	7	14.0
Total	50	100.0

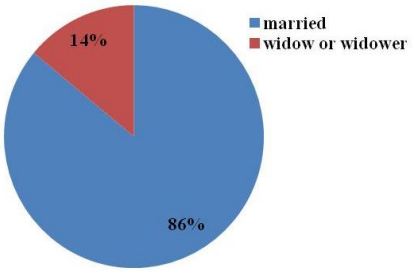

Fig. 4 Distribution according to marital status

Table.5 Distribution according to area of living

Area	Frequency	Percent
Rural	29	58.0
Urban	21	42.0
Total	50	100.0

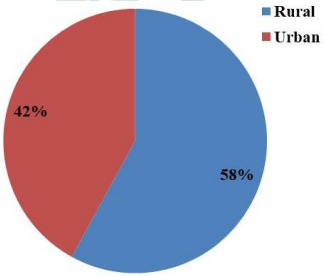

Fig. 5 Distribution according to area of living

Table.6 Distribution according to income

Income/month	Frequency	Percent
10000-20000	14	28.0
20000-30000	15	30.0
30000-40000	11	22.0
above 40000	10	20.0
Total	50	100.0

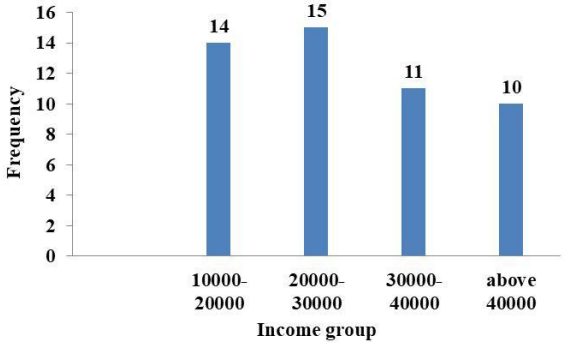

Fig.6 Distribution according to income

The study was conducted to find out the service quality gap in RA care in Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala. As per 2010 ACR/EULAR classification criteria for Rheumatoid Arthritis patient selected having scored =>6. A total of 50 patients were given questionnaire at the time of admission (expectations - E) and at the time of discharge (Perception - P). The data collected were analysed as follows. The mean age of the participants was 57.72 with SD of 9.737 and 44 % belongs

to 50-59 age group. Out of 50 participants 72 % of the participants were males. 30 % of the participants belong to 20000-30000 income groups and 28 % belongs to 10000-20000 income groups. Of the participants 86 % were married and 58 % are from rural area.

Table.7 Overall SERVQUAL dimensions – Expectation, Perception and Service gap

Dimensions	Expectation (E)	Perception (P)	Service gap score
Tangibles	25.06 ± 2.75	26.2 ± 2.37	1.14 ± 2.93
Reliability	31.18 ± 3.21	32.2 ± 2.66	1.02 ± 2.98
Responsiveness	11.04 ± 7.38	8.28 ± 3.59	-2.76 ± 6.24
Assurance	22.4 ± 6.23	24.12 ± 5.86	1.72 ± 6.98
Empathy	12.88 ± 8.32	8.84 ± 3.70	4.04 ± 7.22

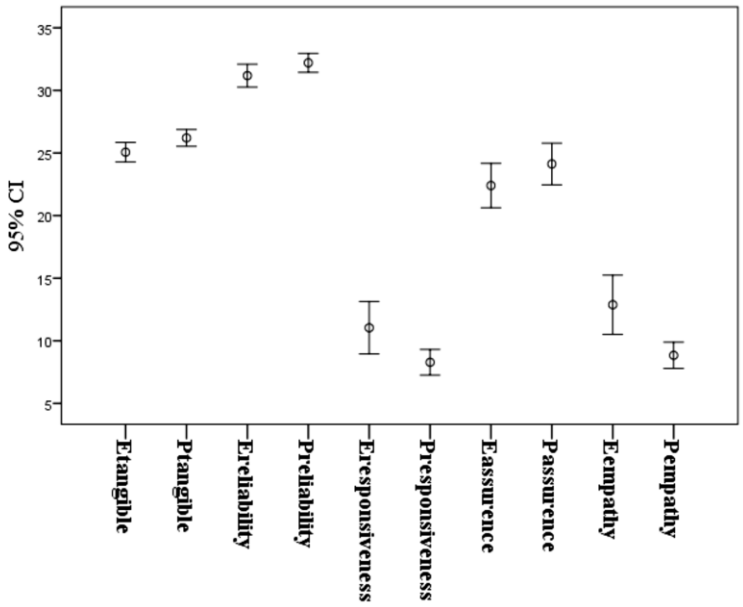

Fig. 7 Overall SERVQUAL dimensions – Expectation, Perception (error bar)

