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# Assess The Socioeconomic Burden of Critically Ill Patients, Agra, Uttarpradesh: A Descriptive Study

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## ABSTRACT

**Background**: The cost of critical illness treatment is generally recognized as expensive and increasing in India. Critical illness of the individual will affect the socioeconomic status of the individual and the family. The direct and indirect costs of intensive care and its impact on the socioeconomic status of critically ill patients and their families need to be estimated.

**Objective:** To assess the socioeconomic burden of critically ill patients.

**Methods:** The study was conducted in selected hospitals at Uttar Pradesh by two data collectors and selected hospital.60 critically ill patient's relatives were selected and convenience sampling technique used to select samples. The questionnaire were checked for completeness, cleaned manually and entered in to Epi- Data version 4.2. Then the data was transferred in to SPSS version 21.0 for further analysis. Descriptive statistics were carried out. Finally checked association between dependent and independent variables.

**Results:** revealed that 31 (52%) critically ill patients relatives had poor socioeconomic, 24 (40%) had average socioeconomic, and 5(8%) had well socioeconomic. There was a significant association between socioeconomic status of critically ill patient and their demographic variables such as monthly income of patients. $p<0.05$ level. There was no association between the demographical variables such as age, gender, resident area, occupational status, socioeconomic status and educational status at $p<0.05$ level..

**Conclusion:** Critical care hospitalization of patients increases the socioeconomic burden on the whole family, especially in lower-middle-income countries like India. It soberly affects younger age group patients with low socioeconomic status and families depending on the patient's income during their man days.

***Keywords:*** *Assess, Socioeconomic, Burden,patients.*

## *1.* INTRODUCTION

India boasts one of the world's most extensively privatized healthcare systems. Ten percent of ICU beds are accessible in state hospitals, whereas ninety percent are contributed by private hospitals and healthcare organizations. Simultaneously, 40% of the population requiring ICU care is considered to be below the federal poverty limit (BPL). Because of this mismatch, the families may experience disastrous repercussions, including an ICU admission on a single occasion. Because of the hefty out-of-pocket (OOP) costs, almost 8% of the population is still below the poverty line.[1].

A single ICU admission has the potential to plunge a family into extreme poverty, with expenditures estimated to be 100 times higher than per capita income. According to data from a tertiary care hospital that receives government funding, the average out-of-pocket expenses per patient bed-day in the intensive care unit (ICU) was INR 13, 194 (US$168.55). Additionally, 51% of the patients' families had to use all of their lifetime savings to cover these costs. It's interesting to note

that the main expenses incurred by patients admitted to publicly financed hospitals were medications, pharmaceuticals. [2]. additionally, it has been reported that ICUs in low-income nations have stopped providing life-sustaining therapies to patients at the families' request in order to save money. Regretfully, had the treatment continued, these patients would have had a decent chance of surviving. In India, providing intensive care at a reasonable cost and minimizing out-of-pocket expenses for patients' families who are admitted to intensive care units are challenges. One

possible explanation for this could be the low uptake of government-funded insurance programs [3]. In India, there are a number of government-funded health insurance plans (GFHI), although out-of-pocket costs remain high. This could result in the impoverished having unequal access to healthcare services. Additionally, GFHI's penetration was lopsided. In comparison with their peers, non-poor and urban people account for the majority. It suggests that programs aimed at the impoverished, who spend a significant portion of their household income when hospitalized, have failed. In terms of GFHI coverage in India, the household survey (2020–2021) found significant discrepancies between claims of official government data and household surveys. [4].

The family of a patient getting ICU care may face a considerable socioeconomic burden due to the patient's lack of insurance, the direct expense of ICU care, and indirect expenditures including stay, travel, lost income, rehabilitation, and follow-up care. There was a dearth of research on the socioeconomic strain experienced by families of patients admitted to ICUs in public hospitals, despite the abundance of literature on the burdens faced by careers and relatives of ICU survivors. Furthermore, the type and attributes of the load placed on relatives of patients admitted to public hospitals ICUs are special because the government pays for the procedure, food, necessary medications, tests, advanced equipment, and life-sustaining therapies.[5]

## 2. METHODOLOGY

Research approach

Quantative research approach

Study area and period

Study was conducted at selected hospitals at Agra, uttarpradesh and study period one month.

**Study design**

A facility based cross sectional study was conducted to attain the objectives of the study.

