

# Analysis of Patient Satisfaction in Intensive Care Unit

Dr. Mustafa Kemal ARSLANTAŞ (1), Dr. Reyhan ARSLANTAŞ (1), Dr. Tolga ŞİTİLCİ (1),  
Doç.Dr. Emine ÖZYUVACI (2), Dr. Fikret KUTLU (3)

## ÖZET

### Yoğun Bakım Ünitesinde Hasta Memnuniyet Analizi

**Giriş:** Sağlık hizmetlerinde en önemli birimlerden biri Yoğun Bakım Üniteleridir. Bu ünitelerde verilen hizmetin kalitesinin yüksek olması, hastanın daha sonraki dönemde yaşam kalitesi ve yaşam süresi üzerinde etkili olacaktır. Hizmetin kalitesini ölçmenin en önemli yolu da hizmet alan hastanın memnuniyetini ölçmektir.

**Yöntem:** 01 Ocak 2004 -31 Aralık 2004 tarihleri arasında Yoğun Bakım Ünitemiz' de yatan 1008 hastadan 32 hasta değerlendirilmiştir. Anket uygulanan bu hastalar, ünitede kaldığı süre içerisinde en az 48 saatlik bir dönemde bilinci açık, koopere ve oryante olarak yatanlar arasından seçilmiştir.

Hizmet kalitesini ölçmeye yönelik geliştirilen anket, demografik bilgiler ve hizmet kalite düzeyini belirlemeye yönelik sorular olmak üzere iki ana bölüme ayrılmıştır. İlk bölüm, toplam 29 adet 5'li Likert ti-pinde sorudan, ikinci bölüm ise hastanın kişisel görüşlerini kendi ifadeleriyle belirtebileceği 2 adet açık uçlu sorudan oluşmaktadır. Bu sorulara faktör analizi yapıldı. Anketin geçerlilik güvenilirlik testi olumlu sonuç verdi.

**Bulgular:** Hastaların demografik özelliklerinin hasta memnuniyetini etkilediği görüldü. "Çok memnunuz" şeklinde ifade edilen "5" puan üzerinden yapılan sorgulamaların analizinde 8 faktör bulundu. Ayrıca açık uçlu sorulardan özellikle hastaların en çok ortamdaki seslerden ve bazı hemşirelerin davranışlarından rahatsız oldukları anlaşıldı.

**Sonuç:** Bütün bu verilerin detaylı olarak incelenmesi sonucu çalışmamıza dahil edilen hastaların yoğun bakım hizmetlerinden genel olarak memnun oldukları kanaatine vardık. Bu çalışmanın daha geniş hasta sayıları ile yapılması yoğun bakım ünitelerinde verilen hizmetin kalitesini iyileştirerek yoğun bakım ünitelerinde tedavi gören hastaların daha sonraki yaşantılarını daha iyiye götüreceği kanısındayız.

**Anahtar Kelimeler:** Hasta memnuniyeti, Yoğun bakım ünitesi.

## SUMMARY

**Introduce:** One of the crucial elements in medical services is intensive care units (ICU). The high quality of the services in these units will have an impact on the quality and duration of the patient's life. The most important method of measuring the quality of the service is to measure the satisfaction level of the patient.

**Method:** Of the 1008 patients treated in our ICU between 1 Jan. 2004 and 31 December 2004, 32 patients were included in our research. They were given a questionnaire and they were selected among those who had a clear conscious and who were cooperate and orientate.

The questionnaire to measure the quality of service consisted of two main parts: The first part included demographic data whereas the second part included questions to determine the level of the quality of service. Second part of questions was also divided in two sections: The first section composed of 29 questions in the form of Likert-5; the second section composed of 2 open-end questions, where the patient could give his own opinions. These questions were applied factor analysis. The validity and reliability test of the questionnaire was positive.

**Results:** It was found that the demographic characteristics of the patient had an impact on the patient's satisfaction. In the analysis of questions labeled with 5 points that said, "Very satisfied", 7 factors were found. It was also understood that in the open-end questions, the patients were mostly bothered by the noise and the behavior of some ICU workers.

**Conclusion:** Upon the detail analysis of the data we obtained, we determined that the patients who took part in our reserach were generally satisfied with the ICU services. We believe that this research conducted with more patients will improve the quality of services of ICU and the quality of patient's remaining lives.

