



A Systematic Review of Patient Satisfaction Scales and Their Applicability to Covid-19 Hospitalized Patients: Gaps and Emerging Needs

Journal of Patient Experience
Volume 9: 1-10
© The Author(s) 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/23743735221079132
journals.sagepub.com/home/jpx


Sidhartha Satpathy, MD, MHA¹, Laxmi Tej Wundaville, MHA¹,
Sujata Satapathy, MPhil, PhD², Apoorva Malik, MPhil²,
Sheetal Singh, MHA¹, Angel Rajan Singh, MHA¹,
Rakesh Chadda, MD², Vijay Prasad Barre, MPhil PhD²,
and Shraddhesh Kumar Tiwari, PhD² 

Introduction

Patient satisfaction is largely a dynamic multifaceted construct consisting of patient's appraisal of their experience on quality of care received at the health care facility. The most frequently cited criteria for measuring satisfaction with hospitals include particular health condition and type of treatment availed, hospital environment, quality of hospital services, overall behavior of the staff, cost of hospitalization, and post-discharge (follow up) facilities (1). However, factors such as age, income, communication, employment status, gender, and education of the patient can also affect the perception of satisfaction. Therefore, it becomes important to understand the scope of construct of 'patient of health (2) from patients' perspective. Patients carry certain expectations before their visit to the hospital and the resultant satisfaction or dissatisfaction is the outcome of their actual experience (3). All such information can be utilized effectively to identify barriers, address treatment gaps, enhance patient turnover, and build more sustainable health care services.

However, the key determinants of patient satisfaction in non-covid-19 period might be different as compared to the situation in the emergence of a grave pandemic. As people's understanding and response to Covid-19 varied, the health care providers across the globe also struggled to make sense of their patient's expectation from the existing healthcare services. Symptoms of Covid-19 disease and treatment outcomes along with patient engagement in the treatment process became important aspects of patient satisfaction during the Covid-19 pandemic (4,5). Though it is understandable that isolation services can cause much inconvenience not only for the patients and the hospital service providers, the mechanism of how it affects patient satisfaction is less studied. For instance, dealing with isolation, adjusting to the PPE kits and masks while communicating, following rigorous hygiene schedule,

personal human touch in treatment practicing social distancing rules, and providing basic psychological support could be key factors impacting patient satisfaction of patients hospitalized for Covid-19. E.g., few studies during SARS reported that patients in general felt alienated by doctors wearing goggles, gown and masks, felt less secure without relatives present, and be dissatisfied with the changing duty schedule of the treating doctors due to week-on, week-off roster (6).

Financial implications could be a key determinant of satisfaction during the hospitalization, particularly in view of economic slowdown, job loss, uncertainty about future of occupational opportunities. Hence, low-cost treatment may also boost the satisfaction level. Overall, the studies assessing patient satisfaction of Covid-19 patients have been very limited till date. In fact, it is worth exploring in resource crunch low-and-middle-income-countries.

Subsequent to bio-psychosocial model of health and health care, and other theories of patient satisfaction in 1980s, several attempts were made to measure patient satisfaction in an objective manner either through questionnaires or scales in different settings including primary care and hospitals (7,8). And many of these are often silent about the psychometric information concerning those measures. It is imperative to measure the patients' satisfaction in the changed health care delivery system during Covid-19. And outlining these parameters in

¹ Department of Hospital Administration, NCI, Jhajjar, AIIMS, New Delhi, India

² Clinical Psychology, Department of Psychiatry, AIIMS, New Delhi, India

Corresponding Author:

Sujata Satapathy, MPhil & PhD, Additional Professor, Clinical Psychology, Department of Psychiatry, AIIMS, New Delhi, 110029, India.
Email: researchoncovid19@gmail.com



patient satisfaction may help hospitals in better quality of health care service delivery. We conducted a systematic study to review the existing scales on patients' satisfaction used for hospitalized patients and their application in Covid-19 situation. We also reviewed the methodology and the tools used in the recent studies that investigated patients' satisfaction of the patients hospitalized for treatment of Covid-19 to identify the gaps and needs in this field.

Material and Method

Literature Search and Retrieval Process

Pubmed, SCOPUS and Science Direct databases were searched. Search strategies were developed for each database, using controlled vocabulary and key words to capture patient satisfaction of Covid-19 patients. Phrased search such as 'patient satisfaction Covid-19' was used (Table 1). Key words such as patient satisfaction/patient experience/patient perception + respiratory illness/Covid-19/SARS/MARS/H1N1 etc. were used. Data extraction followed PRISMA guidelines and studies were included following inclusion and exclusion criteria (Figure 1).

Results

Search Results

Out of 8,442, 8,145 records were eliminated as the title were not mentioning patient satisfaction or patient perception,

Table 1. Inclusion and Exclusion Criteria.

