

Development of a Measurement Tool to Assess the Inpatient Experience in a Tertiary Care hospital

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Abstract

Patient experience is a way by which the patient's view about the healthcare system can be measured. It mainly emphasises on the various ranges of interactions between the patients and the system of health care, including the patient care starting from the communication of the doctors, nurses, hospital staff, and other physical facilities. The measurement of patient experience has various kinds of approaches that may be qualitative, quantitative, or mixed. Whatever the approach may be, the strategy for improving the experience of patients is measuring things that matter most to patients, and it acts as an essential component for a successful hospital management strategy. With reference to the Indian healthcare system, improvement in quality of care is challenging because of the unavailability of reliable data and technical backwardness. In the study, the primary questionnaire was developed by the review of globally available tools and studying the work process of inpatient touch point areas of the given tertiary care hospital. Through the analysis, we observed that the developed questionnaire served as a good tool to measure the patient experience. The inpatient experience measurement tool is not intended to be used as a stand-alone questionnaire, but can be modified according to the necessities of the healthcare organizations.

Keywords : patient experience, health care centers, measurement tools, quality of care, inpatient department

JEL Classification : I10, I13, I18, I19

Paper Submission Date : August 29, 2017 ; **Paper sent back for Revision :** January 17, 2018 ; **Paper Acceptance Date :** March 27, 2018

The patient experience is one of the top priorities of hospitals over the upcoming years. Many of the organizations are struggling to know what patient - centered care exactly means and how it can be achieved. A number of patient experience measurement tools are widely available to assess the quality of care from the patient's perspective. The key factors of measuring patient experience are very important to improve the quality of healthcare which in turn focuses on the patient's experience (Institute for Healthcare Improvement, n.d.). By just compiling a uniform set of questions on patient experience cannot measure patients' perceptions. It needs the analysis of various kinds of surveys with varieties of valid questions of different factors to record the different topics and experiences of the patients. Some of the studies have found out that the patients expect good care and communication by the nurses and doctors and they expect to be treated respectfully. A better way to find out whether a patient is experiencing good care is through good communication from the doctors and nurses by

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explaining the patient about his/her condition. This can be captured by conducting the patient experience survey. These are best measured by questions in detail in each situation (Coulter, Fitzpatrick, & Cornwell, 2009). It was found that the best method of measuring the quality of patients' experiences is through direct feedback from the patients themselves (Institute for Healthcare improvement, n.d.).

Real changes can be made in the health system when the patients' feedback is taken periodically and working upon these issues (Garratt, Solheim, & Danielsen, 2008). While considering the quality of care, accreditation of hospitals is a universally accepted measure to improve the quality of medical care. Besides the classical quality indicators such as morbidity, mortality, hospital acquired infections, etc., patient experience is an important component (Jenkinson, Coulter, Bruster, Richards, & Chandola, 2002). Accreditation is advantageous for cost containment ; standardization of procedures ; or even it can market doctors, nurses, and other staff. However, some studies have proven that accreditation is an effective instrument for improvements of quality that are relevant for positive patient experience (Weiler, Hoffmann, & Strehlau - Schwoll, 2003).

Patient experience is defined as the sum of all interactions shaped by an organization's culture that influences patient perceptions across the continuum of care. Some research studies opinion that the overall satisfaction is directly related to the clinical outcome (Jha, Orav, Zheng, Epstein, 2008) ; whereas, few others found that the patient experience was not only strongly related to better outcome, but also on how well the doctors and the nurses communicated with the patients rather than other facilities related to patient experience such as food, room, etc. Patient experience emphasizes on various modes of interactions the patients will have with the health care services, which includes their care starting from the communication of the doctors, nurses, hospital staffs, and other physical facilities (Boulding, Glickman, Manary, Schulman, & Staelin, 2017). According to the King's Fund report on patient experience measures for the British National Health System (NHS), patient experience is the way by which the patient's view about the healthcare system is to be measured (Raleigh, Thompson, Jabbal, Graham, Sizmur, & Coulter, 2015). There is no exact domain which is more important or less important. The report also criticized that some authors consider patient experience sometimes as the clinical outcome following the treatment and sometimes as a process measure in which the care has been rendered.