**Key words:** Patient satisfaction, Intensive care unit.

## INTRODUCTION

The medical services are one of the most significant indicators of the socio-economic development of countries. The primary purpose of the medical services is offering the services required by the society at the quality, time and best possible prices according to the customer.

The understanding of quality in medical services may be realized with medical care and patient satisfaction. The quality of medical caring is not just a mechanical process; rather it is a service that employees should devote their brain power, creativity and experience.

One of the most important parts of the medical services is the Intensive Care Units (ICU). The higher is the quality of services rendered in these units; the better is the life quality and time of the patient. The best way to measure the service quality is the satisfaction of the service buyer.

## MATERIAL AND METHOD

This study was conducted for the purpose of determining the satisfaction and demands of the patients hospitalized in ICU from the services rendered there find our deficiencies and provide maximum medical care and patient satisfaction by providing necessary organizations and rehabilitation.

## HYPOTHESES THE RESEARCH

1. There is a relation between demographic characteristics and the service perception of the patients
2. The patients' satisfaction level from service quality depends on their income levels
3. The patients' satisfaction level from service quality depends on education
4. The patients' satisfaction level from service quality depends on age

The research is limited with the Ministry of Health, Istanbul Training and Research Hospital, Anaesthesiology and Intensive Care Unit. Another limitation of the research is inclusion of the patients who are conscious, cooperative and oriented and have remained in the intensive care for more than 48 hours.

The survey developed to measure the service quality consists of two sections. First section gives demographic data while second section includes questions aimed at determining service quality level. Second section includes 29 closed end questions and 2 open ended questions where the patient can express his personal opinion with his own view.

The questions prepared to measure the service quality level are Likert in 5. Each one of the subjects was asked to check the correct answer from 1 to 5,

showing "very pleased", "pleased", "indecisive", "not pleased at all", "complaining". The marks of the choices were determined as 5, 4, 3, 2 and 1 respectively. While "very pleased" was marked with "5", "not pleased at all" was marked as "1". Thereby from the marks obtained from the statements, the patient satisfaction levels from the offered services were determined.

Because the study measures the satisfaction levels of the patients, it was only carried in the ICU in order to eliminate the differences between the place and the employees. Because the hospitalization periods in ICU are long and the number of patients complying with the limitations of the study is low, the numbers of cases were kept limited at the beginning and the study was conducted as a guide. After acquiring first results, the study will be continued to increase the number of cases.

In selection of the samples, the requirement was staying at the ICU for 48 hours and ability to understand the questions asked in the scale.

The survey conducted to measure the service quality was attended by 33 out of 1008 patients hospitalized in Istanbul Training and Research Hospital ICU from January 2004 to February 2005. But, of those survey subjects, 32 were taken into consideration.

The survey expressions aimed at measuring the service quality (patient satisfaction) were turned into 7 dimensions and 29 expressions.

The factor structure validity of the scale was performed using "factor analysis". In order to determine the factor structure, the SPSS-PC Principal Components Analysis and to form the factor groups, Varimax Rotation was employed.

Table 1 gives the 7 factors with an eigen value larger than 1, for the analysis of the fundamental components for the service quality evaluation scale. The expressed

**Table 1.** The 7 factors with an eigen value larger than 1, for the analysis of the fundamental components for the service quality evaluation scale.

	Factor	Variance values	Variance per cents	Cumulative variance
1	Behaviours of the ICU Personnel	6,09357	21,0	21,0
2	Hotel Services 1	3,73159	12,9	33,9
3	Satisfaction from the physician	3,32229	11,5	45,3
4	Medical Services	2,92499	10,1	55,4
5	Hotel Services 2	2,81415	9,7	65,1
6	Satisfaction from the nurse	2,39701	8,3	73,4
7	Patient visits	1,96791	6,8	80,2

factor is defined by 80.2% of the total variance.

As far as the statistics are concerned, the number 1 factor (the attitudes and behaviours of the ICU personnel) has 21.0% share in the total variance, which shows that it is the most significant factor among the others.

We aimed to test the validity, internal consistency and reliability levels of the scale developed. The content validity of the 20 expressions employed for measuring the service quality was evaluated with an expertise view, reliability item analysis (Item Total Correlation Analysis) techniques.

As expressed by Peter (1979), Nunnally says that a Cronbach's alpha value of 0.5 or higher would be sufficient for reliability of a study.

