Patient Safety & Quality Improvement Journal
http://psj.mums.ac.ir
PSQI

Customer Quality and Rheumatoid Arthritis in the Iranian Patient's Perspective: A Cross-Sectional Study

Azad Shokri[1] (PhD Candidate); Mohammad Hossein Yarmohammadian[2] (PhD); Payman Mottaghi[3] (PhD); Saeed Karimi[2] (PhD); Najmeh Bahman ziari[4] (MSc); Kamal Gholipour[5]* (PhD Candidate); Jafar Sadegh Tabrizi[6] (PhD)

1. Hospital Management Research Center, Iran University of Medical Sciences, Tehran, Iran.
2. Health Management & Economics Research Center (HMERC), Isfahan University of Medical Sciences, Isfahan, Iran.
3. Department of Rheumatology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.
4. Faculty of Health Service Management and Medical Information, Isfahan University of Medical Science, Isfahan, Iran.
5. Iranian Center of Excellence in Health Management, Department of Health Services Management, Faculty of Management and Medical Informatics, Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran.
6. Department of Health Services Management, Faculty of Management and Medical Informatics, Tabriz Health Service Management Research Center , Tabriz University of Medical Sciences, Tabriz, Iran

ARTICLEINFO

Article type:
Original Article

Article history:
Received: 15- May-2014
Accepted: 10- June-2014

Keywords:
Customer quality
Iran
Patients' Perspective
Rheumatoid Arthritis
Self-management strategies

ABSTRACT

Introduction: Customer Quality (CQ) refers to customer's characteristics and is related to the consumer knowledge, skills and self confidence in active participating in care process and life style improvement. This study was aimed to assess customer quality among people with Rheumatoid Arthritis (RA) according to the patients' perspective.

Materials and Methods: This cross-sectional study was carried out on 170 patients who received care from specialist clinics of Isfahan University of Medical Sciences in 2013. Customer Quality was assessed using Comprehensive Quality Measurement in Health care questionnaire (CQMH_CQ). Questionnaire content validity was reviewed and confirmed by 10 experts and its reliability was confirmed based on Chronbach's alpha index (α=0.803). SPSS-17 statistical software was used to analyze the data. Independent Samples T test and ANOVA were conducted to compare CQ score between categorical variables.

Results: The average CQ score was 70.25 (13.20). According to self-reported customer quality score, all participants achieved the scores at the level of stage one. Some (9.2%) of participants didn't reach the action stage (stag three), then 90.8% took action in facing with health related problem and finally only 19.8% of participant achieved highest level of Self-management. Customer Quality score of employed patients (P=0.026) and patient who had active disease (P =0.030) were significantly. Customer quality scores of illiterate participants were lower than that of the educated (P= 0.001).

Conclusion: According to overall score of customer quality, findings indicate the necessity of patients' involvement in care process and self-thought behavior-change skills for ongoing self-management and enhancing their self care abilities in daily life.

▶ ***Please cite this paper as*:**
Shokri A, Yarmohammadian MH, Mottaghi P, Karimi S, Bahman ziari N, Gholipour K, et al. Customer Quality and Rheumatoid Arthritis in the Iranian Patient's Perspective: ACross-Sectional Study. Patient Saf Qual Improv. 2014; 2(3):110-115.

Introduction

Rheumatoid Arthritis (RA) is a chronic autoimmune disorder characterized by inflammation of synovial tissues leading to joint swelling, stiffness, pain, and progressive joint destruction with an unpredictable course and wide severities (1-3). RA has a prevalence of 1% in the world, with a higher prevalence among the

Corresponding Author: Kamal Gholipour, Iranian Center of Excellence in Health Management, Department of Health Services Management, Faculty of Management and Medical Informatics, Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran. Email: gholipourk@tbzmed.ac.ir

elderly and women (3-5). In addition to affecting patients' quality of life and life expectancy, RA has a considerable financial impact on patients' families, health care insurance, and society (4,6). Unfortunately, available treatment options do not completely treat RA, and the basic aim of treatment is to manage and control the effects of the disease on patients at the minimum level (7).

