JOURNAL OF BUSINESS AND MANAGEMENT Vol. 6 No.1, 2017: 56-65

DEVELOPING HEALTHCARE SERVICE QUALITY MODEL USING SERVPERF SCALE: AN APPLICATION TO THE INPATIENT DEPARTMENT AT A PRIVATE HOSPITAL IN BOGOR

Astrid Felicia Rumintjap and Harimukti Wandebori School of Business and Management Institut Teknologi Bandung, Indonesia astrid.felicia@sbm-itb.ac.id

Abstract.

Background: With recent investment opportunities in the hospital industry and ever-increasing numbers of private hospitals each year, there is a need for a model on healthcare service quality, applied and tested on the Indonesian market through hospitals, aiming to pin-point areas of service quality shortages. Hence, an empirical study was conducted at a private hospital located in the Bogor regency, West Java.

Methods: The study adopted a purposive sampling method to collect responses from 117 inpatients through a self administered questionnaire, then processed through exploratory factor analysis to extract essential factors. Multiple regression and correlation tests were also executed to determine relationships between variables of the study.

Results: The result of factor analysis led to the formation of a hospital service quality model for inpatient department that involved 4 main factors translated into; Care Delivery Management, Personnel Performance Characteristics, Doctor-Patient Communication, and Hospital Resources & Infrastructure. The new model also proved to positively impact patient's overall assessment as whole. Positive relationships were also found between patient's overall satisfaction with value for money, return intention and recommendation behavior.

Conclusion: This study has formulated a hospital service quality model that covers the important factors patients use in evaluating healthcare at the hospital's inpatient department. It also provides a valid and reliable scale which hospital managers, from equal level of healthcare facility, may reference for future decisions.

Keywords: Exploratory Factor Analysis, Hospital Service Quality, Inpatient Department, SERVPERF

Introduction

Healthcare market in Indonesia has been confronting various challenges within these past years. In 2014 Indonesia's spending on healthcare only totaled to 2.8% of its Gross Domestic Product (GDP), compared with the average worldwide of 9.9%, it is implied that the country's aggregate use for healthcare is among the lowest in the world. Nevertheless, there are empowering signs that improvements are occurring with more to come. In 2014, the launch of universal healthcare (JKN) brought increased demand all over the nation, and has provided an urgent incentive for badly needed improvements to healthcare services.

Indonesia's healthcare providers, hence, ought to prepare themselves and adjust to higher standards in order to cope up with these inevitable demands and competition through promoting the level of service quality. To achieve this, there is a need for a model on healthcare service quality, applied and tested on the Indonesian market through hospitals, aiming to pin-point areas of service quality shortages.

There is a lack of existing comprehension about healthcare service quality model that is directed to understand the perspective of marginalized population on a developing hospital in Indonesia's rural area. A private hospital on the outskirts of Bogor is chosen for study, aiming to promote their level of service quality concentrated within the inpatient department, which would help to identify their dimensions of perception over a period of time and enable hospital administrators to monitor, control, and improve the inpatient service quality. Thus, the identified factors will help in determining areas for managerial attention and action to improve inpatient service quality in hospitals.

Theoretical Framework

This research is concerned with the healthcare industries, and several literatures have contributed considerably to the formation of this research. Prominent researchers have added to this research in terms of dimensions using the frameworks described by Parasuraman, et al. (1988, 1991), Brown and Swartz (1989), Joby (1992), Woodside et al. (1989) and Shafei et al. (2015). Considering the main five dimensions identified by Parasuraman (1991) involves tangibles, reliability, responsiveness, assurance and empathy – the rest of the researchers have gone back a step to include some of the original ten dimensions that were eliminated from the SERVQUAL after several steps of refinement and reassessment that they thought proved relevant to health care.

Woodside (1989) proposed a blueprint for healthcare service quality consisting of admission, nursing care, meals, housekeeping, technical services and discharge. Brown and Swartz (1989) identified healthcare service quality dimensions to be professionalism, auxiliary communications, professional responsibility, physician interaction, staff interaction, diagnostic professional competence, time convenience and location convenience. Joby (1992) proposed that healthcare service quality dimensions were competence, credibility, security, courtesy, communication, understanding/knowing the consumer, access (availability). Shafei (2015) proposed 8 constructs regarding healthcare service quality involving; Doctor medical service, Nursing service, Diagnostic service, Premises and employees, Rooms, Meals, Admission, and Discharge.