The terms - patient satisfaction and patient experience are often used symmetrically, but some experts don't consider them as the same entities. Patient satisfaction is about knowing whether the patient's expectations about the health encounter are met or not ; two different people who receive the same care may have different expectations about the healthcare service delivery and they can give different satisfaction ratings ; whereas, patient expectation, on the other hand, is to find out whether something that they expected to happen in a healthcare system such as communication of the healthcare providers actually happened, and if it happened, how often it happened (Browne, Roseman, Shaller, and Edgman - Levitan, 2010).

The measurement of patient experience is a critical step towards the improvisation of the quality of care in the healthcare system. The information which is obtained during the survey can reveal some of the gaps in the quality of care and the inefficient implementation of certain quality measures. Although in the collection of information, the survey is essential, using this data for the improvement must be the ultimate goal (Nelson, Rust, Zahorik, Rose, Batalden, & Siemanski, 1992).

A study conducted in 1992 about patient perception of quality showed nearly 30% variation in financial performance (Rave, Geyer, Reeder, Ernst, Goldberg, & Barnard, 2003). The improvement of patient experience also results in greater level of employee satisfaction (Atkins, Marshall, & Javalgi, 1996). Similarly, nurse's satisfaction rate is strongly correlated with patient experience and recommendation of the hospital to their relatives and friends (Wiig et al., 2013).

Quickly increasing expenses in medical care services is an expanding reason for concern in India. With the increasing demand of medical care, the government has understood the need to enhance medical care benefits and has ventured to manage the healthcare benefits by introducing different quality accreditation standards like the

NABH (National Accreditation Board for Hospitals & Healthcare Providers) and NABL (National Accreditation Board for Testing and Calibration Laboratories) (Jawahar,2007).

A number of studies have mentioned that quality improvements followed by the collection of patient's opinion by the hospitals for these measurement surveys has become the main tools. So, the implementation of the appropriate measurement tool is useful in monitoring the performances in health service systems and would definitely improve the patient experience.

Objectives of the Study

- ✎ To identify and compare international and national measurement tools of patient experience.
- ✎ To develop a comprehensive tool to measure patient experience covering all the patient touch point areas.
- ✎ To assess patient experience in a tertiary care hospital.
- ✎ To validate the patient experience questionnaire through the analysis.

Methodology

(1) Study Design : A survey was conducted on 220 patients from the in-patient department of a tertiary care hospital. The study was carried out from February - July 2016 in a given tertiary care hospital located in Bengaluru.

(2) Methods of Sampling : Convenient sampling method was used and the patients who were admitted for any kind of medical services were included in the study.

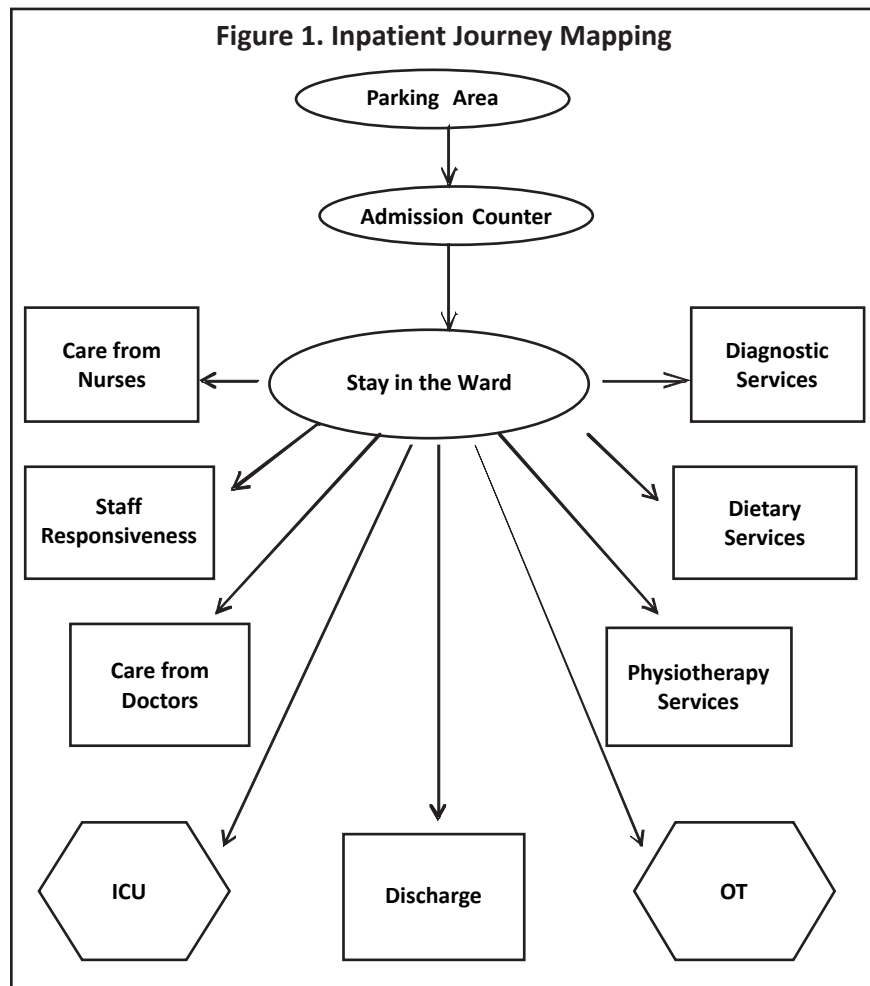
(3) Sample Size : Two hundred and twenty (220) inpatients who were admitted during the survey period participated in the study ; 95% confidence level, 5% margin of error, and 50% population proportion was considered for the sample size estimation. The number of patients who got admitted in the hospital (12 days) during the survey period was taken as population size, that is, 360. Thirty patients approximately got admitted in one day ($30 \times 12 = 360$). By considering the above factors, the sample size of 187 and above was estimated (Kadam & Bhalerao, 2010).

