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Original Research Article

Psychological and socio-economic burden on families of patients admitted in intensive care unit

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Abstract

Study objective: To study symptoms of anxiety and depression in family members of intensive care unit patients.
Design and setting: Study done in medical intensive care unit Father Muller medical college hospital Mangalore, Karnataka, India.
Participants: Family members answered the Hospital Anxiety and Depression Scale (HADS) during their stay in ICU along with other personal details.
Results: Hundred family members answered the Hospital Anxiety and Depression scale. Symptoms of anxiety were present in 35% and depression in 66%. 32% relatives had both anxiety and depression. Anxiety decreases with age (p=0.008). Anxiety is more in female (44.4%) than male (27.2%) (p=0.017). Depression was common in younger age group (p=0.059). Females and younger age groups are at high risks.
Keywords: Anxiety, depression, HADS, ICU, family members.

1. Introduction

Over the last few decades there have been drastic changes in the lifestyle of the general public in India. This recent adoption of a sedentary lifestyle has caused a sharp increase in the incidence of cardiac diseases within the country. India is known to be the capital for head injuries due to the increase in road traffic accidents each year .All of the above mentioned causes have resulted in an increased annual ICU admission of more than 5 million/year in India [1]. Life threatening illnesses and hospitalization in the ICU often occurs unexpectedly, and can have devastating effects on the families of these patients.

Close relatives are often under tremendous psychological pressure and economic miseries often compound their problem. Relatives, whose minds are already burdened by the traumatic event can have their decision making capability affected causing them to make wrong decision at a crucial moment. Within the hospital, the doctors and nurses are always preoccupied with the patient and little to no attention is paid to the family members [2]. Most patients have a tedious and drawn out recovery process in the ICU, their bystander caught up in the emotional distress will tend to neglect their own well-being leading to injurious consequences to their health [3].

According to the study conducted in Brazil, the family members of ICU patient suffer more than the patient, from anxiety, depression and post-traumatic stress [4]. Another study in Kerman, Iraq revealed out, of the 244 family members of brain death patient in ICU, 76.8% had anxiety, 75% had depression and 70.1% suffered from stress[5]. A study found that 35.9% of relatives take anxiolytic or antidepressant drugs and 8.9% of them take prescribed psychotropic agents after discharge or death of the patient [3]. This shows us, ICU family members are in turmoil of negative emotions with anxiety and depression at the root of it.

India is a country where 21.9% of its population is below poverty line [6]. Study in India showed that out of 143 ICU deaths, 49 were due to limitation of care [7]. In one of the studies it was found that 40% of those admitted in ICU had to borrow money or sell assets to pay for the medical expenses [8]. Even though India has 70000 ICU beds with 5 million ICU admissions every year [1], only a few studies have been conducted in this field.

A study in France investigated the various factors that influence anxiety and depression. Factors that increase anxiety were: patient related factors (absence of chronic disease), family related (female gender of relative) and

caregiver factor (irregular healthcare professional-family meeting, and absence of specific rooms for these meetings). Factors that increase depression were: patient related factor (age), family related (spouse, female gender, not a French descent) and caregiver factors (absence of waiting rooms, contraindication in the information given by healthcare-professionals) [9].

Hospital anxiety and depression scale which was developed by Zigmond and Snaith[10]. This is extensively validated 14 item questionnaire [11]. There are 7 questions for anxiety analysis and 7 for depression, each question has 4 options, each option is graded from 0-3 depending on the severity. So the minimum score can be 7 times 0=0 and maximum can be 7 times 3= 21. If the score is below 10 the person is normal, between 7 and 10 person is in borderline for being anxious or depressed, between 11 and 15 moderately anxious or depressed and between 16 and 21 person is severely anxious or depressed[11,12].

2. Materials and methods

The study was conducted in medical intensive care unit of Father Muller medical college hospital, Mangalore, Karnataka, India. Study was questionnaire based .The study size was 100 and was done during the month of May and June of the year 2015. The inclusion criteria were the family member should be above the age of 18 years and close relative of patient .family member under medication for psychological problems were not included. The questionnaire consisted of demographic details, relation, annual income of the family and how they meet hospital expenses. To evaluate anxiety and depression HADS was used. If the family member was eligible for study, informed consent was taken from them .Then they were asked question in their vernacular or language which they understood and the response was noted down. Ethical clearance was obtained from Institutional ethics committee, Father Muller medical college, Kankanady, Mangalore.

3. Results

The family members who underwent the study were 100 in numbers of which 35% had anxiety, 66%had depression and 32% had both anxiety and depression. Of the 35 who had anxiety, 33 were moderately anxious and 2 were severely anxious and of the 66, who were depressed, 37 were moderately depressed and 29 were severely depressed. Borderline anxiety was present in 35 and borderline depression in 18 of the family members.

