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Abstract

Background and purpose: Customer quality (CQ) refers to knowledge, attitude, and skills of service-user in treatment process and this study aims to assess it in delivered care to patients with inflammatory bowel disease (IBD) in Tabriz city, Iran, 2012.

Materials and Methods: This is a cross-sectional investigation in which the target population includes 94 patients with IBD, who had medical care files in Imam Reza Hospital and Tabriz Golgasht Specialized Clinic. A 19-question inventory is the tool for data collection that its validity was approved by 10 experts and its reliability was examined and verified by conducting a pilot study and with calculation of internal consistency ($\alpha = 0.78$). SPSS software was employed to analyze data.

Results: The mean score of the variable of CQ was derived (70.63 ± 9.67) in patients with IBD disease. All participants had acquired the scores of self-management at the first phase. However, at last 11.7% of them had reported the highest scores in variable of CQ and they could continue their own medical care trend under variable conditions like stress and financial problems. Similarly, there was a significant relationship among CQ with an educational degree in the participants ($P = 0.050$) so that as the educational level was higher, the score of CQ was also increased.

Conclusion: The acquired results signify that CQ is relatively acceptable in the studied population but major problems are visible in some areas, and this may imply the necessity for consideration by healthcare directors.

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Key words: Customer Quality, Inflammatory Bowel Disease, Tabriz (Iran)

1. Introduction

There is no doubt that the improvement of healthcare system in the society is the main mission in health systems and given that the subject of quality covers several important parameters such as efficiency, effectiveness, proportion, continuity, security, ability, responsiveness, justice, and capacity, which are assumed as the major challenges of various communities in the health area so the importance of study on quality may become more evident than ever (1,2).

Measurement the quality of medical care is the main precondition for quality improvement. In other words, in order to improve the results of services and care, measurement of quality of healthcare services is employed that is mainly purpose. Despite of the efforts which have been already made to recognize and measure various dimensions of quality, but this concept has been often examined only from two aspects of technical quality (TQ) and service quality (SQ). TQ is something that the customer may receive and in contrast to this issue, there is something, which has been introduced according to scientific evidences as service standard that is often reflected from knowledge, skill, and abilities of service-provider. Furthermore, SQ is related to conditions and way of acquisition the service by the service-user, and it often represents the method of giving service and the context where the given service is presented (3,4).

Given that the effective components in presentation of healthcare services are placed in three fields of provider, environment, and proves of giving service and service-user so it seems that the other crucial and vital dimension that has been overlooked in presentation of health and medical services includes the customers' related aspect and their empowerment to participate efficiently in treatment process. Based on a model that has been purposed by Tabrizi et al., customer quality (CQ) dimension was added to two

former dimensions. Certainly, this field of quality remarkably effects on way of service presentation and reception since it causes improving the capability and abilities, which leads further and better participation by service-user in the process of giving service and his/her participation in the essential cases and intervention in making key decisions and constructive interaction with service-provider, etc. Thus, in order to promote the quality of health and medical services, primarily the capacity of customers in healthcare system should be improved in terms of knowledge, skill, and their self-confidence since with development in this area the ability of patients will be also increased in self-management, optimal using of healthcare system, and sharing with service-providers in decision-making (5).

The inflammatory bowel diseases (IBDs) generally comprise of two idiopathic (with unknown symptom) of ulcerative colitis (UC) and Crohn's diseases (CD). These diseases are more epidemic in Developed Countries than in Asian Developing Nations. Overall, the risk of incidence of IBD diseases in urban zones is at higher social and economic level than in rural areas and also this level is higher in Developed Countries than in Developing Nations (6).

Furthermore in Iran like other Asian countries, the given reports signify rising of incidence and epidemic trend of IBD diseases, especially UC (7,8). According to a report made by Malekzadeh et al. (9) regarding the status of IBD diseases, this disease was rare in Iran by 1985 and then it was increased. Whereas in the conducted former studies in Iran, the national patients' information recording system was not utilized and many of them were hospital-centered and retrospective therefore there is no transparent epidemiologic information regarding the rate of incidence of such diseases in Iran.

The IBD will have many negative impacts on occupational and social life for the patients. The patients with IBD diseases are

affected mainly due to continuous taking drugs, continuous hospitalization, and other consequences of such diseases. For this reason, a system should exist that can meet requirements for these patients. These diseases may effect on quality of life, social performance, and even patient's self-confidence and inhibit the given person to enjoy his/her life. Under such conditions, the patients may show some reactions like anxiety, depression, denial, or dependency on the disease. This measure may be taken by the patient, relatives, friends, the therapist, and/or mental health counselor (7).