(4) Measuring Tool : The questionnaire used for the survey was in the form of a self-administered questionnaire and was designed using 4 point Likert scales.

(5) Data Collection : After going through the literature review on analysing the national and international patient experience measurement tools (La Vela & Gallan, 2014), the patient journey mapping was done for the inpatients. According to the mapping, work process of each unit was studied by considering the touch point areas of patients. The primary questionnaire was developed by arranging the questions in order following the touch point areas of the patient care of the hospital, aiming to improve the quality of the survey, and which would also help the hospital managers to find out the gaps identified in the health care system.

Data Analysis and Results

The data were analysed by descriptive statistics initially to give an overview of patient experience about the



services. To detect the correlation between dimensions of patient experience and the demographics such as - age and education status, Pearson's correlation was used. All results were analysed using the IBM SPSS Statistics Version 23, including factor analysis and Cronbach's alpha.

(1) Inpatient Journey Mapping : Patient journey mapping is shown in the Figure 1. The patient experience measurement tools, which are used globally, were studied and the work process of all the below mentioned areas were studied and then the questionnaire was prepared. A pilot study was conducted for 50 inpatients and the questionnaire was subjected to validity and reliability tests.

(2) Factor Analysis : To understand and identify the attributes of patient experience, an exploratory factor analysis was conducted of the baseline questionnaire responses. IBM SPSS software 20 was used to conduct the factor analysis. For inpatient questionnaire, 91.545% of the variance is explained by 12 factors from 145 attributes, which is a representative result considering the sample size of 50 respondents having the Eigen value of 1.015 as shown in the Table 1. Rotation matrix component is used to reduce the number of factors on which the variables are under investigation. In this analysis, doctor's skills, dietary staff attitude, care from anaesthesiologist, etc. are some of the attributes with the highest values as shown in the Table 1.

Table 1. Total Variance Explained

Factors for In-patient Experience (Component)	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	66.471	46.160	46.160	43.044	29.891	29.891
2	20.159	13.999	60.160	28.506	19.796	49.687
3	14.714	10.218	70.378	15.159	10.527	60.214
4	7.173	4.981	75.359	14.475	10.052	70.266
5	4.046	2.809	78.169	9.447	6.561	76.827
6	1.846	1.282	86.099	1.860	1.292	84.276
7	1.591	1.105	87.204	1.858	1.291	85.566
8	1.477	1.026	88.229	1.804	1.253	86.819
9	1.387	.963	89.193	1.780	1.236	88.055
10	1.230	.854	90.047	1.735	1.205	89.260
11	1.142	.793	90.840	1.683	1.169	90.429
12	1.015	.705	91.545	1.607	1.116	91.545