S.N.	Inclusion Criteria	Exclusion Criteria
1.	All full texts articles on patient satisfaction/perception/lived experience in hospitalized/institutionalized COVID-19 patients	All researches studying patient satisfaction/patient perception/patient experience in COVID-19/SARS/ MARS patients seeking outpatient services
2.	All original such studies on other respiratory illness like SARS/MARS/H1N1 hospitalized/	All researches studying patient satisfaction/patient perception in COVID 19 hospitalized but not from patient's perspectives
3.	All original articles published in English language	All letters to editor, case reports, case series, manual, and hospital reports on patient satisfaction
4.	All quantitative and qualitative researches meeting inclusion criterion	Patient satisfaction in surgeries/transplants/critical health care
5.	Some key general patient satisfaction scales for reference to the content and discussion	

unavailability of full papers, non-English language publications. Thus, 297 potential documents were screened. 258 documents were further excluded on the basis of abstracts (as these studies examined patient satisfaction of patients with conditions other than respiratory illness, studies were on patient satisfaction/ perception from caregiver's perspectives or from health care workers perspectives), leaving only 39 full text articles for analysis. 24 full text articles that examined patient satisfaction with tele-health service utilization, studies on patient satisfaction in community sample, and studies measuring patient satisfaction with scales other than patient satisfaction were excluded. Finally, 15 studies were included (Table 2).

5 relevant qualitative studies utilizing patient satisfaction survey for patient with Covid-19 were included for comprehensive understanding (Table 3). In the current review, no study till date could be identified assessing satisfaction of hospitalized Covid-19 patients using a valid measurement instrument.

Scale Characteristics

Year of tool development: While 2 standard scales developed prior to 2000, 5 scales were developed between 2001–2010 followed by 8 scales developed between 2010–2020. Thus, the awareness on and advocacy for patients' satisfaction for improvement in healthcare functioning is not very old and recent advancement in objectively and scientifically measuring it has increased in last three decades.

Country-wise distribution (Figure 2): 44% of scales on patient satisfaction and specifically, patient satisfaction in patients with respiratory illness like SARS, MARS were contributed by Europe, followed by other countries including India (20%), USA (13.33%). Australia, Singapore, China and Hong Kong contributed 6.66% each.

Type of rating scale: All the 15 scales reviewed in the current study were in Likert type format, rated by the participants in a self-report format.

Number of items: The number of items in the scales ranged from 6 in Satisfaction Assessment Questions) to 90 in Quality-of-Care Questionnaire. The patient satisfaction questionnaire with 50 items also has a short version called, Patient Satisfaction Questionnaire Short Form (PSQ-18) with 18 items.

Response format (Figure 3): 60% of the scales (N = 9) followed a 5-point and 13.33%(N = 2) scales followed 4-point Likert response format. One scale was in a 7-point response format (6.66%), one (6.66%) had multiple response formats (4 versions) and one scale was not specific (6.66%).

Scale Domains: Multiple domains of patient satisfaction were assessed in 11 studies (73.33%). The number of domains ranged from 4 domains (Doctors' care quality, Nurses' care quality, Quality of the environment, and facilities) to 10 domains (general information, improvement in health, infrastructure, availability of services, Services providers, time spent, communication, billing, cleanliness and