Many researches have measured service quality at different hospitals using different methodologies. Some stuck to the original model described by Parasuraman et al. (1988) (SERVQUAL) and Cronin and Taylor (1992) (SERVPERF) while others have adapted different models according to their healthcare setting and needs. Paul (2003) performed a comparison between the two prevalent service quality models, SERVQUAL and SERVPERF, and applied it in the setting of periodontists. He came to the conclusion that SERVPERF without importance weights appears to be a better measure of service quality in periodontists. Therefore, this study favoured SERVPERF over SERVQUAL, due to its proven superiority and convenience.

Table 1 below shows the service quality dimensions identified by notable studies (Woodside et al., Brown and Swartz, Zeithaml et al., Joby, and Shafei et al.), in which each have been practiced on assessing service quality for healthcare. This study had chosen the appropriate constructs to assess the hospital's service quality mainly from the works of Shafei, Walburg and Taher (2015), followed by extensive qualitative reviews from the hospital. The initial model tested for this research consisted of 30 questions which formed 6 constructs; *Doctor*, *Nursing & Midwivery*, *Premise & Employee*, *Admission*, *Amenity*, and *Discharge*.

Study	Service Quality Dimensions			
Parasuraman, Zeithaml,	(Perception-Expectation Gap) Tangible, Reliability,			
Berry (1988)	Responsiveness, Assurance, Empathy			
Joby (1992)	Competence, Credibility, Security, Courtesy, Communication, Understanding/Knowing The Consumer, Access (Availability)			
Woodside, Frey, Daly (1989)	Admission, Nursing Care, Meals, Housekeeping, Technical Services, Discharge			
Brown and Swartz (1989)	Professionalism, Auxiliary Communications, Professional Responsibility, Physician Interaction, Staff Interaction, Diagnostic Professional Competence, Time Convenience, Location Convenience			
Shafei, Walburg, Taher (2015)	Doctors Service, Nursing Service, Diagnostics, Hospital Premise, Rooms and Housekeeping, Admission, Discharge, Meals			

Table 1. (Identified Dimensions used in the research)

Research Hypotheses

In addition to the identification of underlying dimensions within the service quality, the researcher also examined the effect of each of the identified hospital service quality dimensions on Patient SVRR (Satisfaction, Value for Money, Return Intention, Recommendation Behavior) of service quality, and also examined the relationship between Satisfaction with Value for Money, Return Intention and Recommendation Behavior. Therefore, the following hypotheses were tested to further the research: Hypothesis 1: The identified dimensions will have a significant impact on the Patient SVRR.

Hypothesis 2: There is a significant correlation between Satisfaction with Value for Money, Return Intention and Recommendation Behavior.

Methods

Following an extensive literature review, in an attempt to formulate the appropriate model for the hospital's setting, a new model was adapted and tested for health care, using dimensions identified by 5 previously described researchers. The initial model then tested in a survey following these conditions.

Sampling

This research uses the number of inpatient who frequented the studied hospital as population. But the researcher believes that it could as well be generalized into individuals who have stayed at an inpatient department on any hospital within the same level of area as Bogor regency in Indonesia that serves consumers of Grade B-E (middle to lower classes). A minimum sample size of 100 were deemed representative to the population and the results of the present research sample can be safely generalized to the population. With a sample size of 100, the margin of error would be 9,65%. In the current research, a sample of 117 individuals was collected within a range of 3 months' time period: May, June and July 2016. Individuals selected for this study are patients who have finished their stay at one of the inpatient ward at the studied hospital. This research followed purposive sampling, a technique usually applied when the sample being investigated is quite small – where the entire population is often chosen because the size of the population that has that particular set of characteristics under interest in is very small.