Table.8 Overall SERVQUAL dimensions – Paired t test

Dimensions	Paired Differences					t	df	Sig.
	Mean	SD	SE	95% CI difference Lower	Upper			
Tangibles P- E	-1.140	2.927	0.414	-1.972	-0.307	-2.753	49	0.008
Reliability P- E	-1.020	2.979	0.421	-1.866	-0.173	-2.421	49	0.019
Responsiveness P- E	2.760	6.238	0.882	0.986	4.533	3.128	49	0.003
Assurance P- E	-1.720	6.975	0.986	-3.702	0.262	-1.744	49	0.087
Empathy P- E	4.040	7.222	1.021	1.987	6.092	3.955	49	.000

The mean **Tangible** score in Expectation was 25.06 ± 2.75 and in Perception was 26.2 ± 2.37. Paired t test has been conducted to find out the significance. It is seen that the difference in means 1.14 ± 0.414 was found to be significant p = 0.008. (t (49) = -2.753, p =.008). The mean **Reliability** score in Expectation was 31.18 ± 3.21and in Perception was 32.2 ± 2.66. Paired t test has been conducted to find out the significance. It is seen that the difference in means 1.02 ± 0.421 was found to be significant p = 0.019. (t (49) = -2.421, p =.019). The mean **Responsiveness** score in Expectation was 11.04 ± 7.38 and in Perception was 8.28 ± 3.59. Paired t test has been conducted to find out the significance. It is seen that the difference in means 2.76 ± 0.882 was found to be significant p = 0.003. (t (49) = 3.128, p =.003). The mean **Assurance** score in Expectation was 22.4 ± 6.23 and in Perception was 24.12 ± 5.86. Paired t test has been conducted to find out the significance. It is seen that the difference in means -1.72 ± 0.986 was found to be significant p = <.005 (t (49) = -1.744, p =.0.087). The mean **Empathy** score in Expectation was 12.88 ± 8.32 and in Perception was 8.84 ± 3.70. Paired t test has been conducted to find out the significance. It is seen that the difference in means 4.040 ± 1.021 was found to be significant p = <.005. (t (49) = 3.955, p = <.005).

I. DISCUSSION AND CONCLUSION

Different sstudies have shown that patients and healthcare providers have different perspectives regarding quality of care (15). There is no quality gap in all five dimensions of the SERVQUAL survey instrument, with dimensions of 'Empathy' and 'Responsiveness' being significantly high with SERVQUAL score of (-) 4.04 and (-) 2.76. The SERVQUAL score came as negative because of the fact that negative statements are given for Empathy and Responsiveness. The other dimensions Tangibles, Reliability and Assurance are also having a good SERVQUAL score of 1.14, 1.02 and 1.72 respectively.

There is no service quality gaps in all the five dimensions i.e. Tangibles, Reliability, Responsiveness, Assurance, Empathy. From the results it can be assessed that Vaidyaratnam Ayurveda College Hospital, Ollur, Thrissur, Kerala is rendering an overall good quality of service in RA care.

RA is a chronic systemic disorder. There is much need for improvement in applying the chronic-care model to the treatment and prevention of RA in all of the five dimensions. Each hospital must develop its own priorities for improving RA care and comparison with other hospitals can help identify strengths as well as weaknesses. In this regard the dimensions Tangibles, Reliability and Assurance are also have to be improved with the other two dimensions Responsiveness and Empathy.

Suggestions

As RA is a chronic systemic disorder, for people with RA have emotional, psychological or mental health problems. So:

a need for increased resource allocation for psychological services to RA,
a need for the provision of RA specific psychological services/integrated service provision,
Training to all the staff: clinical and non-clinical - in relation to their type of job.

Limitations of the study

The present study has been conducted in an Ayurveda Medical College hospital in town with 50 samples. It may not be possible to generalize the results obtained due to its uniqueness. The survey has been conducted among the inpatients admitted for RA care at the time of the study. Further study with larger samples, in multi centre including outpatients has to be conducted to confirm the results.

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