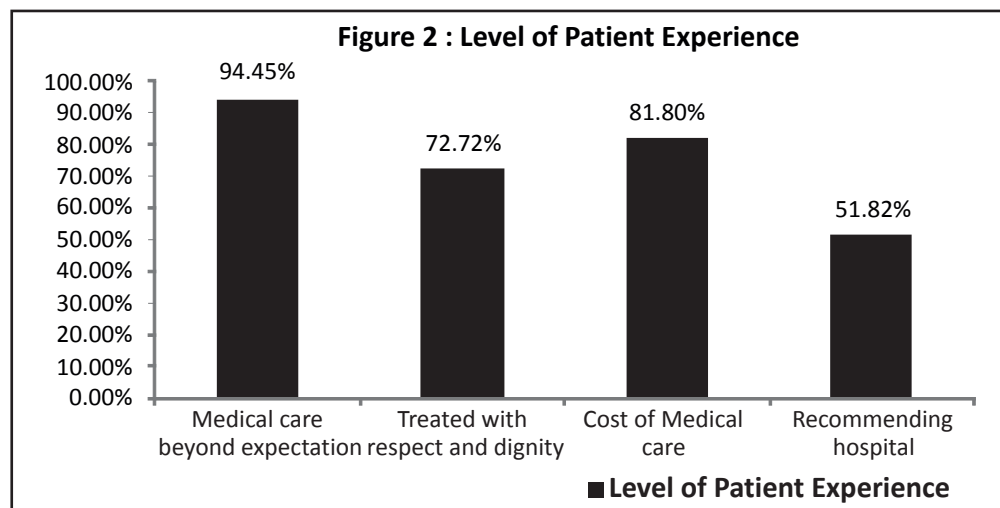
Table 2. Reliability Test

Sl. No.	Factors for In-Patient Experience Questionnaire	Cronbach's Alpha	No. of Items
1	Parking Services	.934	2
2	Admission Process	.633	4
3	Stay in the Ward	.678	4
4	Care from Doctors	.918	6
5	Care from Nurses	.853	5
6	Response from Staff	.953	3
7	Diagnostic Services	.969	7
8	OT Services	.978	9
9	ICU Services	.980	7
10	Physiotherapy Services	.990	5
11	Dietary Services	.975	5
12	Discharge Process	.903	2

Table 3. Inpatient Experience Results

Sl. No.	Factors for In-patient Experience Questionnaire	Better Experience (%)	Average Experience (%)	r - value	p value
1	Parking Services	62.8	37.22	0.00	0.51
2	Admission Process	71.7	28.30	-0.04	0.32
3	Stay in Ward	71.7	28.33	-0.08	0.25
4	Care from Doctor	82.7	17.29	0.02	0.47
5	Care from Nurses	81.0	18.98	0.03	0.55
6	Staff Responsiveness	75.0	25.01	0.05	0.40
7	Diagnostic Services	87.0	12.96	0.03	0.52
8	OT Services	72.0	28.03	-0.02	0.61
9	ICU Care	84.4	15.62	0.00	0.94
10	Physiotherapy Facilities	94.0	6.05	-0.02	0.58
11	Dietary Services	85.5	14.46	-0.03	0.48
12	Discharge Process	91.3	8.69	-0.01	0.57

Note : r = Correlation coefficient , p = level of significance (0.05, 0.01)



(i) Reliability (Internal Consistency) : Cronbach's alpha was used to measure the internal consistency or reliability of a patient experience, which is as shown in the Table 2.

(ii) Inpatient Experience Analysis : The Pearson's correlation coefficient results are shown in the Table 3. The overall impression about the IPD patient services are as follows: 94.45% of patients felt that they were provided with good medical care beyond their expectations, 72.72% of the patients felt that they were treated with respect and dignity, 81.8% of the patients expressed their opinion that their cost for medical care was appropriate. Lastly, 51.82% of the patients had an opinion that they were ready to recommend this hospital to their family and friends, as shown in the Figure 2.

Discussion

Development of a measurement tool has identified and quantified the factors which can measure the inpatient experience. The measures have performed well in the patient experience analysis. The development of such a standardized measurement tool has provided an opportunity to explore the relationship between the factors identified of the inpatient experience and psychological factors. This measurement tool provides an opportunity to increase our understanding of patients' experience of the medical care experienced at a hospital.