Data Analysis

To further test the models and obtain desired outputs, several steps to analyse the survey results were undertaken in the present research:

- 1. Measurement of error through testing for reliability and validity of the data. Using KMO Bartlett's Test from Factor Analysis to support the instrument's validity, and testing the reliability of initial model using Coefficient (Cronbach) alpha.
- 2. Identification of the appropriate constructs that is fundamental in the studied hospital's healthcare service quality (using Exploratory Factor Analysis). Performing factor analysis as previously described enabled the researcher to determine which constructs best describes healthcare service quality in the current research setting.
- 3. Identifying dimensions of healthcare service quality and testing the effect of each of the identified factors with Patient SVRR (using Multiple Regression Analysis). This was performed through regressing each of the identified factors (independent variables) against the respondents' Patient SVRR (Satisfaction, Value for Money, Return Intention, Recommendation Behavior) of service quality (dependent variable) through multiple regression analysis.
- 4. Identifying the relationship between Satisfaction and Value for Money, Return Intention, Recommendation Behavior (using Pearson Correlation) to uncover the significance of each relationship.
- 5. Summarize findings to explore insights and develop strategies for case study.

Results and Discussion

Measurement of Error

This research has proven the content validity of its questionnaire through interviews with hospital authorities and pilot study; while Confirmatory Factor Analysis revealed the KMO value is 0.926 (greater than 0.5), meaning that the sample size was adequate for the factor analysis technique and valid as a new scale. While the internal consistency reliability for each measure, as well as each set of variable used in this research, all have a Good ($\alpha > .8$) to Excellent ($\alpha > .9$) level of reliability, proving that the items in scale have great internal consistency.

Identifying Constructs on Hospital Service Quality (with Exploratory Factor Analysis)

Consequently, factor analysis was performed using all 30 variables representing the service quality performance measure in the studied hospital, and the result found that the 30 variables were distributed into 4 underlying factors. The 4 identified dimensions from this study are addressed into: Care Delivery Management, Personnel Performance Characteristics, Doctor-Patient Communication Hospital and Hospital Resources & Infrastructure.

		Component			
		1	2	3	4
	FACTOR 1: Care Delivery Management				
Q29	The Hospital's Management are consistently courteous to us.	<mark>.827</mark>	.177	.314	.037
Q26	Meals in The Hospital are prepared with attention to patient's	020	215	002	12/
	condition.	<mark>.020</mark>	.213	.002	.134
Q30	The Hospital's Management care and willing to respond to our	011	262	207	002
	opinions/complains.	.011	.202	.307	.002
Q28	The Hospital's Management are able to answer questions (e.g.	000	161	200	002
	regarding billing, insurance) satisfactorily.	.009	.101	.308	002
Q24	Housekeeping staff in The Hospital are consistently courteous.	<mark>.793</mark>	.209	.297	.054

Table 2.

(Rotated Component matrix and constructs of the research)