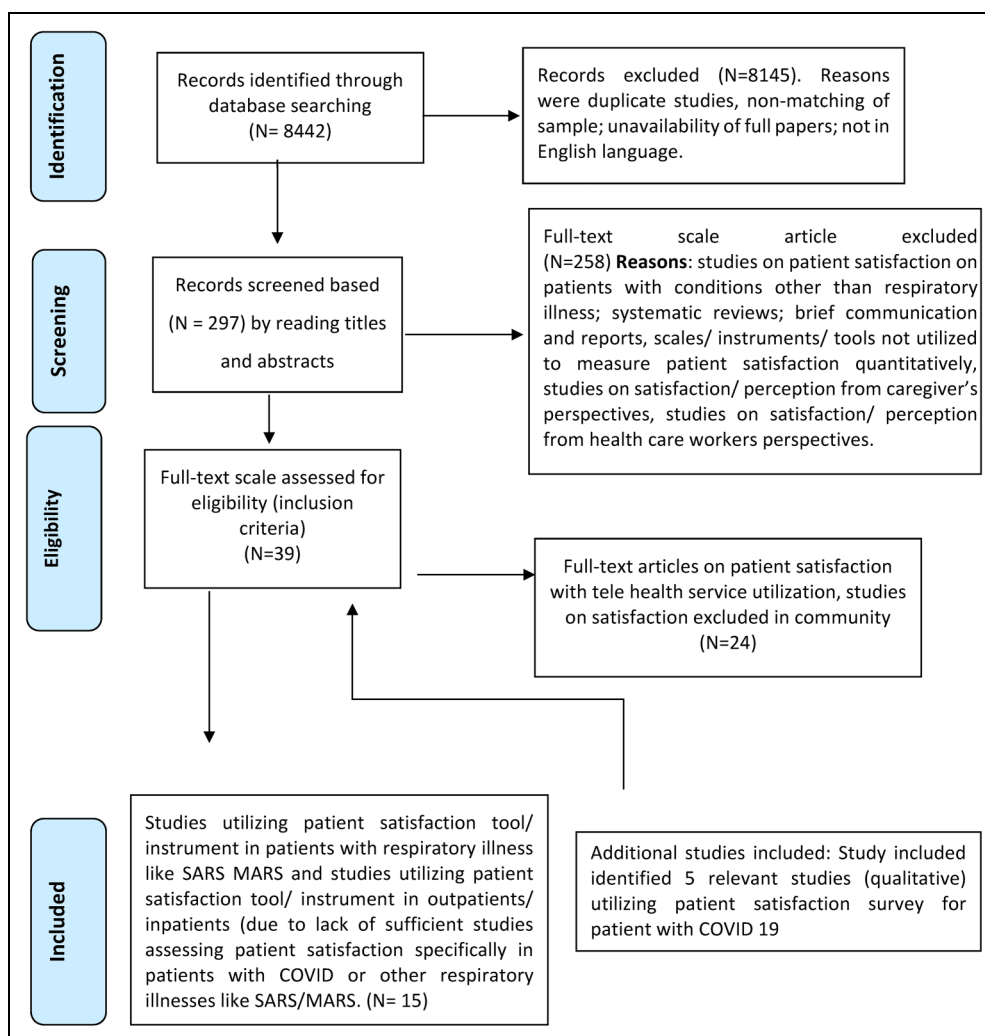


Figure 1. Flow chart of inclusion of studies (PRISMA, 2009).

confidentiality in the patient satisfaction). 2 scales (13.33%) were unidimensional and 2 (13.33%) were silent on scale dimensions.

Standardization Sample Group: Scale validation sample ranged from a broad sample including adult patients seeking hospital services in various departments to assessing patient satisfaction in specific populations such as patients suffering from chronic conditions, receiving lung transplants, or radiotherapy or incontinence treatment etc. however, except Covid-19.

Psychometric Properties: Except two scales (13.33%), 13 scales (86.66%) had established psychometric properties. For most of the scales with reported psychometric properties, high Cronbach alpha values was the method of assessing internal consistency/ reliability. One scale reported Mokken's ρ (rho) and Pearson Separation index was used in Primary Care Satisfaction Scale. For reporting validity of the scales' construct, concurrent, face and content validity were reported.

Survey Analysis (Table 3): All five descriptive surveys (online/offline mode) were carried out on the Covid-19 treatment seeking patients, two were semi-structured and three

were casual surveys. These studies neither specify the survey domains/theme of enquiry nor the number of items on which the data was generated. Except the online survey (N= 4,598) done in China, other surveys had a very small sample size ranging from 11–12 to 76–300.

Quality of Tools

Some scales have focused on patients utilizing inpatient services as compared to others emphasizing on patients seeking outpatient treatment. Also, the study population has been varied in terms of certain studies focusing on broad sample seeking services from various hospital units to certain studies with a very narrow focus on one specific condition. Moreover, the studies in the current review are diverse in terms of research objectives, sample size, context (e.g.; scale development, adaptation in other language etc.), target sample group and study methodology. Also, as patient satisfaction itself is a multifaceted construct, studies explored contextual domains of patient satisfaction.

Table 2. Characteristics of Tools Measuring Patient Satisfaction.

S.N. me Scale	Author(s) and publication year	Sample	Items	Measured dimensions	Types of scale	Psychometric properties	Language	Country	Validation studies
1. Short Patient Satisfaction Questionnaire Scale	Konerding (9) et al. (2019)	1202 patients from six different countries	6	Not mentioned	5-point scale Likert Type	Inter item correlation, Regression	English	Hong Kong	Not available
2. Patient Satisfaction Scale	Javadekar (10) et al. (2017)	103 admitted patients	40	Ten Dimensions: General information, Improvement in health, Infrastructure, availability of services, Services providers, Time spent, Communication, Billing, Cleanliness and confidentiality	5-point scale Likert Type	Not mentioned	English	India	Not available
3. Primary Care Satisfaction Scale (PCSS)	Cimas (11) et al. (2016)	Primary Care Attending Adult patients (N = 3,020)	10	Unidimensional	5-point scale Likert Type	Reliability: Pearson Separation Index (0.79), satisfactory convergent validity with overall satisfaction with primary care	English	Spain	Not available
4. In-Patient Satisfaction Questionnaire For The Chinese Population	Wei (12) et al. (2015)	Conscious patients who had stayed in the hospital for over three days (N = 6,640 + 695 in pilot)	28	Four Dimensions: Doctors' care quality, Nurses' care quality, Quality of the environment and facilities, Comprehensive quality.	5-point scale Likert Type	Factor analysis, Cronbach's alpha coefficients (each dimension): above 0.7, inter-subscale correlation: 0.72–0.83.	Chinese	China	Not available
5. Hospital Quality Questionnaire	Itumalla (13) et al. (2014)	246 in-patients	25	Seven Dimensions: Medical, Nursing, Support, Administrative services, Patient safety, Communication, Hospital infrastructure	Not mentioned	Cronbach's Alpha (.75 to .97), Content validity, Face validity, Factor Analysis	English	India	Not available
6. Patient-Satisfaction Questionnaire for Outpatients	Goel (14) et al. (2014)	942 outpatients	17	Six Dimensions: Location of the health facility, administration, the waiting area, physician, pharmacy and basic facility	5-point scale, Likert Type	Cronbach's alpha (0.72-0.93), test-retest reliability (0.54 to 0.80) Construct validity.	English	India	Not available

