

## Stress Disorders in Attendants of patients admitted in Intensive Care Unit

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### ABSTRACT

*Introduction* Stress related issues among the family members of patients admitted to intensive care units are often ignored entities. Indian data on these issues is scarce. The study evaluates the various factors contributing to anxiety and depression among the attendants of ICU patients through a validated questionnaire and helps in understanding the communication and counseling by ICU staff as an important measure to reduce these entities. *Materials and Methods* A prospective observational study was carried out after obtaining ethical committee clearance and informed written consent for the study. It was planned as a questionnaire based study using Hospital Anxiety and Depression Scale (HADS) proforma. Our study was conducted in an 1100 bedded tertiary care government hospital in Northern India which has a 10 bedded open ICU catering to multispeciality patients. *Results* From observations of the present study it was inferred that there is a high prevalence of anxiety and depression among the relatives of patients in ICU. *Conclusion* Majority of the attendants visiting patients in ICU suffer from symptoms of anxiety or depression. The major factors contributing to this include male patient, dependence of the attendants on the patient, inadequate information given by ICU doctors and poor financial status of the family. Recognition of abnormal signs of anxiety and depression, adequate counselling or even professional help by psychologists should be provided at the earliest possible which may help in reducing long term consequences like Post Traumatic Stress Disorder.

**Keywords:** Hospital anxiety depression scale, Intensive care unit, Attendants, Stress disorders.

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### INTRODUCTION

Stress related issues among the family members of patients admitted to intensive care units (ICU) are often ignored entities<sup>1</sup>. Studies done time and again in this area have almost equivocally pointed towards the high prevalence of anxiety and depression among them. Concern and support to the family members of high risk patients thus plays an integral role in providing a holistic approach to ICU care.

The concept of family centred care has evolved and gained worldwide acceptance over the last few decades<sup>2</sup>. This aims to fulfil the informational and emotional needs of the family members which in turn improves their satisfaction and reduces stress and its consequences<sup>3-8</sup>. Indian data on these issues is scarce. By conducting this study we intend to evaluate the various factors contributing to anxiety and depression among the patients attendants and

thereby deduce the measures which can help in reducing such stress in our ICU set up.

### MATERIALS AND METHODS

Our study was conducted in an 1100 bedded tertiary care government hospital in Northern India which has a 10 bedded open ICU catering to multispeciality patients over a period of six months. We follow a particular protocol for interaction with the attendants of patients in ICU. After the morning grandrounds, the attendants of critical patients are communicated and counselled by faculty in-charge of ICU. The attendants of patients who are relatively stable, are informed and counselled by the senior residents or senior nurses. Subsequently the attendants are allowed to see the patients on an individual basis for an hour in the morning and evening.

A prospective observational study was carried out after obtaining ethical committee clearance and informed written consent from the patients attendants. It was a questionnaire based study using Hospital Anxiety and Depression Scale (HADS) proforma<sup>9</sup> which is a validated tool to measure the prevalence of anxiety and depression in patients or their relatives.

HADS questionnaire is a 14 item scale with seven items each for anxiety and depression i.e. HADS-A and HADS-D. It detects symptoms of

anxiety and depression excluding those arising from physical ailments, fatigue, insomnia or hypersomnia. Each item is scored as 0-3. In each section a score of 0-7 indicated normal level of anxiety or depression, 8-10 was considered borderline (BL) while 11-21 was abnormal. 100 patients who remained in the ICU for 7 days were chosen. After informed consent, one attendant from each family of the patient, who was present most of the time in the hospital was asked to complete the HADS questionnaire on the 7<sup>th</sup> day of

ICU stay. Attendants with known history of anxiety, psychiatric disorder or stress related medical condition like hypertension were excluded from the study.

Questionnaire was translated in Hindi by professional experts for those who could not follow English. It was filled up by the attendant personally in the presence of the authors and in case of illiterate attendants; it was completed by the authors of the study after explaining the choices of questionnaire.