Consequently, these patients become dependent on a wide variety of health care services for the long-term (4), and the increasing complexity of health services, treatment options, and care pathways require a more knowledgeable and participative customer to achieve the most satisfactory outcomes (8).

The American Institute of Medicine defines quality of care as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (9). Quality of health care is described in two dimensions: service and technical quality. Technical quality refers to the degree in which the delivered care meets scientific/ professional standards and is likely to optimize the benefits and minimize the risks. Service quality is primarily related to how the received care is perceived, and it is influenced by the physical, social, and cultural contexts (10,11). Technical Quality and Service Quality do not completely encompass the dimensions of quality in health care; thus, by just considering the two, the essential role of user features in the quality of services and its effect on output and impact of service might be ignored. In a model provided by Tabriz, quality in health services assessment is based on three dimensions: service, technical, and customer quality (10). Customer Quality refers to the attributes of patients or health care consumers that enable them to cooperate more effectively with health care delivery systems in order to manage their own conditions successfully (11).

Studies indicate that self-management strategies are important for patients with Rheumatoid Arthritis (RA) to cope with the consequences of their disease (2).

Informed customer involvement is seen as a manner where the inappropriate use of health services and errors are reduced. Thus, these valuable and unique capabilities of health care must be applied by the patients, through quality improvement programs, to promote people's dignity, autonomy, confidence, and engagement in the health care processes (12,13). In the previous models, the critical role of the characteristics of the patient or customer has been ignored. Customer Quality relates to the knowledge, skill, and confidence of the health care user to be actively involved in the health care team in order to make the right decisions, plan appropriate activities, and apply proper changes to their environment and health-related behavior (10).

Zuidgeest holds the opinion that the CQ-index for RA is a reliable instrument for quality assessment from the patients' perspective (14). The attempt is made here to assess customer quality for patients with Rheumatoid Arthritis based on their perspectives.

Materials and Methods

This cross-sectional descriptive study was undertaken on 170 RA patients who received care from the specialist clinics of Isfahan University of Medical Sciences in 2013. Simple random sampling was used to select participants who had visited clinics of rheumatology from January to April 2013. The study design and procedure were previously approved by the Ethics Committee of Isfahan University of Medical Sciences.

Customer Quality was measured through the CQMH_CQ (Comprehensive Quality Measurement in Health care) questionnaire. The face validity of the study questionnaires were reviewed and confirmed by 10 experts in Isfahan and Tabriz medical science universities, and its reliability was confirmed using Cronbach's alpha index ($\alpha = 0.803$), according to a pilot study on a group of 30 patients .

This instrument measures the patient's empowerment in four important stages: 1) believing in his/her role, 2) having the necessary confidence and knowledge to take action, 3) taking actions in maintaining and improving his/her health, and 4) staying on course even under stress. Customer Quality Raw scores were calculated by adding up the responses to all 19 questions designed in a Likert scale: (Strongly Disagree = 1), (Disagree = 2), (Agree = 3), (Strongly Agree = 4) and (Not Applicable = 5). Any responses of (N/A) or (Missing Value) up to a maximum of three responses for each person were interpolated to apply the average raw score for each missing or N/A item, and respondents who had more than three missing or N/A items were omitted. In the end, eight participants were excluded, and data related to the remaining 162 subjects were analyzed. Raw scores were normalized to zero-100, to compute the active CQ scores. According to table 1, active CQ scores were recorded as indicated cut-off points to identify Customer Quality scores for each of the four stages of self-management care (10, 15). (Table1)

Table1: Customer Quality scores cut-off points for self-care

Self-management stage	Customer Quality scores
One	19 or below
Two	19.1 to 50
Three	50.1 to 83
Four	83.1 and above

Frequencies and percentages extracted from the obtained data were used to describe the demographic information of people with RA. The obtained means (and standard deviations) were used to report CQ scores. Independent Samples Test, ANOVA, and Tukey HSD Post Hoc Test were used to compare CQ

score between categorical variables. The data were analyzed using the SPSS-17 statistical software.

