

Family Satisfaction towards Care Provided to Critically Ill Patients and Associated Factors in the ICU of Governmental Hospitals of Addis Ababa Town, 2017

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Abstract

Background: Intensive care unit is a consolidated area which needs high quality of care and follows up of patients with more sophisticated equipments. Assessment of satisfaction is one indicator to determine quality of care given for the patients. In the ICU patients are not in the condition to give their opinion about the care; therefore assessment of family satisfaction in care of critically ill patients can be important indicator of quality of care in critical care unit.

Method: Institutional based cross sectional study conducted in five hospitals ICU found in Addis Ababa, Ethiopia. The total sample size was 206 and allocated using stratified sampling method. By reviewing literature major satisfaction predictors were identified and likert scale were used to assess the satisfaction level of participants and data was collected by interviewer administered structured questioner. The result was entered, cleaned and coded Epi data 3.1 and transferred to spss versio 21 windows for analysis.

Result: Over all satisfaction of families by care given to ICU patients were 62%. Age less than 25 and between 25 and 35 by (AOR-1.282, 95% CI 0.081-0.095) and (AOR - 1.277, 95% CI 0.82-0.943) respectively, also education below grade eight (AOR 1.112 95% CI 1.170-7.909) associated with higher family satisfaction. Families who have no information about patients condition and families of patients with poor progress respectively had less odds of satisfaction.

Conclusion: The overall family satisfaction is moderate. From the satisfaction predictors families were less satisfied on availability of waiting area and information give by the health professionals.

Keywords: ICU; Head injury; Health

Abbreviations: AAU: Addis Ababa University; CCFNI: Critical Care Family Need Indicator; FMOH: Federal Ministry of Health

Introduction

Intensive care unit is a special department of hospitals which is responsible to care for seriously ill patients. Patients in the ICU needs constant close monitoring from specialist and nurses with supportive equipments and medication [1]. The reason for admission world wide is different, the most common reason in Africa is head injury followed by respiratory failure, sepsis and obstetric causes [2-4]. ICU mortality rate in developed countries accounts 8% to 20%. Among all deaths, the ICU mortality rate accounts 20% in US, between 30% to 50% in africa. From east african countries a study in Uganda indicates 25% to 68% of death from medical and surgical ICU and 37.7% death in one referral hospital in Ethiopia [5-7].

The patient treatment outcome affected by seriousness of illness and quality of care given for the patients. Patients perception about healthcare has been predominantly accepted as an important indicator for measuring quality of health care and a critical component of performance improvement and clinical effectiveness [7].

Critically ill patients can not make their own decision or their opinion about the health care service due to the seriousness of illness patients become unconscious or may stay on mechanical ventilation. ICU patients family members play critical role in daily decision making. Families satisfaction considered as an important indicator for assessing quality of care in the intensive care unit. Different studies shows that more common family satisfaction predictors are in need of information, support, proximity and comfort for patients and their family members [8,9].

A study conducted in countries like Canada, Portugal, Morocco shows families of patients are more satisfied on participation of families in decision making, the nurses skill and competency, information, emotional and physical support also less satisfaction on the families waiting area and the support given for the families [10-23].

Family members are in continuous need of knowing their relatives well being and if the patient is getting the best possible care from the health care team. Meeting the need of families can lead them to be satisfied by the care given to the patient [15].

When families are satisfied with the service given it increase their trust on the medical team the refusal of family to stay in the hospital or discharge of patient against the medical advice will be decreased additionally families became ready to accept the patients poor outcome whether it is disability or death.

In africa, there is no many study which is conducted about ICU patients family satisfaction service quality. Also no researches done in Ethiopia which assess the level of family satisfaction about the care given to patients in the intensive care unit. The purpose of this research is to assess the satisfaction level of families admitted in adult and neonatal ICU and factors associated with the level of satisfaction.

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Received June 26, 2018; **Accepted** August 14, 2018; **Published** August 18, 2018

Citation: Teshome GS, Roge NA, Ayalew YA, Sibany AS (2018) Family Satisfaction towards Care Provided to Critically Ill Patients and Associated Factors in the ICU of Governmental Hospitals of Addis Ababa Town, 2017. J Trauma Treat 7: 429. doi: [10.4172/2167-1222.1000429](https://doi.org/10.4172/2167-1222.1000429)

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Materials and Methods

Study design and period

An institutional based descriptive cross-sectional study was conducted to assess family satisfaction in care of critically ill patient from January to June 2017 and the data collection period was from April to May 2017.