With respect to importance of self-care subject in chronic diseases, the slogan of World Health Organization has been announced "Lifetime health with self-care" in 2014 (10). Given that users of health services are the most apt persons for recognizing the medical care preferences and self-management needs thus the current study has been carried out in order to examine CQ in medical care for patients with IBDs from patients' view.

2. Materials and Methods

The present study is of descriptive and cross-sectional investigation. The target population in this study includes the patients with IBD that referred to Imam Reza Hospital affiliated to Tabriz University of Medial Sciences, Iran, and Specialized Clinic and Tabriz Golgasht Specialized Clinic to receive medical care in summer 2012. The sample size was calculated with pilot study as 30 patients and by means of sample size formula from 94 participants totally. The samples were elected from the patients with medical files in alimentation and endoscopic ward and alimentation clinic at Imam Reza Hospital as well as some patients with medical file in Golgasht Clinic.

The simple sampling method was taken to prepare samples in this study and the criteria for inclusion in this study comprised of suffering from one of two types of IBD

diseases (UC or CD), residence in Eastern Azerbaijan Province, diagnosis of disease in patient at least since 1-year ago, being under treatment in Imam Reza Hospital and Golgasht Clinic at present. The criteria for exclusion from this study consisted of lack of the needed ability to respond to questions, lack of their inclination for participation in this study, and some patients with other companion diseases like cardiovascular diseases.

CQ was examined based on Comprehensive Quality Measurement of Healthcare-CQ (CQMH-CQ) questionnaire (5). An inventory with 16 questions was distributed among 11 experts with background in activity about quality of healthcare to determine validity where eventually 10 experts declared their comments (Response rate: 91%) and after implementation of their comments, face validity, and content validity of questionnaire were examined and all questions in this inventory were confirmed by Content Validity Ratio and Content Validity Index with scores 1 and 0.89, respectively and also 3 other questions were added to the previous questions based on experts' comments. The questionnaire reliability was also calculated by means of pilot study with 30 samples via internal consistency technique and with computation of Cronbach alpha coefficient (0.78) (11).

The final score of variable of CQ for self-management phases as well as scoring with respondents were calculated based choices including completely disagreed (= 1), disagreed (= 2), no comments (= 3), agreed (= 4), and completely agreed (= 5) so that after primary scoring, the choices of no comments (= 3) and no response were scored according to mean score values from other choices.

According to instruction of Tabrizi et al. in final questionnaire CQ, 4 defined stages of CQ were calculated to acquire self-management and measurement of knowledge and ability of service-users in improvement of the quality of received service including

patient’s belief in his/her important role in treatment trend; possession of adequate knowledge, skill, and confidence (KSC) to conduct the related activities to treatment trend; trying to preserve and improve health of active involvement; and continuity of medical care trend even under pressure and critical and stressful conditions thereby the raw scores of CQ were computed and cutoff points were employed to determine CQ at self-management phase (5) (Table 1).

To report the results of exploring qualitative variables, frequency (percentage) were used and the mean (standard deviation) was employed for quantitative variables and also SPSS software (version 17; SPSS Inc., Chicago, IL, USA) was utilized in all analyses. In order to examine existence or lack of significant relationship among score of CQ with dual form nominal factors, t-test was adapted and ANOVA analysis was employed for multifaceted nominal factors while P value was assumed significant at < 0.050.

3. Results

In the present study, women and men as well as various age groups were shared almost equally in participation in this study. Most of the participant patients in this investigation were local, non-smokers, with insurance booklet and normal weight and education at high school diploma and lower levels (Table 2).

The resumed frequency and percentages for participants in every stage of self-management are given in table 3. In this table, the given frequency and percentage at every stage means that the participants have acquired the scores from the former steps and that step in

variable of self-management but they could not yet acquire score at the nest stage. Accordingly, only 11.7% of the studied patients managed to pass all four steps, and they were able to maintain and continue the changes in their lifestyle for improvement of health. All participants had acquired scores at the first stage of self-management. Only one of participants (1.1%) in this study could not play active role in exposure to the related problems with his/her health despite having KSC regarding his/her disease and in contrast most of the patients (99.9) have reported their active involvement in this study with medical care providers (Table 3).