P values≤ 0.05 were considered as statistically significant.

Result

The study results have indicated that more than 82.7% of participants were female. Most of the participants were over 50 years old (41.4%). 14.2% of participates were illiterate and only 22.6% had tertiary education. The majority of participants (73.5%) assessed their response to treatment as appropriate. 75.9% of the subjects were reported to have some kind of complication (Table 2).

Only 37.6% of the participants suffered from active disease at time of study. About one third of the participants (32.7%) had joint complications and 43.8% had arthritis. Findings indicate that 41.4% of the patients suffered from osteoporosis, and 35.8% of the participants had ophthalmic problems. All of the participants were covered by health insurance. (Table2)

Table 2: Self-reported characteristics of study participants

Characteristics		No	%
Sex	Male	28	17.3
	Female	134	82.7
Age (years)	Under 30 years	20	12.3
	30 – 40 years	31	19.1
	40 – 50 years	44	27.2
	Over 50 years	67	41.4
Education	Illiterate	23	14.2
	Non-academic	104	64.2
	Tertiary	35	22.6
Response to treat	Poor	43	26.5
	Well	119	73.5
Complication	Yes	123	75.9
	No	39	24.1
Occupation	Unemployed	105	64.8
	Worker	57	35.2

According to self-reported Customer Quality scores, 9.2% of the participants did not reach the action stage, only 19.8% of the participants achieved the highest level of the self-management stage, and none of them stayed in the stage of believing in the importance of their role.

Most of the participants (90.8%), consisting of stages three and four patients, reported taking action while faced with RA-related health problems, and only 19.8% of them maintained the course of action even under stress and financial constraints (Table 3).

Table 3: Self-reported Customer Quality scores of study participants

Self-management stage	No	%
believing the patients' role is important	--	--
having the confidence and knowledge necessary to take action	15	9.2
actually taking action to maintain and improve one's health	115	71.0
staying the course even under stress and financial constraints	32	19.8

The study results indicate that Customer Quality scores of illiterate participants were lower than that of the educated (P= 0.001).

The Customer Quality score of employed patients was higher than unemployed patients, and this difference was statistically significant (P=0.026).

Similarly, participants who had active disease reported higher CQ scores than those without active disease (P= 0.030).

It is noteworthy that the study findings reported higher Customer Quality scores in men than women, but this difference was not statistically significant.

Moreover, participants who declared a good response to treatment and evaluated their disease control as good had better Customer Quality scores, which were not found to be of statistical significance.

There was no statistically significant relationship between Customer Quality score and other demographic factors of participants (Table 4).

Table 4: Mean Customer Quality score and proportion of self-management in terms of demographic