The family members were in the age group of 18-65 years with a mean age of 37.24years.They had a mean anxiety score of 8.8 out of 21 with a standard deviation of 4.14. Mean depression score was 11.74 out of 21 with a standard deviation of 4.800

Figure 1: Anxiety score among families of ICU patients

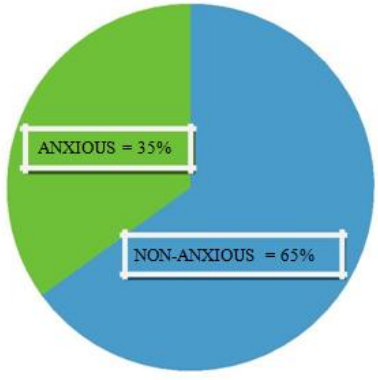
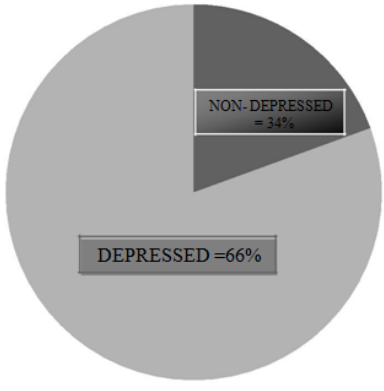


Figure 2: Depression among families of ICU patients.



Variation of anxiety with age was found to be very significant (p=0.008). The anxiety score decreased with progression of age. Of 100 family members 50 were in the age group of 18-35 years, of which 23(46%) were anxious, 37 were in age group of 36-50years of which 11(29.7%) were anxious and 13 were above age of 50 years of which only one (7.6%) was anxious. The effect of age on depression was not significant (p=0.059).

The variation of anxiety score with sex was significant (p=0.017). Out of 100, 55 were males and 45 were females, of 55 males 15(27.2%) were anxious and of 45 females 20(44.4%) were anxious, this shows that incidence of anxiety is almost twice as much in females as in males.

There was a change in the anxiety score with education (p=0.080). Out of 100 who underwent the study 57 had education up to 10^{th} standard of which 15(27.2%) were anxious and 5 who had master degree 4(80%) were anxious. For relatives with master degree had a mean anxiety score of 12.800, which was quite high, and a standard deviation of 2.3874. The depression score increased with an increase in educational level (p=0.143). The degree holders were 16 of which, 14(87.5%) were depressed with a mean depression score of 13.9375. The relatives with post-graduation had a mean depression score of 13.2000 and all 5 were depressed.

Effect of type of relationship shared between

patient and Family member on anxiety and depression score showed that daughter and wife had a higher depression and anxiety score. Anxiety score with relation (p=0.129) and depression score with relation (p=0.367). Mean anxiety score for daughter and wife was 10.391 and 9.8421 respectively. Depression was higher in daughter and spouse, the mean depression score for daughter, wife and husband was 13.4783, 11.3684 and 11.2857 respectively.

The families with higher annual income had higher level of anxiety, but this wasn't significant (p=0.602) for the anxiety score.

Variation of HADS score with mode of payment of hospital expenses was studied next. It was found that families with health insurance had a lower anxiety and depression score. p value for depression with mode of payment of hospital expenses (p=0.116). The mean depression score for family members who met hospital expenses only by health insurance was 5.31037 which is very less compared to the mean depression score of whole study group which is 11.740.