The study area

The study was conducted in Addis Ababa, the capital city of Ethiopia. Addis Ababa has a population size of over 3 million with an annual growth rate of 2.1% (Data obtained from central statistical agency of Ethiopia). The city has 35 private and 13 public hospitals. Among these five of them provide intensive care unit service. Totally there are 22 adult and 140 neonatal ICU beds. Average per month, 367 patients were treated in the hospitals intensive care unit.

Source and study population

Source population was all families of admitted patients with in selected hospitals during the study period and families of patients who were available in the intensive care units in the study hospitals at the time of data collection and who meet the inclusion criteria considered as study population.

Inclusion criteria

A patient who stayed at least two days in the ICU and the patient relatives who have more than three visits and responsible in caring for the patient and also being 18 years or older was the inclusion criteria. Also only one patient family for one selected patient was included.

Sample size determination

Actual sample size for the study computed using single population proportion formula ($n = \frac{[Z\alpha/2]^2 \times P(1-P)}{D^2}$) by assumption of 5% marginal error, 95% confidence interval of certainty ($\alpha=0.05$) 50% prevalence of family satisfaction in care of critically ill patient since there is no previous similar study. After calculating the sample size population reduction formula ($n = \frac{n}{1 + \frac{n}{N}}$) due to the source population were 367. Final calculated sample size by adding 10% non-response rate became 206. The total sample size was allocated proportionally to five hospitals adult and neonatal ICU. Using the study population in each hospital ICU sample was allocated proportionally using stratified sampling method. The study units identified and the study sample that meet the inclusion criteria was taken from units under study. The allocated sample was selected using systematic random sampling method. In each hospital every 2 participants were interviewed using the patient's admission registration book.

Dependent and independent variables

The dependent variable is family satisfaction and age, sex, income, education, patient condition, families past experience in ICU and the ICU unit and the independent variable were family satisfaction.

Data collection tool and procedure

After reviewing different literatures, major variables identified according to the Ethiopian situation. It contains two parts which contain sociodemographic characteristics and questions which assess the level of family satisfaction. An interviewer administered structured questionnaire administered to participant about their satisfaction on various aspects of critical care. The questionnaire uses a Likert scale from

1 to 5. One is not at all satisfied, two barely satisfied, 3 quite satisfied, 4 very satisfied and 5 completely satisfied. The higher score and lower score are 105 and 25 respectively. They informed to select only one number that best describes their opinion on each item of the scale. The data collected from the study hospitals by diploma nurses who are not involved in patient care.

Data quality assurance

The data collection tool translated into local language (Amharic). The second version of the tool was back translated into English to evaluate its consistency and before the actual data collection pretest on 5% of the sample was done. Based on the findings of the pretest some modification was done. Training of data collector was given and the coordinator checks the completeness of the questionnaire immediately after submission.

Operational definitions

- Satisfied: Refers to participant who respond greater than mean level of satisfaction.
- Not satisfied: Refers to participants who respond as less than mean level of satisfaction.

Data processing and analysis procedures

Data entered into EPI data version 3.1 and exported to SPSS version 21. Then the data were transferred and analyzed by SPSS software package. The descriptive analysis such as frequency distribution, proportions, percentages, and measures of central tendency used. Bivariate and multivariate analysis with $\alpha=0.05$ performed to measure association of satisfaction by different variables. The result was presented using tables, graphs and diagrams. Satisfaction is classified as satisfied and not satisfied by using mean score value.

Data processing and analysis procedure

Data entered into EPI data version 3.1 and exported to SPSS version 21. Then the data were transferred and analyzed by SPSS software package. The descriptive analysis such as frequency distribution, proportions.

Results

Characteristics of the respondent

From the sample size of 206 respondents 202 (98%) were participated in the interview. Majority of respondents were females, married, parents and income less than 1000th birr. Mean age of participants were (27, 7SD 7.30). Listed in Table 1 below.

Socio demographic characteristics of the respondent

From the sample size of 206 respondents 202 (98%) were participated in the interview. Majority of respondents were females, married, parents and income less than 1000th birr. Mean age of participants were (27, 7SD 7.30). Listed in Table 1.