Q25	Meals in The Hospital have excellent quality.	<mark>.790</mark>	.153	005	.283
Q27	Billings are summarized in detailed manner.	<mark>.779</mark>	.205	.261	.052
Q23	Rooms and baths in The Hospital are kept clean.			.229	.212
Q22	Rooms in The Hospital are visually appealing.	<mark>.636</mark>	.185	.119	.325
Q8	Doctors in The Hospital always on time.	<mark>.626</mark>	.162	.118	.330
Q21	Nurses & Midwives in The Hospital gives patient personal	. <mark>421</mark>	.384	.374	.270
	attention.			1071	/ 0
	FACTOR 2: Personnel Performance Characteristics				
Q5	The Hospital's employees are consistently courteous.	.226	<mark>.793</mark>	.164	.135
Q16	Nurses & Midwives in The Hospital always communicate in	005	760	221	166
	acceptable language.	.095	<mark>.709</mark>	.551	.100
Q15	Nurses & Midwives in The Hospital maintain high personal				
	hygiene (e.g. body and mouth odour, nails, cleanliness of	.117	<mark>.753</mark>	.380	.213
	uniforms).				
Q4	Employees at The Hospital are neat appearing.	.110	<mark>.725</mark>	.044	.362
Q18	Nurses & Midwives in The Hospital perform the service required	.280	<mark>.703</mark>	.385	057
010	(e.g. blood pressure test, drugs distribution) quickly and timely.				
Q19	Nurses & Midwives in The Hospital perform convincingly (e.g. IV	201	()	205	000
	administration) that patient may leef secure with the provided	.281	<mark>.002</mark>	.395	.088
020	Services.				
Q20	provide care to patient	.282	<mark>.635</mark>	.375	.017
017	Nurses & Midwives in The Hospital have level of knowledge and				
Q17	skills needed to nerform the services well	.179	<mark>.624</mark>	.512	.178
06	Admission personnel in The Hospital welcomed me in a				
X ⁰	hospitable manner.	.506	<mark>.577</mark>	.056	.251
Q10	Q10 Doctors in The Hospital examine me very carefully before		FFO		150
C	deciding my condition.		<mark>.559</mark>	.550	.156
Q7	Admission personnel in The Hospital provide clear information	474	CCC	124	270
	(e.g. directions, schedules)	.4/4	<mark>.ວວວ</mark>	.134	.379
	FACTOR 3: Doctor-Patient Communication				
014	Doctors in The Hospital are able to explain the actions I need to do				
QII	in words that are easy to understand.	.235	.347	<mark>.715</mark>	.062
013	Doctors in The Hospital discuss all medical care decisions with			110	4 - 0
x	me.	.231	.373	<mark>.678</mark>	.170
Q12	Doctors in The Hospital hear very carefully what I have to say.	.193	.417	<mark>.645</mark>	.211
Q11	Doctors in The Hospital spend enough time with me.	.289	.214	<mark>.643</mark>	.397
Q9	Doctors in The Hospital treat me with respect.	.325	.432	<mark>.574</mark>	.213
	FACTOR 4: Hospital Resources & Infrastructure				
Q3	The Hospital has a wide variety of supporting facilities (e.g. shop,	142	259	102	804
	cafeteria).	.172	.200	.193	.004
Q1	The Hospital has modern-looking equipment and facilities.	.355	.244	.254	<mark>.628</mark>
Q2	The Hospital provide informative materials associated with the	.251	.148	.485	.530
	service (e.g. pamphlets, booklets, brochures, posters).	1			
Extra	ction Method: Principal Component Analysis.				

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

To simplify what these factors actually represent, the researcher tried to interpret each identified factors by observing each related variables' similarities. The following is a brief explanation for each factors:

1. Care Delivery Management

- Translates into appropriateness, attention and convenience of the given service and healthcare setting.
- Mainly formed from variables which were encountered on the second half throughout the course of healthcare service process.
- Its context predominantly reviews aspects that concerned patient's comfort on their stay. This also represents more of an ancillary service of the hospitality aspect in health care, rather than a primary/direct service of the medical aspect.
 - 2. Personnel Performance Characteristics
- Fostered by the hospital's personnel engagement, characteristics, treatment quality performance characteristics in general, greatly associated with interpersonal relationship between patient and personnel.
- Mainly formed from variables which were encountered on the first half throughout the course of healthcare service process.
- Connected to health care medical aspect as it is composed by most of the Nursing and Midwifery construct variables.

3. Doctor-Patient Communication

- Defined by practice diagnostic and interaction between physician and patient.
 4. Hospital Resources & Infrastructure
- Defined by the hospital's tangibility its physical environment namely facilities, infrastructure, and the adequacy of its physical resources.

Woodside (1989) proposed a blueprint for healthcare service quality consisting of admission, nursing care, meals, housekeeping, technical services and discharge. Brown and Swartz (1989) identified healthcare service quality dimensions to be professionalism, auxiliary communications, professional responsibility, physician interaction, staff interaction, diagnostic professional competence, time convenience and location convenience. Joby (1992) proposed that healthcare service quality dimensions were competence, credibility, security, courtesy, communication, understanding/knowing the consumer, access (availability). Meanwhile, the dimensions from this research aren't aligned with any existing research yet, because it was grouped in a rather unique way. Instead of having different construct for every subject, the output grouped several subject together to create a construct – and the way it was grouped was almost like the first half of the questionnaire was against the second half of the questionnaire. Oddly enough, some construct got scattered (doctor and nursing/midwifery) though the stranded variables have very low loadings. Future study should consider eliminating the stranded variables, find more respondents and minimize response error.