(continued)

Table 2. (continued)

S.N.	me Scale	Author(s) and publication year	Sample	Items	Measured dimensions	Types of scale	Psychometric properties	Language	Country	Validation studies
7.	Assessment of Patient Satisfaction Scale	Hawthorne (15) et al. (2013)	Females undergoing Post urinary incontinence treatment (physiotherapy or surgery), recruited from two incontinence clinics (N = 420)	7	Seven Dimensions: Effectiveness, Information, Technical skill, Participation, Relationship Access and facilities, Satisfaction general/other	5-point scale, Likert Type	Convergent and Divergent Validity Cronbach alpha (0.86), Mokken's ρ (rho) Discriminatory functional analysis performed	English	Australia	Not available
8.	Patients' Overall Satisfaction with Primary Care Physicians	Hojat (16) et al. 2011	535 outpatients	10	Unidimensional	7-point scale, Likert Type	Cronbach's alpha (0.97), item total correlation, factor analysis, concurrent validity, criterion validity	English	USA	Not available
9.	A Core Questionnaire for the Assessment of Patient Satisfaction in Academic Hospitals	Kleefstra (17) et al. 2010	40,678 patients	16	Six dimensions: Admission procedure Nursing care Medical care Information Patient autonomy Discharge and aftercare	5-point scale, Likert Type	Cronbach's alpha (0.79 to 0.88) Factor analysis Regression	English Dutch	Netherlands	Not available
10.	Patient Satisfaction with Doctor-Patient Interaction	Tang (18) et al. (2005)	Patients visiting radiotherapy center during the Severe Acute Respiratory Syndrome outbreak (N = 149)	29 + 1 (part 1) and 15 (part 2)	Four Domains of satisfaction with Doctor-Patient Interaction: Information exchange, Interpersonal skills, Empathy, Quality of time; Two Domain Knowledge about SARS: General questions about SARS knowledge Satisfaction with SARS precautions and Open-ended questions	Four-point scale, Likert Type	Not Available	English/ Chinese	Singapore	Respiratory inhalation device satisfaction and preference and has been validated in both patients with Asthma and patients with COPD.
11.	In-Patient Satisfaction Questionnaire	González (19) et al. (2005)	650 discharged patients	34	Six dimensions: Information and medical care, Nursing care, Comfort, Visiting Privacy Cleanliness	Response scale varied number of options,	Cronbach's alpha (.70 to.90), Factor analysis	English	Spain	Not available

(continued)

Table 2. (continued)

S.N. me Scale	Author(s) and publication year	Sample	Items	Measured dimensions	Types of scale	Psychometric properties	Language	Country	Validation studies
12. Short Questionnaire for Out-Of-Hours Care (SQOC)	Salisbury (20) et al. (2005)	People contacting an out-of-hours GP co-operative (N = 1,906)	7	Six Dimensions: Contacting the service, Receptionist, Wait for visit, Doctor's manner, Explanation and advice, Overall satisfaction	ranging from three to six. Likert Type Five-point scale, Likert Type	Cronbach's alpha Construct validity Concurrent validity (0.50–0.54)	English	United Kingdom	Not available
13. The Picker Patient Experience Questionnaire	Jenkinson(21) et al. (2002)	62,925 Acute Care Hospital Patient	15	Not mentioned	Likert Type Multiple scales	Cronbach's alpha (.80 to.87)	English	United Kingdom	Norwegian acute care patients
14. Quality of Care Questionnaires	Arnetz (22) et al. (1996)	Patients in Each department, divided as equally as possible among inpatients and Outpatients (n = 1,834 + 2,499)	90	Eight Dimensions: Information-illness, Information-routines, Physical environment, Security, Accessibility, Diagnosis, care, Work environment	Four- point scale, Likert Type, (Except single domaine is 5 point scale)	Cronbach's alpha (0.80–0.60), Inter item correlation, Factor analysis, correlation analysis	English	Sweden	Swedish health care Environment
15. Patient Satisfaction Questionnaire Short Form (PSQ-18)	Marshall (23) et al. (1994)	Patients diagnosed with heart diseases, hypertension, diabetes, depression symptoms (n = 2,197)	18	Seven Dimensions: General satisfaction, Technical quality, Interpersonal manner, Communication, Financial aspects, Time spent with doctor, Accessibility and convenience	Five-point scale, Likert Type	Cronbach's alpha (0.91 to 1)	English	USA	<ul style="list-style-type: none"> Indian health care environment for OPD patient Malaysian health care environment for OPD patient

Table 3. Studies on Patient Satisfaction Survey for COVID 19 Patients.