More than three fourth (79%) of respondents were from neonatal ICU. The mean duration of stay in the ICU was (8.12 SD 9.28) days. About 95.5% of families had no previous experience in the ICU. Among families, 71.8% of them respond as the patient had good progress.

Level of family satisfaction in care of critically ill patient in the intensive care unit

The overall satisfaction level of respondents was 62.9% (67 SD

| Demographic character | | Frequency | % |
|-----------------------|---------------------|-----------|------|
| Age of respondent | ≤ 25 | 90 | 44.6 |
| | 25-35 | 88 | 43.6 |
| | >35 | 24 | 11.9 |
| Sex of participant | Male | 48 | 23.8 |
| | Female | 154 | 76.2 |
| Educational status | No formal education | 39 | 19.3 |
| | 1-8 | 61 | 30.2 |
| | 9-12 | 51 | 25.2 |
| | diploma% above | 51 | 25.2 |
| Marital status | Married | 171 | 84.7 |
| | unmarried | 27 | 13.4 |
| | Divorced | 4 | 2 |
| Monthly income | 1000 | 130 | 64.4 |
| | 1000-2500 | 43 | 21.2 |
| | >2500 | 29 | 14.4 |
| Relation with patient | parent | 178 | 88 |
| | partner | 3 | 1.5 |
| | bro/sis | 21 | 10.4 |
| Location of home | Addis Ababa | 153 | 75.7 |
| | Out of Addis | 49 | 24.3 |

Table 1: Socio demographic characteristics of ICU patient's families from all Hospitals ICU Addis Ababa, June 2017.

11.78). The satisfaction level in neonatal unit were higher than families in adult ICU which is (63.8% and 58.3%). Also based on the families ICU experience, respectively. In neonatal ICU. Based on families experience in the ICU. Satisfaction level of families who had no experience in ICU were 63.2% while those who had previous experience in the ICU, was 55.6%. The satisfaction of families related with the length of stay in the hospital indicated in the Figure 1 below.

Detail assessment of satisfaction based on identified indicators shows that majority of families (68.8%) explains about difficulty of knowing the patients care giving nurse and unable to get explanation about tests, procedures and treatment given for the patients. Generally families were more satisfied by the support given by physician and nurses and least satisfied on information and comfortable waiting area. Summarized on Figure 2 below.

Association of variable with satisfaction on the care given to participants in critical care unit

In bivariate analysis, factors that found to have association with satisfaction were age, sex, educational status, monthly income, length of stay and patient condition at p less than 0.2. This variables identified as predictor of family satisfaction in multivariate logistic regression model. In multivariate analysis age, education level and patient health condition had an association with the dependent variables. Age less than 25 by 0.21 times and between 25 to 35 by 0.22 times less odds of satisfaction as compared to age above 35 (AOR 0.21, 95% CI 0.05-0.83) and (AOR 0.22 95% CI 0.06- 0.79) respectively.

Those who have primary education 3.13 times more satisfied than those who had diploma and above by (AOR 3.13, 95% CI 1.16-8.43). Families who consider the patient health condition as deteriorated by 73% and those who had no information about the status of the patient were less satisfied than families who considered the patient status as improved (AOR 0.27 95% CI, 0.11-0.66) and (AOR 0.12 95% CI, 0.04-0.37) respectively. Displayed in the Table 2 below.

Discussion

This study shows the level of family satisfaction in care of critically

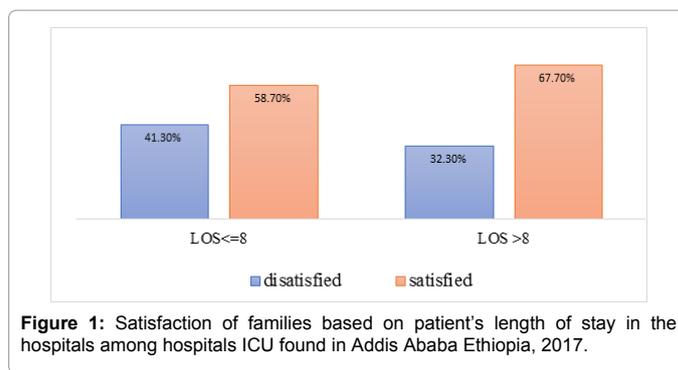


Figure 1: Satisfaction of families based on patient's length of stay in the hospitals among hospitals ICU found in Addis Ababa Ethiopia, 2017.