Examining the effects of the identified dimensions on Patient SVRR (Multiple Regression Analysis)

Multiple regression was then used to determine the total effect of the four factors (dimensions) on the inpatients' service quality (or how well the four dimensions predicted inpatient service quality) and to assess the relative importance of the individual dimensions. For the regression model, the four extracted factors were considered as the independent variables and the Patient SVRR (Satisfaction, Value for Money, Return Intention, Recommendation Behavior) towards service quality as the dependent variable. The summated scales of each factor were calculated by averaging all values of scale items within the particular factor. The processed results using SPSS 13 for multiple regression analysis are presented in the following table:

Table 3.
(Regression Coefficients ^a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		
1 (Constant)	3,949	,040		97,706	,000,
CDM	,406	,041	,620	9,999	,000
PPC	,227	,041	,347	5,594	,000
DPC	,161	,041	,245	3,956	,000
HRI	,043	,041	,065	1,053	,294

a. Dependent Variable: Patient SVRR

Based on the unstandardized coefficients (B) in Table 2, a multiple linear regression equation was obtained as follows:

Y = 3,949 + 0,406X1 + 0,221X2 + 0,161X3 + 0,043X4

To reveal the correlation of these variables, correlation test following the multiple regression was tried, both overall and partial.

Table 4.

(Multiple Correlation Model Summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	,755ª	,569	,554	,43715			
a. Predictors: (Constant), CDM (Factor 1), PPC (Factor 2), DPC (Factor 3), HRI (Factor 4)							

The correlation coefficients indicated the strength of the linear tendency between the variables. R value of 0.755 indicated a strong correlation between the new model and Patient SVRR. The coefficient of determination / R square is found to be statistically significant – which implies that the new model with the four identified dimensions, accounts for about 57%, and contributed significantly, towards explaining the variance in the level of Patient SVRR in hospital service quality.

Table 5.

(Partial Correlation Analysis)

	Standardized			
	Coefficients	Correlations	Partial	Partial Correlation
Variable	Beta	Zero-order	Correlation	(%)
X1	0,620	0,620	0,3844	38,44
X2	0,347	0,347	0,1204	12,04
X3	0,245	0,245	0,0600	6,00
X_4	0,065	0,065	0,0042	0,42
	Tota	l Correlation	0,5691	56,91

As for partial correlation, the degree of percentage each factor (Care Delivery Management (X1), Personnel Performance Characteristics (X2), Doctor-Patient Communication (X3), and Hospital Resources & Infrastructure (X4)) contributed can be seen above, with Care Delivery Management being the most influential among others (38.44%). The total of each factors' partial correlation is also aligned with the coefficient of determination / R square from the previous multiple correlation analysis, which is ~57%.

These results have established the solution to the first hypothesis, that the first three identified factors: Care Delivery Management, Personnel Performance Characteristics, and Doctor-Patient Communication, each have significant impact on the Patient SVRR. However, the fourth factor, Hospital Resources & Infrastructure, fail to prove significant to the Patient SVRR. According to Paul (2003), consumers find difficulty in evaluating healthcare services and they rarely know which feature of the health service to base their judgments on, since healthcare by nature is a multi-service operation that involves many encounters. This is especially true when patients try to evaluate the more technical features of the healthcare service such as the qualifications of the medical staff. Patients do not actually have the technical knowledge to evaluate the technical (medical) aspects of healthcare in an effective manner. Thus typically, patient's can usually assess the human aspect of the service delivery; for example, the attentiveness, the responsiveness, the comfort provided by the service provider, the length of the wait before treatment etc. This theory is further supported by the research, considering Care Delivery Management, which contributed the most into Patient SVRR (Satisfaction, Value for Money, Return Intention, Recommendation Behavior), is consisted of appropriateness, attention and convenience of the given service (hospitality) and healthcare setting instead of medical service.

Examining the Relationship between Overall Satisfaction with Value for Money, Return Intention and Recommendation Behaviour (using Pearson Correlation)

To reveal the relationships between overall customer satisfaction and other variables, the research attempted using Pearson Correlation. The correlation coefficients between Overall Satisfaction (Y1) with Value for Money (Y2), Return Intention (Y3) and Recommendation Behaviour (Y4) is represented by significant correlation (P < 0.01). The results are listed in the table below.