The respondents between the age group of 41 to 60 years and the group with primary level education had a good perception about the services ; the reason could be that most of the patients who came for healthcare services were of the same age group (middle age group) with similar level of education, who reported better patient experience than their counterparts in the younger and the older age groups. This shows that the older the age and less the education, the patient's positive perception about the health services increases.

Fifty two percent (52%) of the admitted patients had insurance policies, who didn't express their discontent towards the medical charges ; whereas, the patients who had to bear out-of-pocket expenses didn't express positive perception about the medical service charges. By this, it can be justified that less expenditure by the patients can lead to higher level of patient experience.

The factors such as Nursing Care, Dietary Services, and Investigation Services show a strong association with patient experience under inpatient services. Nursing Care and Doctor Care are important aspects in the in - patient services. The overall impression of medical care depends on the skills of the doctor and the care from the nurses. Dietary Services serve as the second most important component through which better patient experience can be

achieved. By this, it is understood that the feedback has to be given with priority to measure patient experience and to make the hospital staff more aware of the aspects for improving the quality of care beyond patients' expectations. Mainly, it is to be remembered that 'more satisfied patients, better health outcomes.'

Recommendations

Patient journey mapping was done, as shown in the Figure 1, and the areas which need improvements are identified and the recommendations are given :

- ✧ The organization should strive to work on technologically innovative approaches to improve the waiting time for the health check and radiological services; TAT for laboratory and radiology services; bed occupancy status; hospital stay and access for medications.
- ✧ Patients will have to spend a few minutes to finish the feedback form and may feel impatient, which could lead to the bias in the data collected. A better quality improvement can be made if there is a dedicated team to take the patient's feedback by adopting new technologies like- taking feedback by using apps which consume less time and it is easier to get the feedback.
- ✧ Financial counseling is necessary before the admission of the patients so that patients can have a clear view of the medical services charges. This may help in achieving higher level of patient experience.
- ✧ The communication from the receptionist gives the first impression of the hospital as soon as the patients walk into the hospital. Pleasant welcoming and respectful attitude of the reception gives the patient a warm feeling at the beginning and this affects the overall patient experience. All the medical as well as non-medical staff should undergo periodical training on soft skills. The patient expects support, empathy, and respect from the healthcare workers.
- ✧ Making improvement in the ambience in the semi-private wards in turn improves the patient experience of the admitted patients. A study has shown that room environment is an important factor in achieving higher level of patient experience.
- ✧ The discharge process is quite complex and involves many challenges. One of the studies explored that the six sigma methodology can be effective in improving the discharge time of the patients (El- Eid, Kaddoum, Tamim, & Hitti, 2015). This can be adopted to improve the delay in the discharge process.

Conclusion

In the study conducted, 94.45% of the inpatients expressed the opinion that they were provided with good medical care beyond their expectations. This indicates that the quality of healthcare provided by the hospital is appreciable. However, some areas like staff responsiveness, physical facilities, etc. are to be concentrated upon for improvement.

The developed measurement tool has been found to be a good representative of key inpatient experiences in a given hospital through the analysis. The questionnaire is also validated to be used for the entire hospital or by the individual departments. It also provides a quicker and accurate mechanism for capturing admitted patient experiences that can be used for continuous quality improvement. The items which were included in the questionnaire have a highly significant degree of validity and internal consistency. Hence, this comprehensive

measurement tool can be used in different departments to involve healthcare staff in monitoring the hospital service quality and to bring about the awareness of this important aspect of patient care.

Limitations of the Study and Scope for Further Research

The present study has some limitations, which are as follows :

✧ Since patients were interviewed in the hospital setting, they may give responses favoring the care provider resulting in social desirability bias.

✧ Patient's diagnosis, illness, severity, and the clinical outcomes - such factors were not included. These factors might contribute more weightage to the study in predicting the patient experience and this is one of the limitations of the study.

The following aspects can be considered as scope for further research :

✧ Different demographical and other characteristics apart from age, sex, and education can give different views on patient experience.

✧ Patient experience can be assessed by comparing the different wards and the out-patient departments.

✧ A comparative study can be carried out on insurance patients and the out-of-pocket patients.

✧ Considering the cluster characteristics, strategies can be developed for improving the quality of care given in the hospitals.