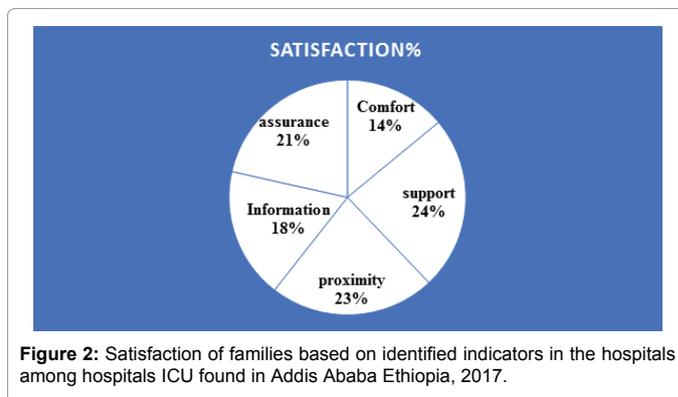


Figure 2: Satisfaction of families based on identified indicators in the hospitals among hospitals ICU found in Addis Ababa Ethiopia, 2017.

ill patients in ICU were 62% (67.7 SD 11.6). The satisfaction is lower than countries like Switzerland and Canada by mean score of (78 SD 15) and (84.3 SD 15.7). This can be due to difference in advancement of technologies, availability of well-trained health professionals and the degree of quality of care given for patients and their family members.

Health professionals support and encouragement, their explanation of tests, procedures, treatment and willingness of staffs in sharing decision regarding the patient care and recovery on regular base were areas which families are least satisfied, Which is 20% (2.26 SD 1-19), 26.6% (2.59 SD 1.10) 34.2% (2.66 SD 1.21) respectively. But study in Canada shows families satisfaction were high on similar variables by the mean of (4.74 SD 0.53), (4.71 SD 0.51) and (4.68 SD 0.65) respectively. In Morocco (81%) of families are satisfied by the information given by Physicians. In this study families satisfaction on support and information were very low, it can be due to the minimum involvement of families in the care given to the patient, less knowledge and practice of health professionals about family centered care and not considering the right of families to get information. Also it can be related with high patient flow with less proportion of (Patient-Nurse) and (Patient-Physician) ratio. Families are least satisfied by the cleanness and appearance of waiting room (31.7%) and its peacefulness and comfort for rest (36.9%). This may be related with loss of adequate place for waiting at a day and night time, difficulty of getting place for basic needs like (for serving, water and toilet). Similarly a study in Japan, Sweden and Canada shows families are list satisfied by waiting room atmosphere.

Variables significantly associated with satisfaction are age, education of families and patient health condition. Age less than 25 by 0.21 times and age 25-35 are 0.22 times less odds of satisfaction as compared to age above 35 (AOR 0.21, 95% CI 0.05-0.83) and (AOR 0.22, 95% CI 0.06-0.79) respectively, but in research done in Greece

| Variables | Not satisfied | Satisfied | COR (95%CI) | AOR (95% C.I.) |
|-------------------------------|---------------|-------------|---------------------|----------------------|
| Age (year) | | | | |
| ≤ 25 | 32 (35.6%) | 58 (64.4%) | 0.477 (0.163-1.398) | 0.218 (0.057-0.835)* |
| 25-35 | 38 (43.2%) | 50 (56.8%) | 0.346 (0.119-1.011) | 0.223 (0.062-0.797)* |
| >35 | 5 (20.8%) | 19 (79.2%) | 1 | 1 |
| Sex | | | | |
| Male | 23 (47.9%) | 25 (52. %) | 0.554 (0.287-1.069) | 0.494 (0.202-1.208) |
| Female | 52 (33.8%) | 102 (66.2%) | 1 | 1 |
| Educational level | | | | |
| No formal education | 10 (25.6%) | 29 (74.4%) | 3.530 (1.427-8.736) | 2.694 (0.971-7.472)* |
| Grade 1-8 | 16 (26.2%) | 45 (73.8%) | 3.424 (1.548-7.571) | 3.131 (1.163-8.431)* |
| Grade 9-12 | 21 (41.2%) | 30 (58.8%) | 1.739 (0.79-3.81) | 1.514 (0.580-0.952) |
| Diploma and above | 28 (54.9%) | 23 (45.1%) | 1 | 1 |
| Patient condition | | | | |
| Worsening | 20 (55.6%) | 16 (44.4%) | 0.305 (0.144-0.646) | 0.27 (0.114-0.664)* |
| Don't know | 15 (71.4%) | 6 (28.6%) | 0.152 (0.05-0.42) | 0.123 (0.040-0.378)* |
| Good progress | 40 (27.6%) | 105 (72.4%) | 1 | 1 |
| Relation with patient | | | | |
| Parent | 64(36.0%) | 114(64%) | 1.33(0.444-4.021) | 1.359(0.426-4.330) |
| Partner | 5(50.0%) | 5(50.0) | 0.750(0.14-03.82) | 2.439(0.12-49.22) |
| Son/daughter | 6(42.9%) | 8(57.1%) | 1 | 1 |
| Monthly income (birr) | | | | |
| ≤ 1000 | 41 (31.5%) | 89 (68.5%) | 2.206 (0.189-4.58) | 1.087 (0.3412-2.86) |
| 1000-2500 | 20 (46.5%) | 23 (53.5%) | 1.073 (0.41-2.75) | 0.76 (0.27-2.15) |
| >2500 | 14 (48.3%) | 15 (51.7%) | 1 | 1 |
| Length of stay in days | | | | |
| ≤ 8 | 45 (41.3%) | 64 (58.7%) | 0.67 (0.380-1.2) | 0.65 (0.33-1.298) |
| >8 | 30 (32.3%) | 63 (67.7%) | 1 | 1 |