Characteristics		Customer Quality Score				
		Mean (SD)	Stage2 No (%)	Stage3 No (%)	Stage4 No (%)	P
Total CQ score		70.25 (13.20)	15 (9.3%)	115 (71.0%)	32 (19.8%)	
Demographics						
Sex	Male	72.70 (11.97)	2 (7.1)	20 (71.4)	6 (21.4)	.281
	Female	69.73 (13.43)	13 (9.7)	95 (70.9)	26 (19.4)	
Age	Under 30 years	71.04 (14.36)	3 (15.0%)	13 (65.0%)	4 (20.0%)	.463
	30 – 40 years	68.21 (15.15)	5 (16.1%)	20 (64.5%)	6 (19.4%)	
	40 – 50 years	72.67 (13.50)	3 (6.8%)	29 (65.9%)	12 (27.3%)	
	Over 50 years	69.36 (11.65)	4 (6.0%)	53 (79.1%)	10 (14.9%)	
Education	Illiterate	60.91 (11.20)	5 (21.7%)	17(73.9%)	1 (4.3%)	.001
	Non-academic	71.84 (12.68)	6 (5.8%)	72 (69.2%)	26 (25.0%)	
	Tertiary	71.65 (13.71)	4 (11.4%)	26 (74.3%)	5 (14.3%)	
Occupation	Home maker	68.54 (12.92)	10 (9.5%)	79 (75.2%)	16 (15.2%)	.026
	Worker	73.38 (13.26)	5 (8.8%)	36 (63.2%)	16 (28.1%)	
Response to treat	Poor	68.54 (13.23)	5 (11.6%)	32 (74.4%)	6 (14.0%)	.325
	Well	70.86 (13.19)	10 (8.4%)	83 (69.7%)	26 (21.8%)	
Complication	Yes	70.47 (13.32)	12 (9.8%)	87 (70.7%)	24 (19.5%)	.703
	No	69.54 (12.96)	3 (7.7%)	28 (71.8%)	8 (20.5%)	
Continuous care by specialist	Yes	70.27 (13.07)	13 (8.8)	107 (72.8)	27 (18.4)	.953
	No	70.06 (14.90)	2 (13.3)	8 (53.3)	5 (33.3)	
Self-evaluation of disease control	Poor	67.48 (14.51)	7 (16.7)	28 (66.7)	7 (16.7)	.115
	Well	71.21(12.64)	8 (6.7)	87 (72.5)	25 (20.8)	
Active disease	Yes	67.18 (13.20)	8 (8)	69 (69)	23 (23)	.030
	No	71.90 (12.98)	7 (12.1)	43 (74.1)	8 (13.8)	

Discussion

The customer quality based on the RA patients' perspectives in the city of Isfahan was found to be moderate with an average score of 70.25 (±13.20). A great part of the participants (71%) reported taking action while faced with RA-related health problems, and only 19.8% of patients were able to maintain needed actions even under stress and financial constraints.

There is significant statistical correlation between educational levels, active disease, and occupation with CQ score in this study. There is a direct relation between education and better self-management with respect to CQ score. It is possible that the higher education level motivates the RA patients to get information about their illness.

The participants with inactive disease may have better CQ scores compared to participants with active disease [71.90vs. 67.18]. Brus related this to the increased anxiety and depression in patients with active disease (16). According to study results, participants who were employed had better Customer Quality scores than unemployed [73.38vs. 68.54]. Having a job had a significant effect on improving some aspects in RA patients' quality of life in some studies (17,18).

Based on our findings, gender and age did not affect Customer Quality Score, despite the fact that these two parameters were influential factors in mortalities among RA patients (19,20) and played an important role in mediating the disease outcomes (19). This study did not find any relation between response to treatment/ complication/ continuous care by specialist and Customer Quality Score. The risk of complications increases parallel to the increase in age (21), and based on BSR guidelines on the standards of care for RA patients, continuous care by specialists is important to improve active disease and reduce pain (22).

Considering the chronic nature of RA and the small proportion of the patients with the ability to manage their health under stressful conditions and financial barriers which have a central role in their care and disease management, self-management education is essential for empowering patients and is a basic ability for patients to effectively manage their diseases and make appropriate decisions (12,23). Koehn and Newman defined self-management as 'the individual's ability to manage the symptoms, physical, psychological consequences, and life-style changes inherent in living with a chronic condition (20,24).

The American College of Rheumatology has developed guidelines for the management of RA, by focusing on education in self-management which is an essential component of optimal longitudinal treatment.

The ACG Subcommittee on Osteoarthritis recommended that self-management education become an integral part of the treatment program for osteoarthritis patients (25). A meta-analysis study by Warsi (26) and Keefe (27) demonstrated that arthritis self-management education programs lead to small but significant reductions in pain and disability. These programs enable RA patients to make informed decisions in their treatment by focusing on self-management abilities and patient empowerment.