SN	Author(s) and publication Year	Sample	Items	Measured Dimensions (Patient Satisfaction)	Types of scale	Language	Country
1.	Liu et al. (24) (2020)	Data from patients receiving remote diagnosis and treatment via consultation services for COVID-19 concerns at the online outpatient clinic (n = 4,589)	NA	Online satisfaction survey	Survey	English/Chinese	China
2.	Tomlinson et al. (25) (2020)	Inpatients included in the audit had a confirmed or suspected diagnosis of COVID-19 infection (n = 76)	NA	Patient satisfaction form	Survey	English	United Kingdom
3.	Shaban et al. (26) (2020)	COVID-19 patients admitted to a designated COVID-19 facility (n = 11)	NA	5 themes: "Knowing About COVID-19," "Planning for, and responding to, COVID-19," "Being infected," "Life in isolation and the Room," and "Post-discharge life."	Semi structured interviews; lived experiences	English	Australia
4.	Tuker et al. (27) (2020)	Patients with COVID-19 symptoms enrolled in COVID-19-specific remote patient monitoring solution (n = 300)	NA	Satisfaction survey	Survey	English	USA
5.	Tiwari et al. (28) (2003)	Diagnosed and admitted for SARS (n = 12)	NA	Patient's perception of their illness and experience: Three themes emerged: (1) concern, fears and frustration; (2) a Change in outlook; and (3) nurse as career.	Semi structured interviews	Chinese	Hong Kong

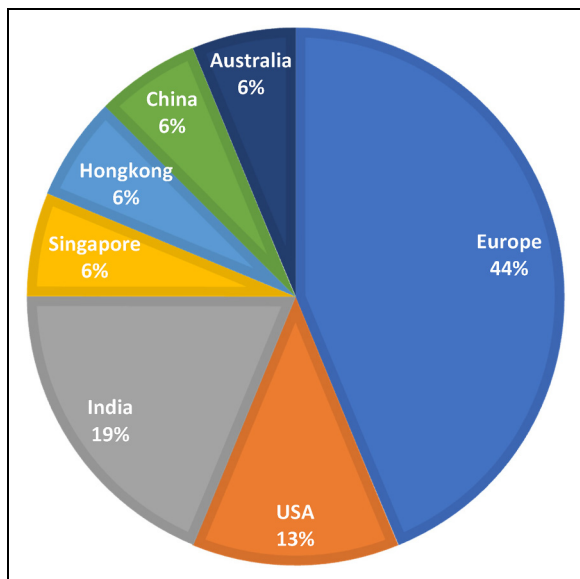


Figure 2. Country wise distribution of the scales.

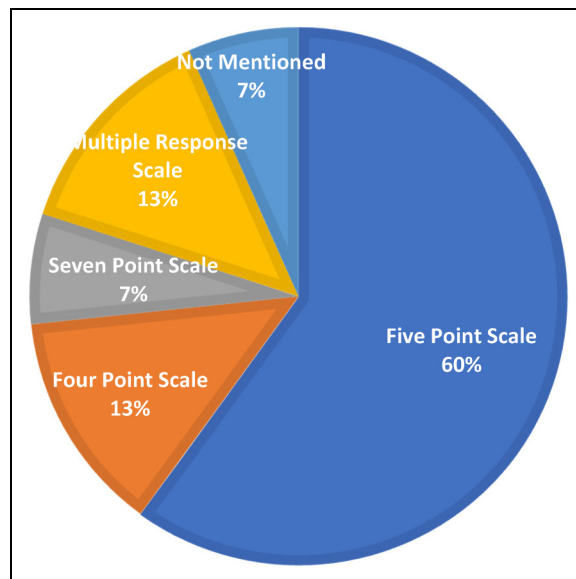


Figure 3. Response formats of the scales.

Discussion

Patient satisfaction is a common health care quality metric, however often overlooked and underemphasized. The key

domains of patient satisfaction parameters play a key role in measuring right assessment indicators. The role of confounding variables will always be there in each study on

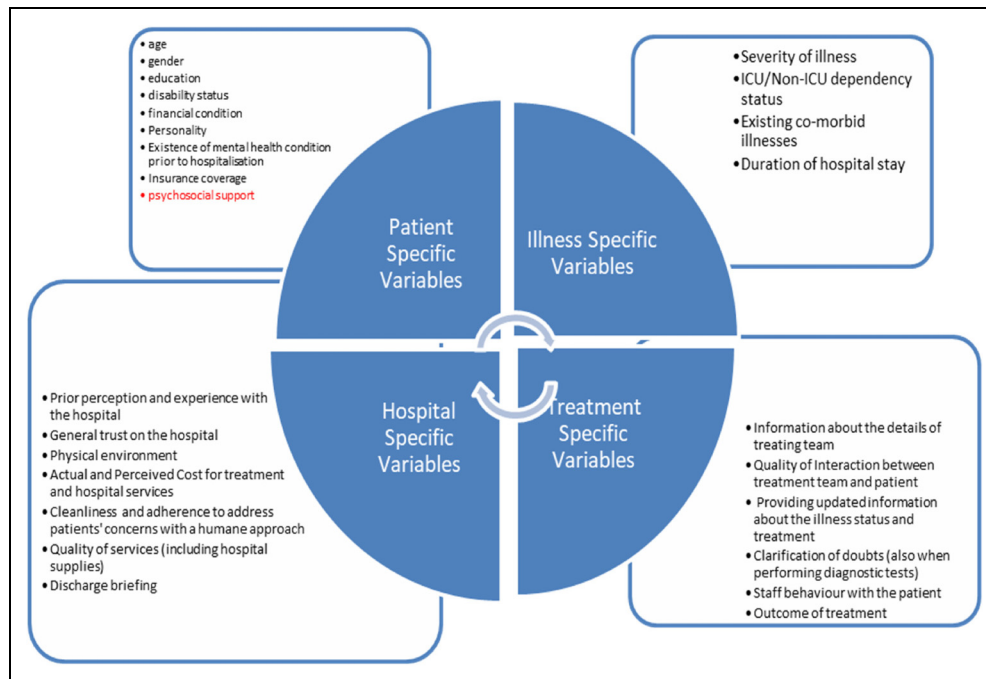


Figure 4. Assessment indicators model for patient satisfaction in pandemic.

