Original Research Article

Quality health care in Indian setup: an ear, nose, throat outpatient department-based approach for quality health care indicators

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ABSTRACT

Background: In this era doctor patient relationship facing hard times, especially in Indian setup. It is immensely evident in form of increasing lawsuits and violence against doctors. This brings patient centred approach with patient satisfaction into picture and further leads to concepts of quality health care. There is raised attention on enhancing the quality of life through the quality council of India. Here is an attempt to look for any causal association with the help of some routine indicators which if modified can lead to better state of doctor patient relationship.

Methods: This study has taken patient satisfaction into consideration with the help of quality care parameters at ear, nose, throat (ENT), outpatient department in Indian setup. These indicators are based on parameters divided into hospital domain and doctor domain and each parameter is graded on 5-point Likert scale.

Results: Score under doctor domain are significantly high statistically. Examination and communication by doctor (domain) are the parameters which scored the most. Under hospital domain the highest preference by patients in terms of score was given to hygiene and sanitation of hospital.

Conclusions: Quality health care is multifactorial and parameters under hospital domain and doctor domain are interdependent to much extent. It has been concluded statistically that examination and communication by doctor derives a better sense of trust and doctor patient relationship significantly.

Keywords: Quality health care, Indian, ENT

INTRODUCTION

India is the rich land of immense diversity with respect to culture, language, climatic conditions, terrain etc but sadly it also get reflected in terms of wide variance of health care quality. Health care facilities available in nation are sometimes are not able to meet the expectation of patients. This sense of dissatisfaction not only leads to no trust between community and health care providers but may lead to lawsuits, thus forming an unfortunate vicious circle.

Ear, nose and throat (ENT) disorders are one of the main reasons for a visit to a health care facilities both at rural and urban communities across the world.[1] Even after the fact that ENT symptoms are frequent reasons for consulting GPs, most individuals in the community are being treated without seeking help.[2-7] Moreover, in many developing countries, there is a deficiency of ENT specialists and thus overburdened ENT hospital units.[8]

As per 2011 study it has been estimated that Indian set up has roughly 20 health workers per 10,000 population, with allopathic doctors comprising 31% of the workforce, nurses and midwives 30%, pharmacists 11%, AYUSH practitioners 9%, and others 9%.[9]

According to the rural health statistics of the government of India (2015), about 10.4% of the sanctioned posts of auxiliary nurse midwives are vacant, which raises to

40.7% of the posts of male health workers. Twenty-seven percentage of doctor posts at PHCs were vacant, which is more than a quarter of the sanctioned posts.[10]

This statistic also reflects a mirror of Indian health care facilities with lack of specialist at one end whereas overburdened at another, thus comprising quality health care.

The Indian community in rural setup is currently bearing the continuous rise in ENT ailments, where the varied prevalence of ENT disorders are evident in form wide range from 4.3% in a district to 11% has been reported from various different studies in literature.[11-14] Moreover, in developing world such as India, there also exists a scarcity of health care services and trained health professionals in otolaryngology, which is reflected by the gap between health-care delivery in high-income countries and low-income countries.[15] These factors when taken all together affect quality health care in negative sense in some or the other way.

As quality measures, process and performance metrics are increasingly used to frame better health care approach in a community. One US program has stated that its "incentive payments are determined based on quality measures drawn from nationally accepted sets of measures".[16] But these measures are derived from the Healthcare Effectiveness Data and Information Set (HEDIS), whose sponsor states they "were designed to assess measures for comparison among health care systems, not measures for quality improvement" (boldface in original).[17]

Studied have shown some evidence that connecting quality measures with improved health outcomes is modest, and metrics are easy to measure and thus chosen because they rather are evidence-based.[18] It has also been observed that patient preferences are rarely addressed in guidelines in spite of some guidelines which emphasize shared decision making.[19]

The institute of medicine's 2015 report, vital signs: *c*ore metrics for health and health care progress, highlights how "many measures focus on narrow or technical aspects of health care processes, rather than on overall health system performance and health outcomes" and finds that the diversification of measures "has begun to create serious problems for public health and for health care".[20,21]

While we often associate quality health care with cost factor, USA have the one of the most expensive health care system in world, yet have disappointing patient outcomes.[22]

Study has shown that improved health is often the result of actions by multiple parties at multiple levels, not individual providers. In many cases, patient action (or inaction) is critical and individual providers have limited influence.[23]

The American association of medical colleges (AAMC) published some principles which appears to be valuable guiding tool for public reporting of performance of health care provider but patient-centeredness has not been addressed.[24] In this study patient inputs has been recorded n parameters are accorded priority on the same.