Education and cognitive–behavioral interventions, such as the Arthritis Self-Management Program, can improve health status and decrease health care utilization (24).

By enhancing knowledge, skills, self-confidence (self-efficacy), and educational programs, we can inform and empower individuals to self-manage their health and participate in decisions about their care (28).

Intervention strategies that enable patients to make decisions about their goals, therapeutic options and self-care behaviors, and feel responsible for RA care are effective in helping patients reach for an appropriate caring program. According to a study by Tabrizi one of the most important ways to empower women and increase their participation in the health services and decision-making is providing pregnant women with an active role in their own care process (10). In another study, the same author suggests designing programs for health care providers and patients with Type 2 diabetes to improve their self-confidence abilities and health outcomes (29).

Vahidi revealed that customer participation in the care process and focus on the patient role in care delivery, alongside improving the quality of delivered care, can be used as patient education activities (12,23).

This study has a limitation, and that is the dependence of the results on the accuracy of patients' reports. This might render our results susceptible to response bias.

Conclusion

Rheumatoid Arthritis is a chronic illness that requires continuous care, and patient self-management education may be an effective way to improve customer quality.

Moreover, the patient's ability in self-management as a daily task and instructions for behavior change skills for ongoing self-management can reduce the risk of long-term and acute complications in all aspects of life.

Acknowledgement

We would like to thank all the experts in the Department of Health Services Management for their useful comments, and a special thank you to all RA patients for their patience and participation in this study.

References

1- Salesi M, Mottaghi P, Karimifar M, Farajzadegan Z. Intravenous pamidronate for refractory rheumatoid arthritis. Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences. 2012 May;17(5):422-7.

2- Meesters J, de Boer I, van den Berg M, Fiocco M, Vliet Vlieland T. Unmet information needs about the delivery of rheumatology health care services: a survey among patients with rheumatoid arthritis. Patient education and counseling. 2011 Nov;85(2):299-303.

3- Khanna R, Smith MJ. Utilization and costs of medical services and prescription medications for rheumatoid arthritis among recipients covered by a state Medicaid program: a retrospective, cross-sectional, descriptive, database analysis. Clinical therapeutics. 2007 Nov;29(11):2456-67.

4- Jacobi CE, Boshuizen HC, Rupp I, Dinant HJ, van den Bos GA. Quality of rheumatoid arthritis care: the patient's perspective. International journal for quality in health care : journal of the International Society for Quality in Health Care / ISQua. 2004 Feb;16(1):73-81.

5- Salesi M, Farajzadegan Z, Karimifar M, Mottaghi P, Sayed Bonakdar Z, Karimzadeh H. Disease activity index and its association with serum concentration of anti-cyclic citrullinated peptide 1 (anti-CCP1) in patients with rheumatoid arthritis. Razi Journal of Medical Sciences. 2010;17(74):15-21.

6- Mottaghi P, Karimzade H. Does chloroquine decrease liver enzyme abnormalities induced by methoterexate in patients with rheumatoid arthritis? Journal of Research in Medical Sciences. 2005;10(3):135-8.

7- Garip Y, Eser F, Bodur H. Health-related quality of life in rheumatoid arthritis: comparison of RAQoL with other scales in terms of disease activity, severity of pain, and functional status. Rheumatology international. 2011;31(6):769-72.

8- Arnold SB. Improving quality health care: the role of consumer engagement: Robert Wood Johnson Foundation; 2007.

9- Ghosh AK. On the challenges of using evidence-based information: the role of clinical uncertainty. The Journal of laboratory and clinical medicine. 2004 Aug;144(2):60-4.