## STATISTICAL REVIEW

Descriptive statistics were employed for evaluation of compiled data

**Table 1**

	Anxiety			Depression		
	Normal (n=34)	BL (n=4) Borderline	Abnormal (n=62)	Normal (n=32)	BL (n=6) Borderline	Abnormal (n=62)
Age	32 (16,75)	44 (40,48)	40 (9, 75)	31 (16,56)	60 (26,75)	48 (9,75)
Sex						
Male	14(41.2%)	2(50.0%)	42(67.7%)	14(43.8%)	4(66.7%)	40(64.5%)
Female	20(58.8%)	2(50.0%)	20(32.3%)	18(56.2%)	2(33.3%)	22(35.5%)
Dependence of attendant on patient						
No	24(70.6%)	0(0.0%)	26(42.0%)	18(56.2%)	6(100.0%)	26(42.0%)
Yes	10(29.4%)	4(100.0%)	36(58.0%)	14(43.8%)	0(0.0%)	36(58.0%)
Socio-economic condition						
BPL	14(41.2%)	4(0.0%)	14(22.6%)	18(56.2%)	0(0.0%)	14(22.6%)
LMC	16(47.1%)	0(0.0%)	44(71.0%)	10(31.3%)	6(100.0%)	44(71.0%)
UMC	4(11.7%)	0(0.0%)	4(6.4%)	4(12.5%)	0(0.0%)	4(6.4%)
Consciousness level of patient						
Conscious	26(76.5%)	0(0.0%)	24(38.7%)	20(62.5%)	4(66.7%)	26(42.0%)
Unconscious	8(23.5%)	4(100.0%)	38(61.3%)	12(37.5%)	2(33.3%)	36(58.0%)
Patient On/not on ventilation						
Not on ventilation	24(70.6%)	0(0.0%)	16(25.8%)	18(56.3%)	2(33.3%)	20(32.3%)
On ventilation	10(29.4%)	4(100.0%)	46(74.2%)	14(43.7%)	4(66.7%)	42(67.7%)

**Table 2: Anxiety and depression status according to average age distribution of ICU patients**

	Average Age (Anxiety)	Average Age (Depression)
Normal	32	31
Borderline (BL)	44	60
Abnormal	40	48

**Figure 1: Anxiety and Depression status according to age distribution of ICU patients**

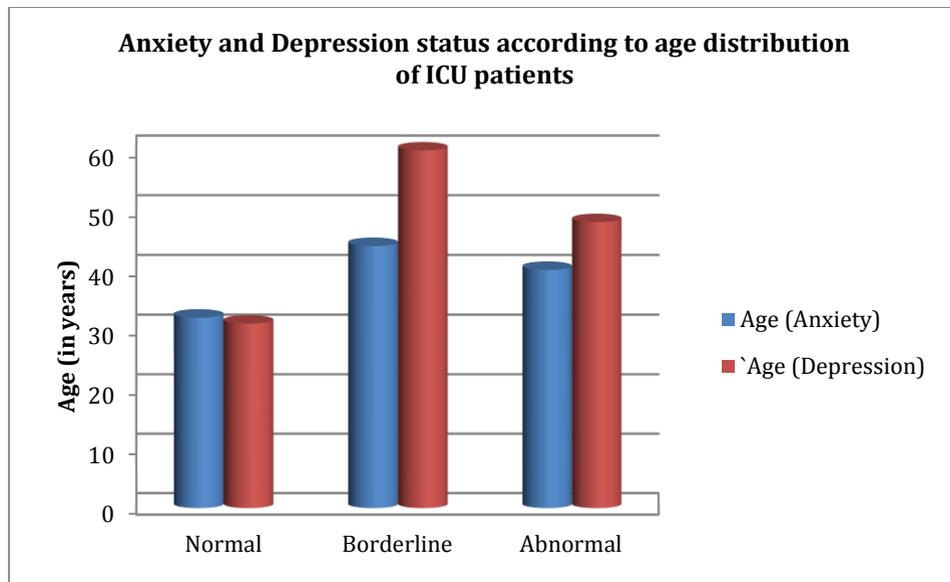


Table 3: Anxiety and Depression status according to sex distribution of ICU patients

	Male (Anxiety)	Female (Anxiety)	Male (Depression)	Female (Depression)
Normal	14	20	14	18
Borderline	2	2	4	2
Abnormal	42	20	40	22

Figure 2: Anxiety and Depression status according to sex distribution of ICU patients