Aim of the study was to compare parameters of quality health care in Indian set up with impact of these parameters on patient satisfaction level leading to better doctor patient relationship if any.

Objectives of the study were to document and analyse parameters under hospital domain for quality health care, to document and analyze parameters under doctor domain for quality health care, to compare and analyze parameters of quality health care in Indian set up, to look for any association of quality health care indicators with patient satisfaction level statistically.

METHODS

The study was done in zonal military hospital, Jabalpur at Department of ENT military hospital.

A study carried out on the adult patients (>18 years) enrolled for ENT consultation on outpatient department (OPD) basis for 15 months from October 2018 to September 2020.

Inclusion criteria for selection of patients included patients enrolled for ENT consultation in OPD and exclusion criteria excluded patients with Schizophrenia, post Op/follow up patients and ENT emergencies requiring OT transfer.

A total of 1711 patients taken into study, who are provided with a set up questionnaire of 2 domains with 5 subtypes each, as follows-hospital domain: Infrastructure, Hygiene and sanitation, Waiting time, Technology available, Rating (if any). Doctor domain: Time spent during consultation, Questions asked by doctors, Examination by doctor, Verbal communication, Privacy.

All 10 parameters are measured on 5-point Likert scale thus providing a fair idea of which domain and what parameter holds more ground when it comes to provide quality care at ENT OPD in Indian set up.

Statistical analysis included quality of care using 5-point Likert scale for hospital and doctor domain was collected from 1711 out patients in ENT OPD. The average score for each domain of all the individual patients were computed. Quintile plot and Shapiro-Wilk statistics test for normality was applied to test the normal distribution of the average score. Wilcoxon Signed Rank test was

applied for statistical comparison of score in hospital and doctor domains.

It has been observed that parameters under doctor domain are scored higher by patients at outdoor services with an average of 3.68 out of 5 compared to hospital domain which is at an average of 3.028 out of 5.

Under hospital domain, patient scored hygiene and sanitation the most with an average of 4.21 out of 5. Technology denoting functional services at hospital stands second which is followed by online rating and infrastructure whereas waiting time got least preferences by patients thus scored the least.

Under doctor domain, patients give highest preference to examination by doctor by providing an average score of 4.60 out of 5. This was followed by communication by doctor with an average score of 4.45 out of 5. Privacy stands next and got more liberal score by lady patients as compared to male ones, whereas questions asked by doctor to reach diagnosis and time spent by doctor with patient got less attention thus scored to be placed at bottom.

RESULTS

The response given by 1711 patients to 5 parameters of quality care under hospital domain over 5-point Likert scale is tabulated. The total score of each parameter is derived out of 8555 (1711×5). An average score of each parameter (out of 5) and an average hospital domain score is derived as shown.

Table 1: Comparison of quality care parameters under hospital domain.

Hospital domain	Total score	Average score
Infrastructure	4107	2.40
Hygiene and sanitation	7204	4.21
Waiting time	3816	2.23
Technology available	5647	3.30
Rating (if any)	5133	3.00
Total	25907	15.14
Average	5181.4	3.028

The response given by 1711 patients to 5 parameters of quality care under doctor's domain over 5-point liker scale is tabulated. The total score of each parameter is derived out of 8555 (1711x5). An average score of each parameter (out of 5) and an average doctor domain score is derived as shown.

The average score for each domain of all the individual patients were computed. Quintile plot and Shapiro-Wilk statistics test for normality was applied to test the normal distribution of the average score. Wilcoxon Signed Rank test was applied for statistical comparison of score in

hospital and doctor domains. The analysis revealed that the score in doctor domain was significantly higher than score in hospital domain ($p<0.0001$).
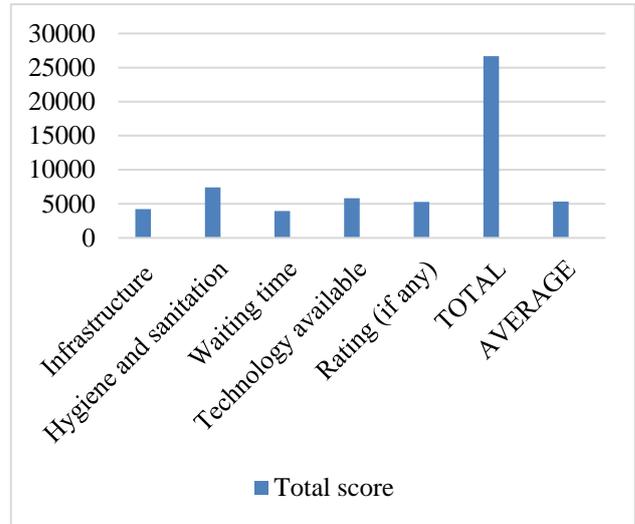

Figure 1: Score under hospital domain.