The reliability of the service quality scale can be said as very strong with  $\alpha = 0.931$ .

The data on the 32 subjects included for the purpose of measuring the service quality were evaluated in the SPSS/PC 13.0 (Statistical Package of Social Sciences) software. In the evaluation, the "Principal Components Analysis", "Anova Test", "Pearson r Correlation analysis" and "Spearman Correlation Analysis" were employed.

## FINDINGS

Table 2 gives the average marks given by the patients on the expressions. The average marks given by them on the expressions are 4.389, corresponding to "very pleased" - "pleased" range.

We performed that the average satisfaction levels of the patients based on their education, income and age groups, from the hospital personnel classified according to positions. As far as the age groups are concerned, contrary to the education and income level, the higher is the age, the more is the service quality perceived by the patients, this is, their satisfaction increases. But the averages alone cannot prove whether or not the reduction in the patients' satisfaction from the service offered by the personnel is due to increase in education and income level. Therefore, after the Anova test, no statistically significant difference was found between the education and income, and the level of satisfaction ( $p \geq 0.05$ )

No significant difference was found between the patients' level of satisfaction from the nurse service and their age and income level ( $p \geq 0.05$ ).

No statistically significant difference was found between the age, sex, education and income level of the patients and the level of their satisfaction from the doctor service ( $p \geq 0.05$ )

A statistically significant difference was observed between the patients' education level and their satisfaction from the services offered by nurses ( $F = 5,926, p \leq 0.001$ ). According to Scheffe test results; there is a difference between Group 4 and Group 1, Group 2, Group 3, at a significance level of 0.05.

There is a statistically significant difference between the sexes of the patients and their level of satisfaction from the services offered by the nurses ( $F = 0,029, p \leq 0.05$ ).

The first of the 2 open ended questions, where the patient would be able to use his own expressions to state his personal opinion on ICU, "the three things mostly attracting your attention / enjoyed by you" was answered by 29 patients. The 2nd question "the three things mostly attracting your attention / not enjoyed by you" was answered by 13 patients. 3 patients did not at all answer the open ended questions.

19 patients were happy for cleanness and organization, 16 for the ICU personnel's interest, 4 for the body cleanness and care in the ICU, 4 for the technological equipment, 4 for the physical conditions of the medium, 3 for the patient visit system, 3 for the medical support given to the patients, 1 for the plenty number of nurses. 2 patients pronounced the names of the interested surgeons in the intensive care, 1 patient stated his pleased ness due to folding screens while interrupting the patients developing cardiac arrest.

7 patients said that they were disturbed by the noise and high pitch sound in the medium, 4 patients complain-

**Table 2.** The average marks given by the patients on the expressions

	Expression	Average	Std. Deviation
1	Cleanness and order of the place	4,781	0,491
2	Cleanness of the beds, sheets and pillows	4,563	0,564
3	The care taken for avoiding making noises and high sounds	3,935	1,365
4	The illumination and light in the place	4,313	0,693
5	Temperature	4,161	0,969
6	Number and sufficiency of the ICU personnel	4,188	1,061
7	Body cleaning and care by the nurses	4,625	0,609
8	Modernity of the ICU equipment	4,469	0,671
9	Ventilation and odour	4,281	0,991
10	Cleanness and well cared condition of the personnel	4,688	0,471
11	Being respectful and polite to the patients	4,688	0,535
12	Personnel's being clean and well kept	4,344	0,787
13	Care taken for the patient privacy	4,594	0,665
14	Warmth and politeness	4,000	1,047
15	Responding the questions of the patients timely and expressively	3,969	1,257
16	Serving the needs of the patients timely	3,938	1,268
17	Providing sufficient and understandable knowledge on the treatment	4,581	0,564
18	The interest for the patients	4,281	0,813
19	The encouragement and support given to the patients	3,875	0,871
20	Patient visit frequency and time	4,750	0,508
21	Behaviours of the physicians to the patients	4,438	0,801
22	Behaviours of the nurses to the patients	4,344	0,787
23	Behaving fair to all patients	4,645	0,486
24	The time allocated by the physician to the patient	4,625	0,660
25	Physician's knowledge and skills	4,438	0,716
26	Correctness of the diagnosis and efficiency of the treatment	4,419	0,620
27	Eliminating the pains and difficulties of the patients	4,500	0,508
28	The care given to the feeding of the patients	4,267	0,868
29	Applying modern examination and treatment methods	4,581	0,502
	<b>Total</b>	<b>4,389</b>	<b>0,764</b>

ned that some nurses were very impatient and nervous, 2 patients said that their needs were timely served, 4 patients complained of the insufficient physical conditions and 1 patient complained that the patient relatives were not enough informed on the condition of the patient.