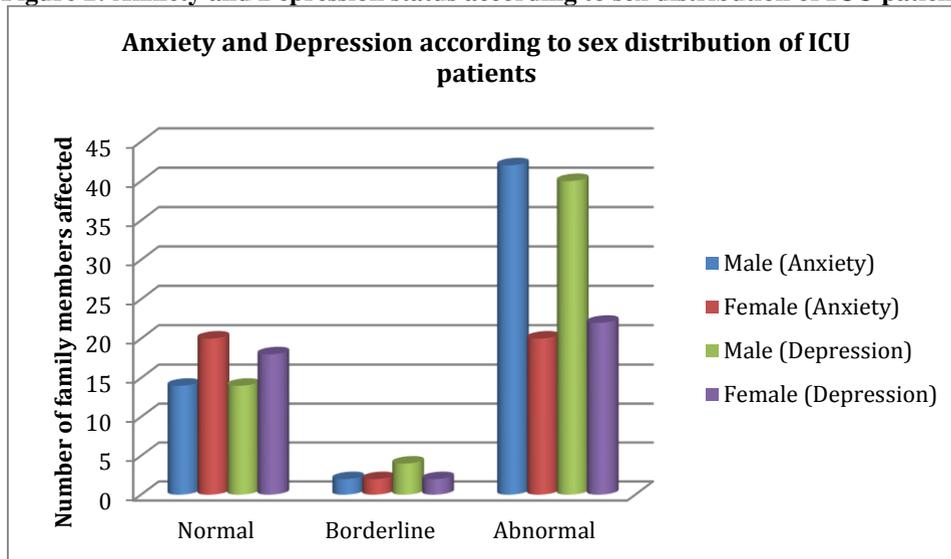


Table 4: Anxiety and Depression distribution as per dependence of family members on ICU patients

	Dependence (Anxiety)	No dependence (Anxiety)	Dependence (Depression)	No dependence (Depression)
Normal	10	24	14	18
Borderline	4	0	0	6
Abnormal	36	26	36	26

Figure 3: Anxiety and depression distribution as per dependence of family members on ICU patients

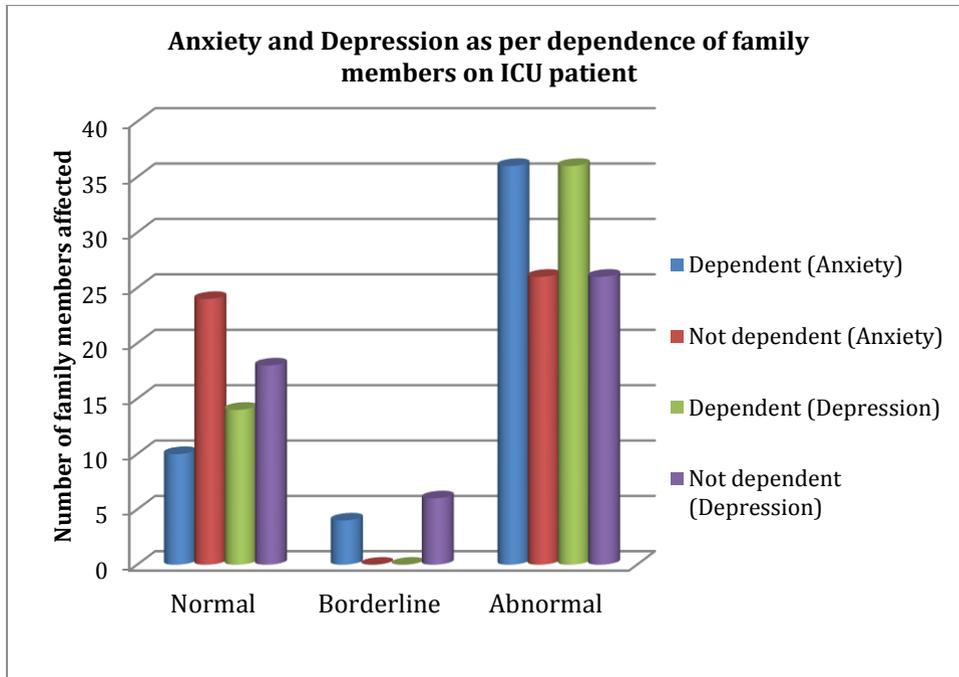


Table 5: Distribution of Anxiety and Depression as per socio-economic status of patients in ICU