Population

**Source and study population:** All critically ill patient family relatives were selected

### *Inclusion criteria and Exclusion criteria*

**Inclusion criteria**:

Critically ill patient family members

Critically ill patient family members willing to participate in study

**Exclusion criteria:**

Critically ill patient family members are absent during data collection period

### *Sample size: Convenience sampling technique selected 60* critically ill patient family member

**Variables**

**Dependent variable:** Socioeconomic burden

**Independent variables:**

Age, Gender, Area of residence, Education status, Occupation, Head of the family, socioeconomic status, Family monthly income

### *Operational definition*

**Socioeconomic burden:** In this study it refers to the assesses the limitations imposed by a disease and quantifies the productivity losses, measured in absence of (paid and unpaid) work.

**Critically ill:** In this study it refers to the state of ill health with vital organ dysfunction, a high risk of imminent dealt.

**Patient:** In this study it refers to the *person who is receiving medical care at intensive care unit*, or who is cared for by a physician or health professional, when necessary.

Data quality control

One week before to the actual data collection date, 10% of the sample size underwent a pretest of the data collecting questionnaires, which will be examined outside of the study location. The tools will be modified and altered in order to satisfy the study's goals after the pretest. Throughout the data gathering process, the data collectors and the technique of collection were closely observed, and the acquired data was regularly reviewed to ensure consistency. The supervisors examined any missing questionnaire questions that the data collectors misinterpreted right away, and the primary investigators fixed them for the following day's data collecting.

## *Data processing and analysis*

Before the study started, the acquired data was cleaned, coded, and added to the SPSS software. The statistical kit for social sciences (SPSS) version 20 will be used to enter and analyze the data, and the results will be displayed in a precise manner utilizing cross tabs, proportions, and frequencies. P-values of less than 0.05 were used to classify an association between dependent and independent variables as statistically significant.

## 3. RESULT

**Table:1: Socio-Demographic Characteristics of respondents**

| **Characteristics** | | **Frequency** | **Percentage (%)** |
|---|---|---|---|
| **Age in Years** | 30-40 | 5 | 8 |
| | 41-50 | 15 | 25 |
| | 51-60 | 21 | 34 |
| | >61 | 20 | 33 |
| **Gender** | Male | 20 | 33 |
| | Female | 40 | 67 |
| **Resident area** | Urban | 20 | 33 |
| | Rural | 40 | 67 |
| **Educational status** | No formal education | 10 | 17 |
| | Primary | 15 | 25 |
| | High school | 10 | 17 |
| | Higher secondary | 20 | 33 |
| | Graduation and above | 5 | 8 |
| **Occupational status** | Employed | 30 | 50 |
| | Un Employed | 30 | 50 |
| **Monthly income** | <5000 | 20 | 33 |
| | 5001-10,000 | 30 | 50 |
| | 10,001-20,000 | 5 | 8 |
| | >20,001 | 5 | 8 |
| **Socioeconomic** | Upper | 10 | 17 |
| | Upper middle | 20 | 33 |
| | Lower | 20 | 33 |
| | Lower middle | 10 | 17 |

As shown in the Table (1)**,** A total of 60 patient relatives took part in the study, resulting in a 100% response rate. According to the study, Maximum 21(34%) were age group of 51-60 years and 20 (33%) of the respondents were between the ages of >61 Years,15(25%) were 41-50 years and 5(8%) were 30-40 years respectively. Regarding gender 40 (67%) of patient relatives were female, and 20 (33%) were male. Regarding resident area of patient relatives 40(67%) were rural area,20(33%) were urban area.

Regarding educational status of patient relatives 20(33%) were higher secondary. 15 (25%) were primary education, 10 (17%) were no formal education and high school and 5 (8%) graduation and above. Regarding occupational status of patient relatives 30(50%) were employed and 30(50%) were unemployed. Regarding monthly income of patient relatives 30(50%) were 5001-10, 000,20(33%) were <5000,5(8%) were 10,001 to 20,000 and >20000.

Regarding socioeconomic status of patient relatives 20(33%) were upper and lower and 10 (17%) were upper and lower middle.

**Table:2: Level of socioecomic status**

| **Characteristics** | **Socioeconomic status** | |
|---|---|---|
| | **F** | **Percentage** |
| **Poor socioeconomic** | 31 | 52% |
| **Average socioeconomic** | 24 | 40% |
| **Good socioeconomic** | 5 | 8% |

According to Table 2, revealed that 31 (52%) critically ill patients relatives had poor socioeconomic, 24 (40%) had average socioeconomic, and 5(8%) had good socioeconomic.