patient satisfaction (29), however, scrutiny of existing scales is helpful in selecting and/or cross-cultural adaptation of the tool easier. Again, in the absence of patient satisfaction tool for Covid-19 patients issues the review will be helpful in developing new tools for objective assessment of patient satisfaction among Covid-19 hospitalized patients. High levels of satisfaction with health-care services have an impact in health not only for covid-19 patients (16).

The issue of lack or inadequate psychometric properties of patient satisfaction instruments (30), however, subsequently was addressed and Assessment of Patient Satisfaction Scale (15) and Primary Care Satisfaction Scale (11) had better psychometric properties. With respect to validation, the Patient Satisfaction-and-Preference Questionnaire (PASAPQ) Direct Comparison Version has been validated for patients with Asthma and COPD; Patient Satisfaction With Doctor-Patient Interaction during the Severe Acute Respiratory Syndrome Outbreak in a radiotherapy center has been validated as measure of respiratory inhalation device satisfaction and preference for patients with Asthma; Quality of Care Questionnaire has been validated for Swedish health care environments. Thus, no scale till date has been validated for the use with patients with Covid-19.

While patient specific variables in patient satisfaction largely encompass patient's socio-economic background and corresponding expectations from the hospital/treatment and the quality health care services provided by the health care, patients' satisfaction is established that degree of patients' satisfaction reduces with longer stay as an in-patient (31). In Covid-19 cases, this may become an important parameter as there is no out-patient treatment and discharge

protocol at least 11 days \pm 3days in case of mild-moderate but longer stay of 21–30 days is average for severe patients. Patient satisfaction during initial months of Covid-19 (especially before September 2020) could be different as compared to patients admitted after that due to many reasons such as clarity in discharge protocol, more information on fomite contamination, information about vaccine, and better sensitization among the health care staffs and treatment team to enhance communication with the patients admitted.

Treatment related financial implications during the pandemic can be a key determinant of perceived patient satisfaction of hospitalized patients as improvements in quality will require increases in cost (or conversely, cost reductions could reduce quality (32). And due to increased demands on hospitals during Covid-19 peak periods, quality of care (particularly as perceived by the patients) may get affected and in turn the perceived cost-benefit analysis by the patient can play a significant role in patient satisfaction regarding hospital care. Quality can be a significant predictor of cost and vice versa (33). Cost of hospitalisation and patients' satisfaction can have inverse relationship, especially due to economic slowdown during pandemic. In case of low-cost treatment or free treatment, in the context of Covid-19, when there are financial difficulties at almost all levels, can in fact be a more important parameter of increased patient satisfaction. The Patient Satisfaction Questionnaire-18 (and the long version with 55 items) is the only scale that includes financial aspects of patient satisfaction. One possibility is that)

Doctor-patient interaction in the presence of Covid-19 specific safety measures such as masks, goggles, head gear, PPE the quality of communication can be obstructed.

In addition, these precautionary measures found to affect the perception of empathy in the patient satisfaction with Doctor–Patient Interaction Scale during SARS (18).

On the basis of the review of scales on general patient satisfaction developed in early 1990s and before that (34–39), these 11 scales and few systematic reviews (6) on patient satisfaction during SARS, we can outline the different determinants of patient satisfaction in pandemic.

A new scale incorporating items across these four domains (Figure 4: patient, illness, treatment, and hospital specific services) such as compulsory intake and discharge briefing, empathetic interaction by the treating team and hospital staff, hospital infection prevention measures, treatment of co-morbidities (particularly in case of mild-moderate hospitalized patients), cost of the hospital services and insurance coverage should be included in the new scale.

Conclusion

Patient satisfaction across four domains namely, patient, illness, treatment, and hospital specific services with a methodologically sound new or modified scale can be useful during Covid-19 period. And patient satisfaction as a relevant outcome in health care delivery and clinical practice can result in better health status and quality of health care services. Therefore, improvement of patient satisfaction scales should be a priority in Covid-19 health care.

Declaration

This research article is a part of All India Institute of Medical Sciences (AIIMS) intra-mural research project which approved by Institute Ethics Committee AIIMS New Delhi (Ref. No. IEC-320/27/04/20). This research paper is a systematic review, in this case statement of human animal right and statement of informed consent is not required.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the All India Institute of Medical Sciences New Delhi India (grant number A- Covid 61).

Author's Contribution

1. Dr. Sidhartha Satpathy: Conceptualization and editing.
2. Dr. Laxmi Tej Wundaville: Conceptualization and data collection.
3. Dr. Sujata Satapathy: Conceptualization, writing and editing.
4. Apoorva Malik: Data extraction and data analysis.
5. Dr. Sheetal Singh: Conceptualization and editing.
6. Dr. Angel Rajan Singh: Conceptualization and editing.
7. Dr. Rakesh Chadda: Conceptualization and editing.
8. Dr. Vijay Prasad Barre: Conceptualization.