	BPL (Anxiety)	LMC (Anxiety)	UMC (Anxiety)	BPL (Depression)	LMC (Depression)	UMC (Depression)
Normal	14	16	4	18	0	14
Boderline	4	0	0	10	6	44
Abnormal	14	44	4	4	0	4

Figure 4: Distribution of Anxiety and Depression as per socio-economic status of ICU patients

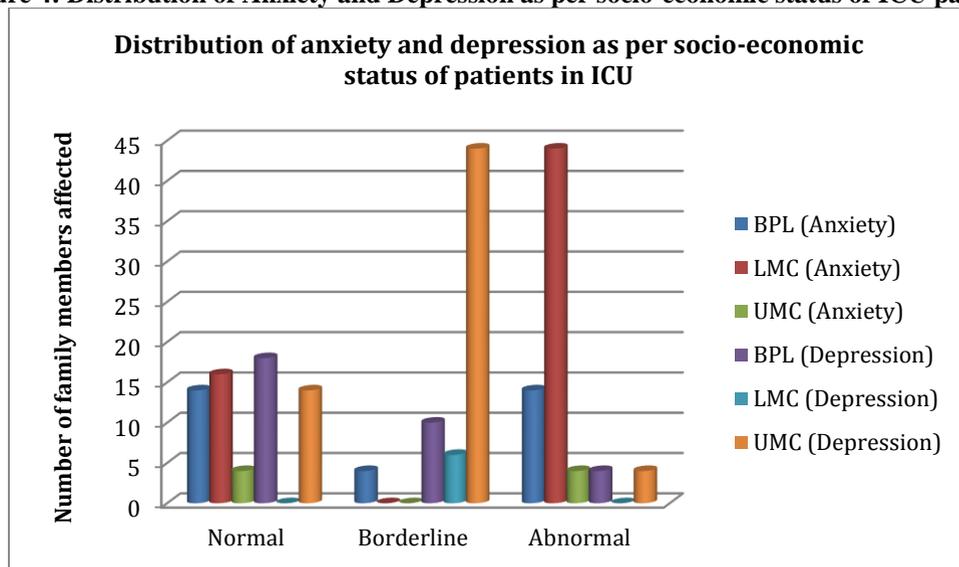


Table 6: Distribution of Anxiety and Depression as per level of consciousness of ICU patients

	Conscious (Anxiety)	Unconscious (Anxiety)	Conscious (Depression)	Unconscious (Depression)
Normal	26	10	20	12
Borderline	0	4	4	2
Abnormal	24	46	26	36

Figure 5: Distribution of Anxiety and Depression as per level of consciousness in ICU patients