Mode of payment of hospital expenses as opted by families of ICU patients

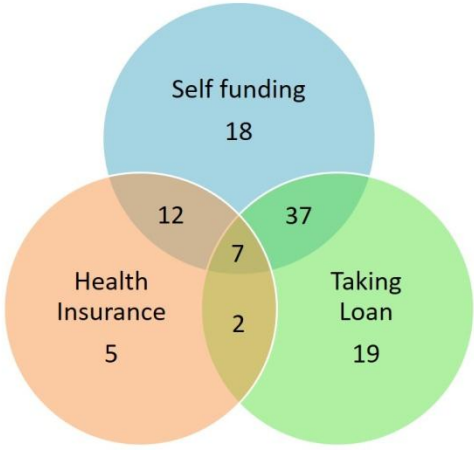


Table 5: Anxiety scores with various factors

Factors	Total Number	Number of Anxious	% of Anxious	Mean	P Value
AGE	100	35	35%	8.800	0.008
18- 35 years	50	23	46%		
36-50 years	37	11	29.7%		
51 and above	13	1	7.6%		
SEX					0.017
Male	55	15	27.2%	7.909	
Female	45	20	44.4%	9.888	
EDUCATION					0.080
Up to10thclass	57	19	33.3%	8.807	
Up to12thclass	12	1	8.3%	6.583	
Skill training	10	4	40%	9.300	
Degree	16	7	43.7%	8.750	
Master degree	5	4	80%	12.800	
MARITAL STATUS					0.790
Married	78	26	33.3%	8.859	
Unmarried	22	9	40.9%	8.590	
ANNUAL INCOME					0.602
Below 1 lakh	33	14	42.4%	9.303	
1-2 lakhs	47	17	36.1%	8.808	
2-3 lakhs	13	3	23%	8.461	
Above 3 lakhs	7	1	14.2%	7.000	
RELATION					0.129
Son	44	13	29.5%	8.622	
Daughter	23	11	47.8%	10.391	
Wife	19	8	42.1%	7.142	
Husband	7	1	14.2%	9.842	
Father	4	1	25%	8.000	
Mother	3	1	33.3%	6.333	

Table 6: Depression scores with various factors

Factors	Total Number	Number of Depressed	% of Depressed	Mean	P Value
AGE	100	66	66%	11.740	0.059
18- 35 years	50	38	76%		
36-50 years	37	20	54%		
51 and above	13	8	61.5%		
SEX					0.366
Male	55	35	63.6%	11.345	
Female	45	31	68.8%	12.222	
EDUCATION					0.143
Up to10thclass	57	33	57.8%	11.543	
Up to12thclass	12	8	66.6%	11.250	
Skill training	10	6	60%	9.200	
Degree	16	14	87.5%	13.937	
Master degree	5	5	100%	13.200	
MARITAL STATUS					0.971
Married	78	52	66.6%	11.730	
Unmarried	22	14	63.6%	11.772	
ANNUAL INCOME					0.572
Below 1 lakh	33	22	66.6%.	12.363	
1-2 lakhs	47	29	61.7%	11.680	
2-3 lakhs	13	9	69.2%	10.153	
Above 3 lakhs	7	6	85.7%	12.142	
RELATION					0.367
Son	44	28	63.6%	11.431	
Daughter	23	19	82.6%	13.478	
Wife	19	11	57.8%	11.285	
Husband	7	6	85.7%	11.368	
Father	4	2	50%	10.500	
Mother	3	1	33.3%	8.000	

4. Discussion

The study showed the existence of anxiety (35%) and depression (66%) among the family members of the ICU patient. Both anxiety and depression were found in 32%, with depression being more common than anxiety. This is similar to a study conducted in Turkey where it was found that 71.8% had depression and 35.9% had anxiety [13]. The study conducted in Iraq showed that more than 75% have anxiety and depression [5]. A study performed in France found that anxiety is more common than depression in French descendants, while converse was found in non-French descendants [9,14]. In India even though ICU admissions are more than 5 million every year, only a few studies have been conducted , one study that was done to compare anxiety and depression in Indian and American families of ICU patient found anxiety and depression to be more common in Indian families with a high incidence of depression[15]. Another study in Mangalore, India found that anxiety is more common in families of ICU patient than depression, this could have occurred due to difference in the scale used to measure anxiety and depression (depression, anxiety, stress scale was used)[16].

The mean age of study subjects was 37.24 years ,which is less as compared to French (47years) and American (45years) ICU family members[14,15]. The symptoms of anxiety are more common among females than males. One of the reasons could be due to majority of Indian women do not take part in decision making on a regular basis. It was found those younger age groups have higher anxiety than older age group. One of the reasons could be due to lack of life experience involving such situation. The existence of anxiety and depression is high in people with a higher education background. Being highly educated makes the person aware of consequences which can take place, making them more susceptible for anxiety.

Anxiety levels are lower in persons belonging to higher income category. The expenses of taking treatment in the ICU are very high, resulting in a worry among the families of low socio-economic status about obtaining the required money. People belonging to higher socio economic status will not worry about monetary expenditure resulting in them having lower anxiety level, but depression is high among the families with high annual income. Another finding is that families who have health insurance have less anxiety and depression. Out of 100, 5 families paid only by health insurance. A study in America showed that families with health insurance use the ICU facilities more than those families that do not, health

insurance eases financial burden which will decrease anxiety and depression [17].

The most common mode of payment of hospital expenses is by taking a loan, this shows that people in India are not well equipped to handle a sudden health situation.

The effect of type of relationship shared between the patient and family members showed that the anxiety is higher in daughter and wife than other family members and symptoms of depression are more in spouses and daughters of ICU patients than their sons and parents.

5. Conclusion

Depression and anxiety were found to be common among the family members of the study .Depression was present in 66% of the people, while 35 % presented with anxiety. Both anxiety and depression were present in 32% of the people.

Anxiety decreased with increase in age (p=0.008). Females had higher incidence of anxiety (44%) in comparison to males, in whom it was (27.2%). (p=0.017). Further studies have to be conducted to determine the reasons behind variation of anxiety and depression with age and sex.

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