9. Dr. Shraddhesh Kumar Tiwari: Data extraction and data analysis.

ORCID iD

Shraddhesh Kumar Tiwari  <https://orcid.org/0000-0002-7315-7581>

References

1. Afolabi MO, Afolabi ERI, Faleye BA. Construct validation of an instrument to measure patient satisfaction with pharmacy services in Nigerian hospitals. *Afr Health Sci*. 2013;12(4):538-44.
2. World Health Organization. The World health report: 1999: Making a difference. Geneva: World Health Organization; 1999. <https://apps.who.int/iris/handle/10665/42167>.
3. Arshad AS, et al. Measuring patient satisfaction: a cross sectional study to improve quality of care at a tertiary care hospital. *Healthline. J Ind Assoc Prev Soc Med*. 2012;3(1):59-62.
4. Korda H. Patient satisfaction: the new rules of engagement. *The Health Care Blog*. Last access June 30, 2014. <http://thehealthcareblog.com/blog/2012/10/26/patient-satisfaction-the-new-rules-of-engagement/>.
5. Doyle C, Lennox L, Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*. 2013;3(1):e001570. doi: 10.1136/bmjopen-2012-001570
6. Batbaatar E, Dorjdagva J, Luvsannyam A, Savino MM, Amenta P. Determinants of patient satisfaction: a systematic review. *Perspect Public Health*. 2017;137(2):89-101. doi: 10.1177/1757913916634136
7. Vukovic M, Gvozdenovic BS, Gajic T, et al. Validation of a patient satisfaction questionnaire in primary health care. *Public Health*. 2012;126 (8):710-718.
8. Granado de la Orden S, Rodríguez Rieiro C, Olmedo Lucerón Mdel C, Chacón Garía A, Vigil Escribano D, Rodríguez Pérez P. Diseño y validación de un cuestionario para evaluar la satisfacción de los pacientes atendidos en las consultas externas de un hospital de Madrid en 2006 [design and validation of a questionnaire of the hospital outpatient clinics in Madrid, Spain, 2006]. *Rev Esp Salud Publica*. 2007;81(6):637-45. doi: 10.1590/s1135-57272007000600007
9. Konerding U, Bowen T, Elkhuisen SG, Faubel R, Forte P, Karampli E, et al. Development of a universal short patient satisfaction questionnaire on the basis of SERVQUAL: psychometric analyses with data of diabetes and stroke patients from six different European countries. *PLoS One*. 2019;14(10): e0197924. doi: 10.1371/journal.pone.0197924
10. Javadekar S, Raje S, Javadekar S. Development of a comprehensive tool for quality and efficacy of services provided. *Pravara Med Rev*. 2017;9(3):14-18.
11. Cimas M, Ayala A, García-Pérez S, Sarria-Santamera A, Forjaz MJ. The patient satisfaction questionnaire of EUprimecare project: measurement properties. *Int J Qual Health Care*. 2016;28(3):275-80. doi: 10.1093/intqhc/mzw024
12. Wei J, Wang XL, Yang HB, Yang TB. Development of an In-patient satisfaction questionnaire for the Chinese population.