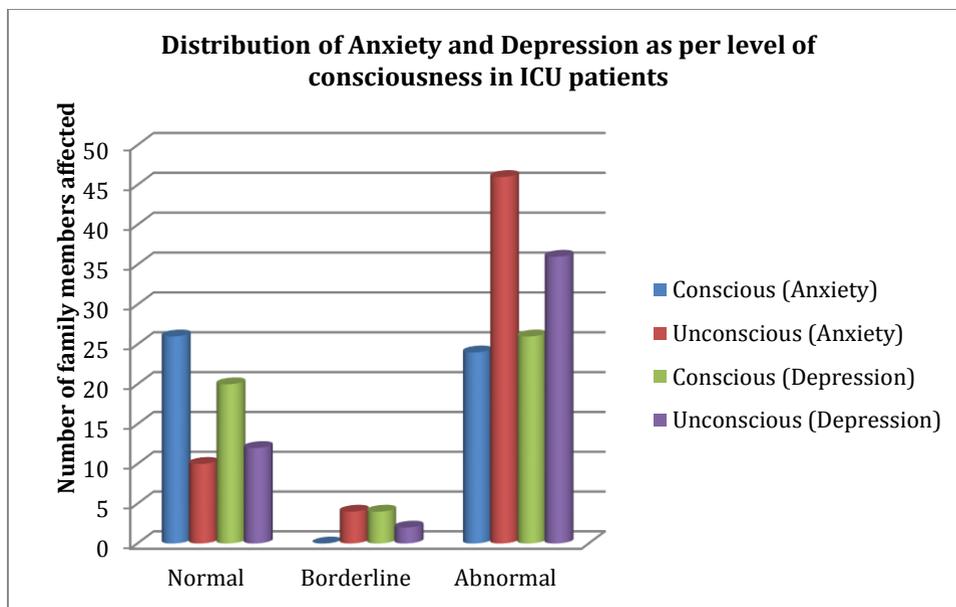
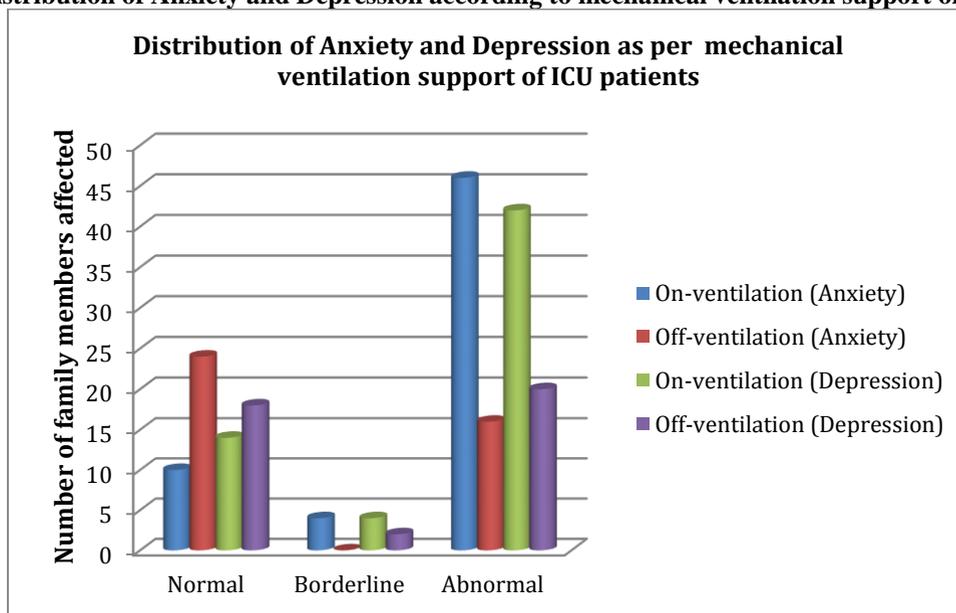


Table 7: Distribution of Anxiety and Depression according to mechanical ventilation of ICU patients

	On-ventilation (Anxiety)	Not on ventilation (Anxiety)	On-ventilation (Depression)	Not on ventilation (Depression)
Normal	10	24	14	18
Borderline	4	0	4	2
Abnormal	46	16	42	20

Figure 6: Distribution of Anxiety and Depression according to mechanical ventilation support of ICU patients



**RESULTS**

From observations of the present study anxiety and depression were noticed among the attendants of patients in ICU. We tried to correlate demographic profile and other vulnerable aspects of

patients and their attendants and extract the factors contributory to disturbed mental states.

100 questionnaires were analyzed using descriptive statistics. The average age for abnormal levels of anxiety and depression was observed to be 40 and 48 years respectively. Attendants of male

patients showed abnormal (67.7%) levels of anxiety compared to attendants of female patients (32.3%). In depression scale also similar trend was observed. (64.5% vs 35.5%)

Abnormal anxiety and depression of (58%) each was observed among attendants who were dependent on patients admitted in the ICU. Division of the patients into three income groups was done to assess the impact of financial status of the family on the psyche of the attendants. It was found that below poverty line (BPL) and upper middle class (UMC) were less anxious compared to the lower middle income group (LMC) which comprised 71% of the anxious attendants. Similar trend was seen in the depressed group (BPL 22.6%, LMC 71%, UMC 6.4%). Abnormal anxiety was observed (61.3%) among attendants of the unconscious patients compared to (38.7%) in the attendants of conscious patients. Similar pattern was observed in depression also (58.0%) vs (42.0%) in the attendants of unconscious and conscious patients respectively.

The attendants showed abnormal anxiety (74.2%) and abnormal depression (67.7%) when the patients were on ventilator as compared to the attendants of patients not on ventilator (anxiety 25.8%) and (depression 32.3%) respectively.