References

- Atkins, P.M., Marshall, B. S., & Javalgi, R. G. (1996). Happy employees lead to loyal patients. Survey of nurses and patients shows a strong link between employee satisfaction and patient loyalty. *Journal of Health Care Marketing*, 16 (4), 14 - 23.
- Boulding, W., Glickman, S. W., Manary, M. P., Schulman, K.A., & Staelin, R. (2017). Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *The American Journal of Managed Care*, 17(1), 41-48.
- Browne, K., Roseman, D., Shaller, D., & Edgman - Levitan, S. (2010). Measuring patient experience as a strategy for improving primary care. *Health Affairs*, 29 (5), 921 - 925. doi: 10.1377/hlthaff.2010.0238.
- Coulter, A., Fitzpatrick, R., & Cornwell, J. (2009). The point of care : Measures of patients' experience in hospital : Purpose, methods and uses. *The King's Fund*. Retrieved from <https://www.kingsfund.org.uk/sites/default/files/Point-of-Care-Measures-of-patients-experience-in-hospital-Kings-Fund-July-2009.pdf>
- El- Eid, G. R., Kaddoum, R., Tamim, H., & Hitti, E. A. (2015). Improving hospital discharge time: A successful implementation of six sigma methodology. *Medicine (Baltimore)*, 94 (12), 1-8. doi: 10.1097/MD.0000000000000633

- Garratt, A. M., Solheim, E., & Danielsen, K. (2008). *National and cross-national surveys of patient experiences: A structured review* (Report No. 07 - 2008). Oslo: Norwegian Knowledge Centre for the Health Services.
- Institute for Healthcare Improvement. (n.d.). *The patient experience : Improving safety, efficiency, and CAHPS through patient - centered care*. Retrieved from <http://www.ihl.org/education/InPersonTraining/ThePatientExperience/Pages/default.aspx>
- Jawahar, S. K. (2007). A study on out patient satisfaction at a super specialty hospital in India. *Internet Journal of Medical Update*, 2 (2), 13 - 17.
- Jenkinson, C., Coulter, A., Bruster, S., Richards, N., & Chandola, T. (2002). Patients' experiences and satisfaction with health care: Results of a questionnaire study of specific aspects of care. *Quality and Safety in Health Care*, 11(4), 335 - 339.
- Jha, A. K., Orav, E. J., Zheng, J., & Epstein, A. M. (2008). Patients' perception of hospital care in the United States. *The New England Journal of Medicine*, 359 (18), 1921-1931.
- Kadam, P., & Bhalerao, S. (2010). Sample size calculation. *International Journal of Ayurveda Research*, 1 (1), 55-57. doi: 10.4103/0974-7788.59946
- LaVela, S. L., & Gallan, A. S. (2014). Evaluation and measurement of patient experience. *Patient Experience Journal*, 1(1), 1-10.
- Nelson, E.C., Rust, R. T., Zahorik, A., Rose, R. L., Batalden, P., & Siemanski, B. A. (1992). Do patient perceptions of quality relate to hospital financial performance ? *Journal of Health Care Marketing*, 12 (4), 6 -13.
- Raleigh, V., Thompson, J., Jabbal, J., Graham, C., Sizmur, S., & Coulter, A. (2015). Patients' experience of using hospital services. An analysis of trends in inpatient surveys in NHS acute trusts in England, 2005 - 13. *The King's Fund*. Retrieved from https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Patients-experience-Kings-Fund-Dec-2015.pdf
- Rave, N., Geyer, M., Reeder, B., Ernst, J., Goldberg, L., & Barnard, C. (2003). Radical systems change: Innovative strategies to improve patient satisfaction. *Journal of Ambulatory Care Management*, 26 (2), 159 - 174.
- The Beryl Institute. (n.a.). *Defining patient experience*. Retrieved from <http://www.theberylinstitute.org/?page=DefiningPatientExp>.
- Weiler, T., Hoffmann, R., & Strehlau - Schwoell, H. (2003). Quality management and accreditation. *Optimizing Hospital Procedures*, 106 (8), 692 - 697.
- Wiig, S. et al. (2013). Investigating the use of patient involvement and patient experience in quality improvement in Norway: Rhetoric or reality? *BioMed Central Health Services Research*, 13(206). doi: 10.1186/1472-6963-13-206.

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