**Table 3: Association between levels of socioeconomic status among patient relatives with selected socio demographic variables.**

| **Demographic variables** | | **Level of socioeconomic status** | | | | |
|---|---|---|---|---|---|---|
| | | **Poor** | **average** | **Good** | **Total** | **Chi-square P value** |
| Age in years | 30-40 | 4 | 4 | 1 | 9 | □□□□□□2=1.84 P=0.14 |
| | 41-50 | 10 | 10 | 2 | 22 | |
| | 51-60 | 12 | 6 | 1 | 19 | |
| | >61 | 5 | 4 | 1 | 10 | |
| Gender | Male | 20 | 14 | 2 | 36 | □□□□□□2=0.92 P=0.24 |
| | Female | 11 | 10 | 3 | 24 | |
| Resident area | Urban | 15 | 10 | 2 | 27 | □□□□□□2=2.75 P=0.44 |
| | Rural | 16 | 14 | 3 | 33 | |
| Occupational status | Employed | 15 | 10 | 2 | 27 | □□□□□□2=0.49 P=0.23 |
| | Un Employed | 16 | 14 | 3 | 33 | |
| Educational status | No formal education | 6 | 5 | 1 | 12 | □□□□2=1.49 P=0.82 |
| | Primary | 6 | 7 | 1 | 14 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | High school | 8 | 6 | 1 | 15 | |
| | Higher secondary | 5 | 4 | 1 | 10 | |
| | Graduation and above | 5 | 2 | 1 | 8 | |
| **Monthly income** | <5000 | 14 | 7 | 1 | 22 | □□□□2=0.96 P=0.04* |
| | 5001-10,000 | 10 | 5 | 1 | 16 | |
| | 10,001-20,000 | 5 | 10 | 1 | 16 | |
| | >20,001 | 2 | 2 | 2 | 6 | |
| **Socioeconomic** | Upper | 2 | 2 | 1 | 5 | □□□□2=1.87 P=0.23 |
| | Upper middle | 2 | 2 | 1 | 5 | |
| | Lower | 15 | 10 | 2 | 27 | |
| | Lower middle | 12 | 10 | 1 | 23 | |

**(* -P>0.05, significant) (NS=Not significant)S=(significant)**

The above table 3 shows that there was a significant association between socioeconomic status of critically ill patient and their demographic variables such as monthly income of patients. p<0.05 level. There was no association between the demographical variables such as age, gender, resident area, occupational status, socioeconomic status and educational status at p<0.05 level.

## 4. CONCLUSION:

Anybody can suffer from a critical sickness, even the family members who earn the most money. Patients and their families must pay significant upfront and indirect medical expenditures when receiving treatment for a serious illness. Indirect costs include missed workdays or school days, lost income from a job due to illness, hospitalization, and loss of potential income for the patient and career. Direct costs include hospital admission, treatment, medications, transportation, food, and lodging for family members. These costs are frequently linked to death and illness rate.

## 5. DISCUSSION

Similar study was conducted to carried out to evaluate the socioeconomic burden of critically ill patients admitted to ICUs in Eastern India. A descriptive survey was conducted to measure the socioeconomic burden. One hundred fifteen critically ill patients and their family members were conveniently selected for the study. Critically ill patients admitted to ICUs and those who were bedridden for more than seven days along with anyone the family member, i.e., spouse, father, or mother, were included in the study to estimate the impact of long-term illness on the care providers in the family. Socio-demographic and socioeconomic burdens were analyzed through the interview method. Result showed that Half (49.6%) of the critically ill patients were heads of the family, and their employment is the primary source of income for the family members. Most (60.9%) of the patients belonged to lower socioeconomic status. Critically ill patients spend a maximum (38169.6±3996.2) amount for pharmaceutical expenses. Eventually, the family members accompanying patients lost maximum working days because of the long length of hospital stay. Below upper-lower (p=0.046) class socioeconomic family, age less than 40 (p=0.018) years, and those families depending (p=0.003) on patients' income significantly reported higher socioeconomic burden. Study concluded that Critical care hospitalization of patients increases the socioeconomic burden on the whole family, especially in lower-middle-income countries like India. [6].

Conducted study to determine the influencing factors of the subjective burden of informal caregivers and to seek solutions accordingly, a cross-sectional study was conducted in Shandong, China. Result showed that 554 samples were selected for analysis. The average scores of Zarit Caregiver Burden Interview (ZBI) scores in this study was 30.37±19.04 (n=554). ZBI scores of older, less educated, and spouse caregivers were significantly lower (4.12; 95%CI, 0.42 to 7.81; P =0.029). Objective and subjective burdens increased proportionally. Secondary role stress factors included the higher out-of-pocket (OOP) costs of critical diseases and lower household income, both of which increased caregivers' subjective burdens (1.28; 95%CI, -0.06 to 2.63; p=0.062). Formal medical aid systems played a positive role in reducing subjective care giving burdens (-7.31; 95%CI, -13.23 to -1.40; p=0.016).Study concluded that Health policies should address both the direct medical burdens and the intangible psychological burdens of critical diseases.[7].

**Competing interest:**

The authors report no conflicts of interest for this work.

**Author contribution:**

All authors critically revised the manuscript

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