Table 2: Result of binary and multiple logistic regression analysis of variables with overall family satisfaction on the care of critically ill patient in ICU of governmental hospitals June 2017.

shows younger families have more satisfaction. This difference may come due to the age category with the population is varied and the education of families in this study is higher in families less than age 35. Respondents primary school 3.13 times odds of more satisfied than families with higher education level (AOR 2.69, 95% CI 0.971-7.472), (AOR 3.131, 95% CI 1.163- 8.431) respectively. Also research in Portugal and Greece shows those with only basic education has more satisfaction than those having higher education. This could be the category of families have less demand and expectation. Families considering the patient health condition as worsening (73%) and those who doesn't know the current status of the patient had (88%) less odds of satisfaction than those families who believe the patient was in good progress by (AOR 0.27, 95% CI 0.114-0.664) and (AOR 0.12, 95% CI 0.04-0.378) respectively. Similarly a study in Brazil

shows families satisfaction were lower when the health condition of the patient become worsening. But in the studies in Washington and Switzerland the satisfaction of families of dying patient is higher than survivors.

This may be because dying patients are older and their families were getting more care and support from health professionals but in case of this study it may be because a family of patients with critical case doesn't get any different care and support. Also can be affected by families' perception of satisfaction in relation with patient outcome. Because there was no literature in Ethiopia, the finding of the research failed to compare with other related literatures and the research has limitation on data in qualitative findings due to limited time and resource.

Conclusion

Majority of families were satisfied by the speed and coordination of health professionals in admission of patient and availability of physicians and nurses when the times of patient need help. Families had low satisfaction in information about the diagnosis and the procedure or tests performed and treatment of the patient. This may show limitedness of physician and nurse communication with families. Most respondents satisfied by noise. Level in ICU and they consider the quietness is comfortable for the patients. Families are list satisfied in sharing decision regarding patient care, this indicate that most decision about the patient is made by the health care providers. Families are not satisfied by peacefulness and comfort of waiting area. Generally the overall family satisfaction is moderate and variables like age, level of education and health condition of a patient significantly associated with satisfaction level.

Ethical Consideration

Ethical clearance obtained from IRB (institution review board) of Addis Ababa University (AAU), School of allied health sciences, and department of nursing and midwifery. Formal letter of cooperation had written to Addis Ababa Health Bureau thento selected hospitals. Informed consent was obtained from each study participant after adequately providing information about the purpose, method, anticipated benefit of the study. Confidentiality was maintained by anonymous coding. During the data collection their privacy and comfort was ensured by preparing isolated environment.

Acknowledgement

Our gratitude goes to the Addis Ababa university school of Nursing for the approval of the ethical clearance. The authors would like to thank data collectors and supervisors for their commitment and the study participants for their valuable information.

Funding

Addis Ababa university school of nursing and midwifery. Availability of data and materials- the raw data would not be provided so as to protect patients' anonymity. However, the summary data are available in the main document.

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