1 patient advised that the personnel to be employed in the intensive care would be psychologically tested and employed, if found suitable, 1 patient advised that the sheets would be in a colour other than white, 1 patient advised that a curtain be put between the beds and 1 patient advised to extend patient visiting hours.

## DISCUSSION

Medicine is one of the most problematic areas in the service sector for satisfaction of the customer (patient). Developing communication and social life, increasing education level with the increasing welfare increase the demands of the customers. With the increased expectations, the customers want the service at the desired quality and time with best possible prices.

Many studies carried out so far show that there is a relation between the demographic characteristics and service quality expectations. Particularly Thompson and Kaminski found significant statistical results between age and service quality, in 1993 Gagliana and Hathcote in 1994 found similar significance between income and service quality, and Webster, between sex and age, and service quality. (1)

The satisfaction in various rates should be monitored as an indicator of quality for each ICU and if lower, they should be increased, and if higher, they should be preserved. In a study carried out in Canada with the relatives of the patients in the ICUs, the highest satisfaction was observed in the nursing services and caring quality. In our study, the ICU personnel's conduct and behaviour counted for 21.0% within the total variance, this shows that it is the most important factor among others.

The patients in the intensive care unit are the ones who most need the moral support, considering their condition. Patient's demographic characteristics and psychology may influence his communication with his environment. Furthermore, with the face to face contact with people, one of the most significant characteristic of the service companies, the patients care for the behaviours and conducts of the personnel servicing them. In this study, it has been shown that the personnel's conduct and behaviour are more important on the patient's satisfaction. In the open ended questions, most comments were on the behaviour of the personnel.

According to Chang (2) and Strassen (3), the factors influencing the satisfaction of the patient from nursing services, are comfort, cleanness and safety, good meals, friendship and good personal relations. In this study, the nursing services include patient body cleaning and ca-

ring as well as nurses' information and skills. Comfort, cleaning and food, trust on hotel services and communication are among the personnel behaviour factors.

Mahon (4) and Hsieh (5) state that the satisfaction consisting of the nursing services was more important. Hsieh classifies the factors influencing the patient satisfaction as age, sex, expectations of the patient from services and the services received by him as well as the mood created by such service.

Also in this study, when the age groups of the patients are concerned, contrary to education and income, the service quality perceived by the patients increase with the increasing age, this is, their level of satisfaction increases. There is a statistically significant difference between the patient sex and the level of satisfaction of the patients from the services offered by the nurses ( $F = 0,029, p \leq 0.05$ ).

## CONCLUSION

Within the framework of the findings obtained hereunder, detailed examination of all data supports 1st Hypothesis and 3rd Hypothesis partially, while our other hypotheses are not verified. We are in the opinion that the patients included in our study are generally "pleased / very pleased" from the intensive care services. The behaviours of the ICU personnel also are important. The patients in the ICU need psychological support in addition to medical. Because our study is for guiding purposes and limited, the numbers of patients were kept limited. Carrying out this study with larger numbers of patient would improve the quality of service and the future lives of the treated patients.

## BIBLIOGRAPHY

- 1- Royne, Stafforland Marla, "Demographic Discriminators of Service Quality in the Banking Industry", *The Journal of Service Marketing*, Vol.10, No.4, 1996, s.8.
- 2- Chang K. Dimensions and indicators of patients perceived nursing care quality in the hospital setting. *Journal of Nursing Care Quality*, 1997, 11: 26-37.
- 3- Strassen L. Incorporating patient satisfaction standards in to quality of care measures. *Journal of Nursing Administration*, 1988, 18: 5-6.
- 4- Mahon p. Rewiev of measures of patient satisfaction with nursing care. *The Journal of Nursing Scholarship* 1997; 26: 196-197.
- 5- Hsieh M., kagle J. Understanding patient satisfaction and dissatisfaction with health care. *Health and Social Work* 1991; 16: 281-290.