- PLoS One. 2015;10(12):e0144785. doi: 10.1371/journal.pone.0144785
13. Itumalla R, Acharyulu G, Shekhar B. Development of hospital qual: a service quality scale for measuring In-patient services in hospital. *Oper Supply Chain Manage Int J*. 2014;7(2):54-63.
 14. Goel S, Sharma D, Singh A. Development and validation of a patient satisfaction questionnaire for outpatients attending health centers in north Indian cities. *J Health Serv Res Policy*. 2014;19(2):85-93. doi: 10.1177/1355819613508381
 15. Hawthorne G, Sansoni J, Hayes L, Marosszeky N, Sansoni E. Measuring patient satisfaction with health care treatment using the short assessment of patient satisfaction measure delivered superior and robust satisfaction estimates. *J Clin Epidemiol*. 2014;67(5):527-37. doi: 10.1016/j.jclinepi.2013.12.010
 16. Hojat M, Louis DZ, Maxwell K, Markham FW, Wender RC, Gonnella JS. A brief instrument to measure patients' overall satisfaction with primary care physicians. *Fam Med*. 2011;43(6):412-7.
 17. Kleefstra SM, Kool RB, Veldkamp CM, Winters-van der Meer AC, Mens MA, Blijham GH, et al. A core questionnaire for the assessment of patient satisfaction in academic hospitals in The Netherlands: development and first results in a nationwide study. *Qual Saf Health Care*. 2010;19(5):e24. doi: 10.1136/qshc.2008.030825
 18. Tang JI, Shakespeare TP, Zhang XJ, Lu JJ, Liang S, Wynne CJ, et al. Patient satisfaction with doctor-patient interaction in a radiotherapy center during the severe acute respiratory syndrome outbreak. *Australas Radiol*. 2005;49(4):304-11. doi: 10.1111/j.1440-1673.2005.01467.x
 19. González N, Quintana JM, Bilbao A, Escobar A, Aizpuru F, Thompson A, et al. Development and validation of an in-patient satisfaction questionnaire. *Int J Qual Health Care*. 2005;17(6):465-72. doi: 10.1093/intqhc/mzi067
 20. Salisbury C, Burgess A, Lattimer V, Heaney D, Walker J, Turnbull J, et al. Developing a standard short questionnaire for the assessment of patient satisfaction with out-of-hours primary care. *Fam Pract*. 2005;22(5):560-569. doi: 10.1093/fampra/cmi050
 21. Jenkinson C, Coulter A, Reeves R, Bruster S, Richards N. Properties of the picker patient experience questionnaire in a randomized controlled trial of long versus short form survey instruments. *J Public Health Med*. 2003;25(3):197-201. doi: 10.1093/pubmed/fdg049
 22. Arnetz JE, Arnetz BB. The development and application of a patient satisfaction measurement system for hospital-wide quality improvement. *Int J Qual Health Care*. 1996;8(6):555-66. doi: 10.1093/intqhc/8.6.555
 23. Marshall Grant N, Hays Ron D. The Patient Satisfaction Questionnaire Short Form (PSQ-18). Santa Monica, CA: RAND Corporation, 1994. <https://www.rand.org/pubs/papers/P7865.html>. Also available in print form.
 24. Liu L, Gu J, Shao F, Liang X, Yue L, Cheng Q, et al. Application and preliminary outcomes of remote diagnosis and treatment during the COVID-19 outbreak: retrospective cohort study. *JMIR Mhealth Uhealth*. 2020;8(7):e19417. doi: 10.2196/19417
 25. Tomlinson J, Khan S, Page G. Incorporating SPACES recommendations to the COVID-19 ward care approach at the royal bournemouth hospital. *Clin Med (Lond)*. 2020;20(6):e234-237. doi:10.7861/clinmed.2020-0613
 26. Shaban RZ, Nahidi S, Sotomayor-Castillo C, et al. SARS-CoV-2 infection and COVID-19: the lived experience and perceptions of patients in isolation and care in an Australian healthcare setting. *Am J Infect Control*. 2020;48(12):1445-50. doi:10.1016/j.ajic.2020.08.032
 27. Annis T, Pleasants S, Hultman G, Lindemann E, Thompson JA, Billecke S, et al. Rapid implementation of a COVID-19 remote patient monitoring program. *J Am Med Inform Assoc*. 2020;27(8):1326-30. doi: 10.1093/jamia/ocaa097
 28. Tiwari A, Chan S, Wong A, Tai J, Cheng K, Chan J. Tsang K; nursing task force on anti-SARS of queen mary hospital. Severe acute respiratory syndrome (SARS) in Hong Kong: patients' experiences. *Nurs Outlook*. 2003;51(5):212-219. doi: 10.1016/j.outlook.2003.07.002
 29. Fenton JJ, Jerant AF, Bertakis KD, Franks P. The cost of satisfaction: a national study of patient satisfaction, health care utilization, expenditures, and mortality. *Arch Intern Med*. 2012;172(5):405-11. doi:10.1001/archinternmed.2011.1662
 30. Evans RG, Edwards A, Evans S, Elwyn B, Elwyn G. Assessing the practising physician using patient surveys: a systematic review of instruments and feedback methods. *Fam Pract*. 2007;24(2):117-27. doi: 10.1093/fampra/cml072
 31. Kononov OE, Uspenskaia IV, Ponomareva GA. [Cost availability and patient satisfaction of hospital care]. *Probl Sotsialnoi Gig Zdravookhranennii Istor Med*. 2006;4:10-11. Russian.
 32. Anderson GF, Chalkidou K. Spending on medical care: more is better? [editorial]. *JAMA*. 2008;299:2444-2445.
 33. Sheikh K. Quality of care, cost, and patient satisfaction. *Med Care*. 2010;48(6):570. doi: 10.1097/MLR.0b013e3181e0b277
 34. Bruster S, Jarman B, Bosanquet N, Weston D, Erens R, Delbanco TL. National survey of hospital patients. *Br Med J*. 1994;309:1542-1546.
 35. Rubin HR. Can patients evaluate the quality of hospital care? *Med Care Rev*. 1990;47(3):267-326. doi: 10.1177/107755879004700302
 36. Larsen DL, Attkisson CC, Hargreaves WA, Nguyen TD. Assessment of client/patient satisfaction: development of a general scale. *Eval Program Plann*. 1979;2(3):197-207. doi: 10.1016/0149-7189(79)90094-6
 37. Greenfield TK, Attkisson CC. Steps toward a multifactorial satisfaction scale for primary care and mental health services. *Eval Progr Plann*. 1989;12:271-278.
 38. Carey R G, Seibert J H. A patient survey system to measure quality improvement: questionnaire reliability and validity. *Med Care*. 1993;31:834-45.
 39. Charles C, Gauld M, Chambers L, O'Brien B, Haynes RB, Label R. How was your hospital stay? Patients' reports about their care in Canadian hospitals. *Can Med Assoc J*. 1994;150:1813-22.