It was characterized in investigation in existence or lack of the significant relationship among score of CQ and demographic variables in patients that there was a significant relationship among CQ total score with educational level in participants (P = 0.050) and CQ in persons with academic education was higher than in participant with diploma and lower educational levels so this means that as educational level was higher in the participant, total score of SQ was also added (73.14 vs. 69.13). one of participants (1.7%) with diploma and lower education level could not pass his self-management at the second phase and s/he was not able for active involvement in the field of his/her medical care with service-providers while all patients with academic education level had reported their own active involvement in exposure to the related problems with their health. Finally, compared to other patients, a greater number of patients with academic education degree could acquire the highest score in variable of CQ (14.3% vs. 10.2%).

Table 1. Cutoff points in scores of customer quality (CQ) at self-management stages

Patient’s self-management phases	Questions of inventory	Score of CQ
Belief and faith	Qs 1, 2	≤ 16
KSC	Qs 3-12	16.01-50
Participation and active involvement	Qs 13-17	50.01-83
Continuous under pressure (stressful conditions)	Qs 18-19	≥ 83.01

CQ: Customer quality, KSC: Knowledge, skill, and confidence

Table 2. Demographic data of patients with inflammatory bowel disease (IBD)

Variable	Frequency	Percentage
Gender		
Female	48	51.1
Age		
≤ 27	32	34.0
28-40	32	34.1
≥ 41	30	31.9
History of smoking		
N/A	81	86.2
Place of residence		
Tabriz (local)	55	58.5
Town/village (non-local)	39	41.5
Insurance status		
Have	91	96.8
Educational level		
Diploma and lower	59	62.8
Academic	35	37.2
Job		
Employed	42	44.7
Householder	25	26.6
Unemployed	8	8.5
Student	14	14.9
Retired	5	5.3
BMI		
≤ 18.5	4	4.3
18.51-25 (normal weight)	47	50.0
25.01-30 (additional weight)	35	37.2
> 30 (fat)	8	8.5

BMI: Body mass index, IBD: Inflammatory bowel disease

Table 3. Frequency and percentage of the resumed participants at self-management stage

Row	Stage	Quantity	Percentage
1	Belief and faith	0	0
2	KSC	1	1.1
3	Participation and active involvement	82	87.2
4	Continuance under pressure	11	11.7

KSC: Knowledge, skill, and confidence

Similarly, there was no significant statistical relationship among CQ total score and gender, age, body mass index, and job variables in patients. However, several differences were seen in mean score of CQ among various groups in these variables, these differences were not statistically significant and it might be due to the studied smaller sample size (Table 4).

4. Discussion

It was identified during the present investigation, which was carried out by aiming at measurement of rate of CQ in the presented medical care to patients with IBD in Tabriz, that all participants in this study believed that they played unique and important role in their healthcare. However finally, 11.7% of them acquired the highest

Table 4. The relationship of control quality (CQ) in inflammatory bowel disease (IBD) patients with their demographic factors

Demographic factors	CQ score (mean ± SD)	CQ stages (%)			P
		Stage 2	Stage 3	Satge 4	
Total	70.63 ± 9.67	1.1	87.2	11.7	
Gender					
Female	70.35 ± 9.07	0	89.6	10.4	0.781
Male	70.91 ± 10.36	2.2	84.8	13.0	
Age					
≤ 27	71.60 ± 9.34	0	87.5	12.5	0.776
28-40	70.34 ± 10.84	0	87.5	12.5	
41 ≤	69.90 ± 8.92	3.3	86.7	10.0	
Educational level					
Diploma and lower	69.13 ± 9.67	1.7	88.1	10.2	0.502
Academic	73.14 ± 9.29	0	85.7	14.3	
BMI					
≤ 18.5	69.00 ± 7.53	0	100.0	0	0.811
18.51-25 (normal weight)	69.85 ± 10.13	2.1	85.1	12.8	
25.01-30 (additional weight)	71.85 ± 9.08	0	88.6	11.4	
> 30 (fat)	70.62 ± 11.49	0	87.5	12.5	
Job					
Employed	70.62 ± 11.33	2.4	81	16.7	0.835
Householder	69.48 ± 8.87	0	92	8.0	
Unemployed	70.87 ± 7.95	0	100.0	0	
Student	70.93 ± 6.44	0	100.0	0	
Retired	75.20 ± 10.45	0	60.0	40.0	

BMI: Body mass index, CQ: Control quality, IBD: Inflammatory bowel disease, SD: Standard deviation

scores in a variable of customer’s quality. In other words, about 88% of patients could not continue their medical care under pressure and harsh conditions such as stress and anxiety and financial constraints. Similarly, total mean value in variable of CQ was obtained (70.63 ± 9.67) among the studied patients where in contrast, this ratio was higher than the values, which have been derived from other studies in this regard.