Table 6. (Pearson Correlation output)

		Y1	Y2	Y3	Y4
Y1	Pearson Correlation	1	.665**	.651**	.627**
	Sig. (2-tailed)		.000	.000	.000
	N	117	117	117	117

**. Correlation is significant at the 0.01 level (2-tailed).

The output revealed the Pearson correlation coefficient (r) of the 3 tests were 0.665, 0.651 and 0.627 – which indicated strong, positive correlations, as well as statistically significant, between Overall Satisfaction and the 3 variables. These results have established the solution to the second hypothesis, that the there are significant correlations between Satisfaction with each of Value for Money, Return Intention and Recommendation Behavior.

Many have linked customer satisfaction with return intentions – positive word of mouth and consumer satisfaction is expected to have significant effect on repeat sales, positive word-of-mouth as well as consumer loyalty. Several researchers also linked customer satisfaction to behavioural intentions to repurchase from the same provider as well as linking service quality with consumer satisfaction. Farid (2008) were able to detect a strong correlation between patient satisfaction and behavioural intentions to return and recommend, as well as value for money and outcome to mother and baby. This study only further proves how these variables indeed interchangeably influence each other.

Limitation & Future Research

Several limitations were faced by the researcher during the research, which in turn has opened up possibilities for future researches within the context of hospital service quality:

a. Difficulty in generalizing the results: This research has limitations in terms of scope and external validity. The findings and implications will be particularly relevant to healthcare providers of the same level of area as the Bogor regency (namely rural, low socioeconomic population), and applicable only to private hospitals within the same specialty. The research's application should also be fairly specific for RSIA Sentosa Bogor, since the study did not cover any other hospital. General hospitals and prosperous city populace were also not studied. These purposive sampling criteria were adopted for ease and time limitations of research as

well as the belief that the needs and perceptions of each of these strata would differ greatly and could be considered for future research.

- b. Limitation in variables under Study: Current research only relates Patient SVRR/Overall Assessment (such as satisfaction) to the factors studied. Several other moderating / mediating factors like insurance and accessibility could be considered and tested in future research.
- c. Practical & sample limitations: The sample size was greatly limited since the study was done on months representing the lowest peak of patient administration within a one-year cycle. Also, another limitation in terms of scope due to applying the study only on the inpatient department. Patients from the outpatient department were not studied due to many reasons; including time-constrictions and too much case variation that might not work if generalized. Other grounds could be considered in future research.

Conclusions

As a conclusion, the study was able to establish a new, concise model for hospital service quality that groups the variables according to the patient's perception. The researcher concluded that there are four main dimensions essential to the hospital's inpatient department:

- 1. Care Delivery Management (which involves services from Management/Discharge, Meals and Rooms/Housekeeping),
- 2. Personnel Performance Characteristics (which involves services from Employee, Nursing/Midwivery and Admission),
- 3. Doctor-Patient Communication (Doctor services), and
- 4. Hospital Resources & Infrastructure (Premise tangible).

In addition, the study also determined the existence of several relationships between variables previously identified through regression and correlation tests:

- Overall, Care Delivery Management, Personnel Performance Characteristics, Doctor-Patient Communication and Hospital Resources & Infrastructure proves significant towards patient's Overall Asessments. Tested individually, Care Delivery Management, Personnel Performance Characteristics, and Doctor-Patient Communication, each have significant impact on the Patient SVRR (Satisfaction, Value for Money, Return Intention, Recommendation Behavior) – however, Hospital Resources & Infrastructure failed to prove significant to the Patient SVRR.
- There are significant correlations between Overall Satisfaction with each of Value for Money, Return Intention and Recommendation Behavior.

The model hopes to establish a generalizable base for hospital service quality that will be relevant to many Indonesian private hospitals. This research managed to establish a simplified model for healthcare service quality, to give insights for hospital managers in the rural areas, helping them in figuring out which dimensions actually matters to population from the less advanced regions (which often ruled out from most service quality researcher's interest). The model will also facilitate in managing and improving certain level of services in areas within a health care from a patient's perception.