10- Tabrizi J-s, Jafarabadi MA, Farahbakhsh M, Mohammadzedeh M. Customer quality and maternity care in Tabriz urban health centers and health posts. Journal of Clinical Research & Governance. 2012;1(1):12-5.
11- Tabrizi JS. Quality of delivered care for people with type 2 diabetes: a new patient-centred model. Journal of research in health sciences. 2009;9(2):1-9.
12- Tabrizi JS, Vahidi RG, Iezadi S, Shokri A. Content of clinical audit programs affecting its effectiveness: A systematic review. The Online Journal of Clinical Audits. 2013;5(2).
13- Tabrizi JS, Wilson AJ, O'Rourke PK. Customer quality in health care. Patient education and counseling. 2009 Jan;74(1):130-1.
14- Zuidgeest M, Sixma H, Rademakers J. Measuring patients' experiences with rheumatic care: the consumer quality index rheumatoid arthritis. Rheumatol Int. 2009 Dec;30(2):159-67.
15- Hibbard JH. Engaging health care consumers to improve the quality of care. Medical care. 2003 Jan;41(1 Suppl):I61-70.
16- Brus HL, Taal E, van de Laar MA, Rasker JJ, Wiegman O. Patient education and disease activity: a study among rheumatoid arthritis patients. Arthritis & Rheumatism. 1997;10(5):320-4.
17- Atapoor J, Shakibi MR, Rajabizadeh G, Sarotehrigi M. The relationship between depression and disability in patients with Rheumatoid arthritis in Kerman. Journal of Kerman University of Medical Sciences. 2002;9(2):79-85.
18- Monjamed Z. The Impact of Signs and Symptoms on the Quality of Life in Patients with Rheumatoid Arthritis Referred to the Hospitals of Tehran University of Medical Sciences in Year 2005. Qom University of Medical Sciences Journal. 2012;1(1).
19- Kjeken I, Dagfinrud H, Mowinckel P, Uhlig T, Kvien TK, Finset A. Rheumatology care: involvement in medical decisions, received information, satisfaction with care, and unmet health care needs in patients with rheumatoid arthritis and ankylosing spondylitis. Arthritis Care & Research. 2006;55(3):394-401.
20- Koehn CL, Esdaile JM. Patient education and self-management of musculoskeletal diseases. Best Practice & Research Clinical Rheumatology. 2008;22(3):395-405.
21- Wood AJ, O'Dell JR. Therapeutic strategies for rheumatoid arthritis. New England Journal of Medicine. 2004;350(25):2591-602.
22- Kennedy T, McCabe C, Struthers G, Sinclair H, Chakravaty K, Bax D, et al. BSR guidelines on standards of care for persons with rheumatoid arthritis. Rheumatology. 2005;44(4):553-6.
23- Vahidi RG, Tabrizi JS, Iezadi S, Gholipour K, Mojahed F, Rasi V. Organizational Facilitators and Barriers to Implementing Effective Clinical Audit: Systematic Review. Journal of Pakistan Medical Students. 2013;3(1).
24- Newman S, Steed L, Mulligan K. Self-management interventions for chronic illness. The Lancet. 2004;364(9444):1523-37.
25- Yood RA, Guidelines ACoRSoRA. Guidelines for the management of rheumatoid arthritis: 2002 update. 2002 , pp. 328–346.
26- Warsi A, LaValley MP, Wang PS, Avorn J, Solomon DH. Arthritis self-management education programs: A meta-analysis of the effect on pain and disability. Arthritis & Rheumatism. 2003;48(8):2207-13.
27- Keefe FJ, Lefebvre JC, Kerns RD, Rosenberg R, Beaupre P, Prochaska J, et al. Understanding the adoption of arthritis self-management: stages of change profiles among arthritis patients. Pain. 2000;87(3):303-13.
28- Coulter A, Parsons S, Askham J, Organization WH, Organization WH. Where are the patients in decision-making about their own care?: World Health Organization Regional Office for Europe; 2008.
29- Wilson A, Tabrizi J, Gholipour K, Farahbakhsh M. Technical Quality of Maternity Care: the Pregnant Women's Perspective. Health Promot Perspect. 2013;3(1):23-31.