Table 2: Comparison of quality care parameters under doctor's domain.

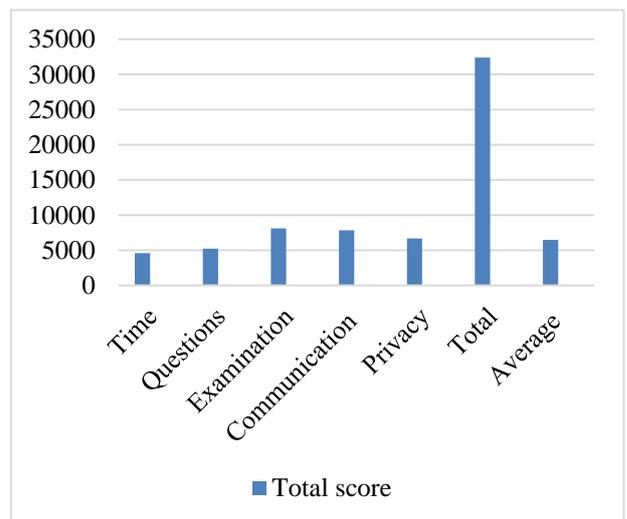| Doctor Domain	Total score	Average score
Time	4449	2.60
Questions	5065	2.96
Examination	7871	4.60
Communication	7614	4.45
Privacy	6485	3.79
Total	31484	18.4
Average	6296.8	3.68

Figure 2: Score under doctor's domain.

Under hospital domain, further analysis of each parameter showed that hygiene and sanitation of hospital carries significant upper edge as compared to other parameters under same domain statistically ($p<0.0001$).

Table 3: Normality of data score.

Domain	Mean	SD	Median	1st quintile	3rd quintile	Min	Max
Hospital	3.03	0.35	3.0	2.8	3.4	2.2	3.8
Doctor	3.68	0.39	3.8	3.4	4.0	2.6	4.6

Table 4: Hygiene compared with other parameters under hospital domain.

Parameter	Mean	SD	Median	1st quintile	3rd quintile	Min	Max	Z	P value
Hospital domain									
Hygiene	4.21	0.70	4.0	4.0	5.0	2.0	5.0	Reference	
Infra	2.40	0.64	2.0	2.0	3.0	1.0	4.0	36.09	<0.0001
Waiting	2.23	0.70	2.0	2.0	3.0	1.0	4.0	36.07	<0.0001
Tech	3.30	0.82	3.0	3.0	4.0	2.0	5.0	30.20	<0.0001
Rating	3.00	0.69	3.0	3.0	3.0	2.0	5.0	33.17	<0.0001

Table 5: Examination compared to other parameters under doctor's domain.

Variables	Mean	SD	Median	1st quintile	3rd quintile	Min	Max	Z	P value
Doctor domain									
Exam	4.60	0.50	5.0	4.0	5.0	3.0	5.0	Reference	
Time	2.60	0.90	3.0	2.0	3.0	1.0	4.0	36.18	<0.0001
Ques	2.96	0.59	3.0	3.0	3.0	2.0	5.0	36.49	<0.0001
Comm	4.45	0.50	4.0	4.0	5.0	4.0	5.0	8.43	<0.0001
Priv	3.79	0.85	4.0	3.0	4.0	2.0	5.0	28.57	<0.0001

Table 6: Examination by doctor compared to hygiene of hospital.

Variables	Examination	Hygiene	Chi square	chi square with Yates correction	Std score Z	P value	Remarks
Parameter score	8099 (7916.14) (4.22)	7411 (7593.86) (4.4)	16.2295	16.1409	17.39	<0.0001	Significant
Total score	8800 (8982.86) (3.72)	8800 (8617.14) (3.88)					