## DISCUSSION

Literature has evidence of high levels of anxiety, depression and post traumatic stress disorder (PTSD) among the attendants of the patients admitted to ICU. The evolving concept of family centered care among critical care patients aims at decreasing the incidence of these symptoms. It imparts patient care based on the requirements of patient's family which include the need for information, reassurance and support along with the desire to remain with the patient<sup>10</sup>. Studies done in American hospitals reveal 10-42% anxiety symptoms and 16-35% depressive symptoms among the relatives<sup>11-12</sup>. Very few studies are available regarding the same in Indian scenario<sup>13-14</sup>.

In a comparative study between an American and an Indian public hospital, Kulkarni HS et al<sup>15</sup> has shown that relatives of patients in the Indian ICU suffer from a greater degree of anxiety and depression compared to those in American cohort. This in our perspective could be explained by the fact that our patient load is more, resources are less and communication skills are not as good as the American counterparts and these aspects require more attention from our side. The study pointed out various factors to be associated with the prevalence of the abnormal behavior in the attendants. These included patient related factors, relative related demographics and educational status, perception of prognosis and desire for psychological and financial assistance.

In our study, we observed that the attendants of patients who were in the middle age group had abnormal levels of anxiety and depression as shown in table 2 and figure 1. This could be due to liabilities in this age. In another study McAdam JL et al<sup>16</sup> concluded that more than 50% family members had moderate to severe levels of traumatic stress, 80% had borderline anxiety while 70% had borderline depression. The patient factor significantly associated with symptom severity was younger age group. This observation is in contrast with our study wherein attendants of middle aged patients showed abnormal anxiety and depression.

Sex of the patient was found to strongly affect the anxiety and depression of the relatives. Relatives were more anxious if the patient was male as shown in table 3 and figure 2. This may be explained by the fact that the majority of the bread winners in India are males and gender bias is very deep rooted in our culture. This study is in contrast with the previous Indian study done by Pillai<sup>14</sup>, where no correlation was reported between patient gender and anxiety. Regional differences in the social and ethnic values are probably responsible for such differences.

Relatives of conscious patients tend to be less anxious as compared to those whose patients are unconscious as shown in table 6 and figure 5 this may be in correlation with the clinical condition of the patient. Number of dependants on the patient admitted showed a predicted result. If there were dependents on the patient, anxiety and depression were abnormal as shown in table 4 and figure 3. Our hospital being a government hospital provides free medical services to the patients. Still in poor socio-economic strata the burden of patient and attendant being continuously present in the hospital, which may be detrimental to the existing economy of the family and may shatter the resources unbearably, leading to higher prevalence of anxiety and depression.

In our study contrary to the expectation the upper middle income and the BPL group were minimally anxious when compared to the lower middle income group as depicted in table 5 and figure 4. This probably is due to the harsh fact that economically less privileged people have a higher acceptance for calamities in life. They reconcile better to mortality and morbidity as meeting both ends of life remains their priority. Similarly the upper class exhibits a more detached behaviour probably due to materialistic issues being more important. These facts have not been validated in earlier Indian studies.

Anxiety reaches its peak when there is uncertainty shown by the doctors, regarding the course of patient in ICU or exact situation is neither communicated nor understood by the patients' relatives. Kentish Barnes N, Lemiale V<sup>17</sup> performed a

similar study among relatives of ICU patients and concluded that burden on families of critical care patients required a routine assessment and effective communication by doctors which would be valuable in decreasing anxiety levels. A study by Anderson WG and Arnold RM<sup>18</sup> has emphasized that anxiety could be a precursor of post traumatic stress disorder and it was necessary to assess family members regularly for these disturbed mental states.

## CONCLUSION

Majority of the family members visiting patients in ICU suffer from symptoms of anxiety or depression. The major factors contributing to this include female dependents, inappropriate information given by ICU doctors and poor financial status of the family. The spouse of the admitted patient was also more likely to ail from symptoms of anxiety or depression owing to the increased emotional quotient involved than with other family members. The financial and social status of the patient was also one major causative factor especially in lower and middle income group families. Patients as well as attendants should be provided with some sort of social security or insurance to overcome this major stressor. Recognition of abnormal signs of anxiety and depression in a timely manner, adequate counselling or professional help by designated professionals should be provided at the earliest possible to such individuals, which may help in reducing long term consequences like PTSD.