References

- Babakus, E and Boller, G W (1992). An Empirical Assessment of the Servqual Scale. *Journal of Business Research*, 24(3), 253-68.
- Boulding, W, Kalra, A, Staelin, R and Zeithaml, V A (1993). A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions. *Journal of Marketing Research*, 30(February), 7-27.
- Brown, S.W. and Swartz, T.A. (1989), A Gap Analysis of Professional Service Quality, *Journal of Marketing*. 53, April, pp 92-98.

- Carman, J.M. (1990), Consumer Perceptions of Service Quality: An Assessment of the SERVQUAL Dimensions. *Journal of Retailing*.
- Churchill, G.A. and Carol Suprenant (1982), An investigation into the determinants of consumer satisfaction. *Journal of Marketing Research*, 14, November, pp 491-504.
- Cronbach, Lee J.; Meehl, Paul E. (1955). Construct validity in psychological tests. *Psychological Bulletin*. 52 (4): 281–302.
- Cronin, J.J. Jr. and Taylor, S.A. (1992), Measuring Service Quality: A Re- Examination and Extension. *Journal of Marketing.*
- Farid, Ingy Mohamed Fikry (2008), Development of a Model for Healthcare Service Quality: An Application to the Private Healthcare Sector in Obstetrics in Egypt, (DBA Dissertation). Maastricht School of Management, Maastricht.
- Furse David H., Michael R. Burcham, Robin L. Rose, and Richard W. Oliver (1994): Leveraging the Value of Customer Satisfaction Information. *Journal of Healthcare Marketing*, Fall, Vol. 14, No. 3, pp 16-20.
- George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference. 11.0 update (4th ed.). Boston: Allyn & Bacon.
- Grönroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*, Vol. 18(4), pp.36 44.
- Joby, J. (1992), Patient Satisfaction: The Impact of Past Experience. *Journal of Health Care Marketing*, 12, No.3, pp.56-64.
- Kotler, Phillips (1988), Marketing Management Analysis, Planning, Implementation and Control, 6th edition, Englewood Cliffs, NJ: Prentice- Hall, Inc.
- Malhotra, K Naresh (1999), Marketing Research-An applied orientation. Third Edition. Prentice Hall, Inc. New Jersey
- Paul, P David (2003), What is the best approach for measuring service quality of periodontists?. *Clinical Research and Regulatory Affairs*, Vol. 20, No.4, pp 457-468.
- Peter, J P, Churchill, G A and Brown, T J (1993). Caution in the Use of Difference Scores in Consumer Research. *Journal of Consumer Research*, 19(March), 655-62.
- Ross Caroline K, Gayle Frommelt, Lisa Hazelwood and Rowland W Chang (1987), The role of expectations in patient satisfaction with medical care. *Journal of Healthcare Management*, Vol. 7, No 4, December, pp16-26.
- Shafei, I., Walburg, J. A., & Taher, A. F. (2015). Healthcare service quality: what really matters to the female patient?, *International Journal of Pharmaceutical and Healthcare Marketing*, 9(4), 369-391.
- Smith Ruth A and Michael J Houston (1983), Script based evaluations of satisfaction with services in *Emerging Perspectives on Services Marketing*, Leonard Berry et al., eds., Chicago: American Marketing Association.
- Swartz, TA and Brown, S.W. (1989), Consumer and Provider Expectations and Experiences in Evaluating Professional Service Quality. *Journal of the Academy of Marketing Science*, 17, No.2, pp.189 - 195.
- Walbridge, S.W. and Delene, L.M. (1993), Measuring Physician Attitudes of Service Quality. *Journal of Health Care Marketing*, Winter, pp.6-15.
- Walburg J., (2006), The Outcome Quadrant in *Performance Management in healthcare improvement patient outcomes: an integrated approach*, Walburg, J., Bevan H., Wilderspin J. and Lemmens K. eds, Routledge, New York.
- Woodside Arch G, Lisa L Frey and Robert Timothy Daly (1989), Linking service quality, consumer satisfaction and behavioural intention. *Journal of Healthcare Marketing*, Vol 9, No 4, Dec 1989, pp 5-17.
- Zeithaml, V. A., Parasuraman, A., & Berry, L. L. (1988). SERVQUAL: A multi-item scale for measuring customer perceptions of service. *Journal of Retailing*, 64(1).