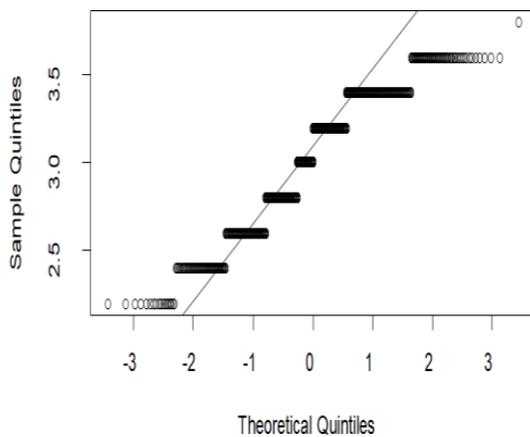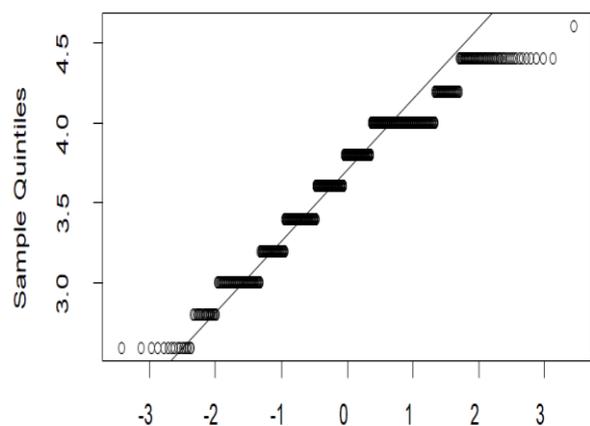**Figure 3: Normal Q-Q plot-hospital domain (theoretical quintiles).**

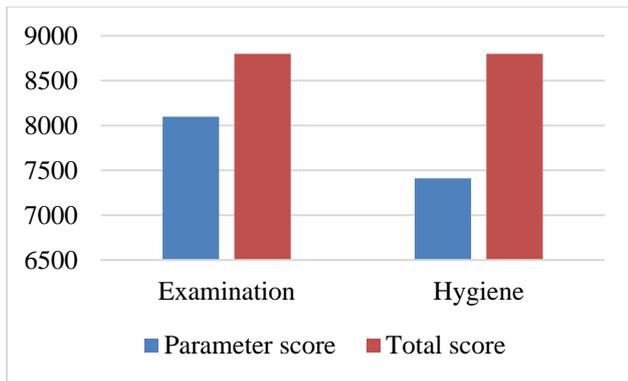**Figure 4: Normal Q-Q plot-doctor domain.**

Figure 5: Examination by doctor vs hygiene of hospital along with total domain score of each.

Under doctor domain, further analysis of each parameter showed that examination by doctor carries significant high score as compared to all other parameters under same domain (p<0.0001).

Parameters with highest score from each domain are compared and tabulated. 'Examination by physician' scored highest 8099 points under doctor domain and 'hospital hygiene' scored highest 7411 points under Hospital domain, thus compared statistically. 'Examination by physician' was found to be a statistically significant parameter on said comparison as per p value.

DISCUSSION

As previous studies signify lack of human resources at one hand leading to overburdened health care facilities at another, thus causing compromised health care quality to some extent. This study put some parameters of quality health care in order to access patient satisfaction level at hospital level. It has been observed that patient grade more score to the parameters which are directly associated with doctor interaction as compared to general parameters of quality health care.

As compared to previous studies where the lack of quality care is due to lack of human resources, here in this study this has been taken care of by examination of all patients by qualified subject specialist.[15] In addition to previous study our study had also evidence that connecting quality measures with improved health outcomes is modest, when analyzed statistically.[18] The patient preferences were taken into account in terms of parameters scored by them for shared decision taking in future by administration at hospital level as compared to previous study.[19] Our study has also shown that improved health is often the result of actions by multiple parties at multiple levels, not individual providers.[23]

CONCLUSION

Quality improvement is a continuous process. It has been also accorded upon that improved health care facilities

are integrated outcome of multiple measures. These multiple parameters are taken into account under major domain in this study. After taking patients inputs and scores on various quality parameters, it has been found that both hospital and doctor influences patient perception of health care to various extent.

Parameters under doctor domain are more important and scoring so as to reach better patient satisfaction level. It has been concluded statistically that examination by doctor derives a better sense of trust and doctor patient relationship significantly. In addition to it, a valid and understandable communication with the patient adds positive impact thus these 2 parameters together hold the core area of patient centeredness and satisfaction.

Parameters under hospital domain are also play significant role as far as patient satisfaction level is concerned. It was evident by score received under hygiene as well as technology parameters of hospital domain. So, it has been framed here that improved health quality care is a multifactorial approach. It requires measures both at hospital administration level in order to make facilities and services available and at personal level of doctor to deliver those services in a skilful manner.

Good quality measures should inform consumers, providers, regulators, and others about the quality of care being provided in a setting, so that patient-oriented quality measures reflect outcomes experienced as well as valued by patients.

As this study has been carried out in service hospital, no cost factors are taken into consideration which may prove out to be a major limiting factor in other hospitals of the same country and community as well. However, in medical sciences there may occur a difference in patient care received and patient care perceived which depends upon various other factors, thus this demands further study of quality care parameters specific to socioeconomic status/specific disease pattern/age group/sex/specific part of country etc.

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