For example, in a similar investigation that was done on diabetic patients by Tabrizi et al. in Australia, CQ score was obtained 64.5 for diabetic patients (5), and in Alizadeh research that was carried out under title of “The review of CQ from viewpoint of diabetic patients (type II)” in Tabriz Sina Medical - Educational Center, CQ score was 65.8 (12). In another study, which was conducted by Bahram in patients with asthma under title of “Measurement CQ according to asthmatic patients, who referred to Sheikh Al-Rais Clinic at Tabriz University of Medical Sciences in 2011,” this score was 66.5 (13),

while in survey of Gholipour on pregnant mothers under title of “CQ in pregnancy period medical care in healthcare and medical centers and bases at Tabriz city,” CQ was calculated 67.8 (14). The higher score of CQ in patients with IBD than other studies can associated with more insights of their care provides related to importance of patients education and self-care, fewer patients in this field or different nature of this diseases.

Given that educational level has noticeable effect on score of CQ in such a way that as educational level increases in patient, the score of CQ is added in the given patient thus it can be concluded that educational system could achieve its objective to some extent in line with empowerment of members of community. Nevertheless, the necessity for further and more appropriate trainings may be sensed more in the course of improvement and increase in CQ score among these patients. The existing significant relationship among CQ with educational level in IBD diseases is consistent with studies of Tabrizi et al. (5) and

Alizadeh (12) investigations while it is not complied with Bahram (13) and Tabrizi et al. (14) researches. Similarly, the lack of significant relationship among variables of age and gender with score of CQ is consistent with the results of studies, which were done by Tabrizi et al. and Bahram (5,13).

The high rate of physicians' work load and great number of references by patients to specialist physician has inhibited the possibility for appropriate training of patients regarding IBD diseases and thus partial and inadequate self-management skills among patients. Thus, healthcare provider should be required to present training of the needed self-care and knowledge and skills to patients in this regard where this necessitates reduction in number of referent patients to a physician and or increase in number of medical care centers for patients with IBD. Of those other efforts which can be made to improve received CQ by the patients with IBD diseases one can refer to increase the health-related literacy and knowledge in the society via mass media regarding the simple prophylactic methods and treatment for IBD diseases as well as design of booklets, pamphlets, and websites to be used by these patients (15).

Given that a wide range of the studied patients were also under age ranks (< 40) and literates, using these cases may contribute them highly. Alternately, with respect to this point that the waiting time was relatively too long for the patients under physician's visit so the prepared training contents about IBD disease can be utilized in waiting halls for these patients. It should be noted that training subjects for patients should include changing behavior techniques in order to effect on patient's attitude and emotions (16).

Based on findings, 87.2% of patients could not continue their own medical care under pressure such as stress, anxiety, and financial constraints. With respect to high costs for some medical care and drugs to patients with IBD diseases, coverage of

drugs and medical care for patients with IBD by insurance companies may lead to continuance of medical care for these patients even with the existing financial constraints with respect to ever-increasing incidence of disease cases and to reduce imposed costs of disease to them and thereby to improve customer's quality.

One of the studied patients (1.7%) could not continue treatment trend up to third stage of self-management i.e. active involvement in his/her medical care trend. This patient was not able to maintain the changes, which were exerted to provide health in his/her lifestyle and or prevent from the problems and or to find the solution to remove the new problems in his/her health and practically s/he could not actively involved in his/her own medical care through cooperation with health team.

Empowerment of patients, who suffer from chronic diseases, is not only necessary ethically but it leads to self-management and improvement in the disease-related skills in the given patient. The patients, who can control their disease by self-management, may encourage other patients so that they can also play key role in decisions regarding their health. Moreover, these expert patients may strengthen their skill and insight in line with improvement of their received services (17,18).

Overall, it can be implied that CQ status is at relatively acceptable level in the studied population (70.63 ± 9.67), however, many major problems are visible in some areas and this refers to necessary attention and intervention by directors and policymakers in healthcare and treatment field and taking essential steps toward improving status quo and rising of self-care abilities in patients with IBD diseases.

The CQ concept is new fields in quality of delivered care in health care. So, the limitation of this study is the lack of CQ studies related to IBD or internal medicine disorders for compare and discuss.

Conflict of Interests

The Authors have no conflict of interest.

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