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## ANNEXURE

### HADS Performa

Information sheet and question on kin's of patients in ICU

Name of Patient \_\_\_\_\_

Age \_\_\_\_\_ Sex \_\_\_\_\_ Married/unmarried \_\_\_\_\_

Parents alive/dead-mother \_\_\_\_\_ father \_\_\_\_\_

No of children \_\_\_\_\_

No of siblings \_\_\_\_\_

Living with whom? Parents/sibling/wife/alone/children/others \_\_\_\_\_

Profession \_\_\_\_\_

No. of dependents \_\_\_\_\_

Socioeconomic status-BPL/middle class/ upper middle class/ affluent \_\_\_\_\_

Home distance from Hospital \_\_\_\_\_

Medical condition \_\_\_\_\_

Primary admitting speciality \_\_\_\_\_

Patient on ventilator/ionotrope/unconscious/conscious \_\_\_\_\_

Current status as told by hospital \_\_\_\_\_

No of days in hospital \_\_\_\_\_

No of attendants/family members with the patient at a time \_\_\_\_\_

Attendants/ family member's perception of the patient condition-improving/would improve/ serious/survival unlikely/ can't say \_\_\_\_\_

Economic burden to the family-bearable/somehow managing/unbearable \_\_\_\_\_

Perception of attendant/family members regarding quality of care-excellent/good/fair/poor \_\_\_\_\_

What is the perceived greatest hardship to the attendants/ family members in getting patient treated in this ICU \_\_\_\_\_

Hospital anxiety and depression scale to be administered to attendants/ family members of the patient on admission to ICU and after 7 days.

**Hospital Anxiety and Depression Scale (HADS)**

Attendants are asked to choose one response from the four given for each interview. They should give an immediate response and be dissuaded from thinking too long about their answers. The question relating to anxiety are marked "A", and to depression "D". The

score for each answer is given in the right column. Instruct the patient to answer how it currently describes their feelings.

A	I feel tense or 'wound up':	
	Most of the time	3
	A lot of the time	2
	From time to time, occasionally	1
	Not at all	0

D	I still enjoy the things I used to enjoy:	
	Definitely as much	0
	Not quite so much	1
	Only a little	2
	Hardly at all	3

A	I get a sort of frightened feeling as if something awful is about to happen:	
	Very definitely and quite badly	3
	Yes, but not too badly	2
	A little, but it doesn't worry me	1
	Not at all	0

D	I can laugh and see the funny side of things:	
	As much as I always could	0
	Not quite so much now	1
	Definitely not so much	2
	Not at all	3

A	Worrying thoughts go through my mind:	
	A great deal of the time	3
	A lot of the time	2
	From time to time, but not too often	1
	Only occasionally	0

D	I feel cheerful:	
	Not at all	3
	Not often	2
	Sometimes	1
	Most of the time	0

A	I can sit at ease and feel relaxed:	
	Definitely	0
	Usually	1
	Not often	2
	Not at all	3

D	I feel as if I am slowed down:	
	Nearly all the time	3
	Very often	2
	Sometimes	1
	Not at all	0

A	I get a sort of frightened feeling like 'butterflies' in the stomach:	
	Not at all	0
	Occasionally	1
	Quite often	2
	Very often	3

D	I have lost interest in my appearance:	
	Definitely	3
	I don't take as much care as I should	2
	I may not take quite as much care	1
	I take just as much care as ever	0

A	I feel restless as I have to be on the move:	
	Very much indeed	3
	Quite a lot	2
	Not very much	1
	Not at all	0

D	I look forward with enjoyment to things:	
	As much as I ever did	0
	Rather less than I used to	1
	Definitely less than I used to	2
	Hardly at all	3

A	I get sudden feelings of panic:	
	Very often indeed	3
	Quite often	2
	Not very often	1
	Not at all	0

D	I can enjoy a good book or radio or TV program:	
	Often	0
	Sometimes	1
	Not often	2
	Very seldom	3

Scoring (add the As=anxiety Add the Ds=depression). The norms below will give you an idea of the level of Anxiety and Depression.	
0-7=Normal	
8-10=Borderline abnormal	
11-21=Abnormal	