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Surgery

ASSESSMENT OF PSYCHOLOGICAL STATUS OF POST-OPERATIVE GENERAL SURGERY PATIENTS

Rajesh Kumar	Associate Professor, Department of Surgery, M.M. Medical College & Hospital, Kumarhatti, Solan(HP) India.
Srikrishna Prasad Panda*	Consultant, Department Of Psychiatry, Military Hospital, Jaipur. *Corresponding Author
Kiran Kumar Singal	Professor, Department of Medicine, M.M. Medical College & Hospital, Kumarhatti, Solan(HP) India.

ABSTRACT **Objective:** Psychological assessment of 130 patients who had undergone surgery at a tertiary hospital in Northern India was carried out to determine the level of post-operative anxiety or depression. **Methods:** Psychometric assessment was done with clinical interview and psychiatric tool HADS. Scope of the study was widened to find out the reasons for the patients' psychological status. **Results and Discussion:** Results were analyzed for Anxiety and Depression levels amongst the patients. Twenty one percent patients had abnormal scores in borderline or definite range by HADS criteria. Of these patients 13% had abnormal scores in Anxiety subscale, while 7.7% had these scores in Depression subscale. **Conclusion:** The study showed that 21% post-operative patients had psychiatric morbidity. The reasons for this psychological status could be traced to their apprehensions about surgical outcome and ancillary issues surrounding operative intervention.

KEYWORDS : Anxiety, Depression, Hospital Anxiety and Depression Scale (HADS)

INTRODUCTION:

Mood disorders are prevalent in hospitalized patients. Surgical patients are no different. Patients who are scheduled to undergo surgery are usually plagued by a lower sense of well-being, not only physically but also mentally, as compared to the general population. This is even more true in patients undergoing extensive resections or amputations[1,2,3]

Operative intervention is a big event in anyone's life. It is a psychosocial challenge for the patient. It is such time when besides his physical symptoms, many social factors come into play and influence his psychological status in adverse manner. It is, therefore, an extremely stressful event for the patient.

When operation is over, stress is supposed to end, but this does not actually happen. It may, in fact, leave the patient even more distressed. Patient may experience anxiety or depression in the post-operative period, which may remain unrecognized and untreated. Factors which contribute towards postoperative distress vary from physical pain to dependence on others during this phase of hospitalization. Treating surgeon should know the post-operative psychological status so that he can predict his patient's further clinical course and characteristic of ultimate recovery.

Aim and Objectives:

1 To determine psychological status of the patients in the post-operative period
2 To ascertain the cause of patients' mental distress

Materials And Methods:

One hundred thirty patients were enrolled for the purpose of this study. This study was conducted prospectively during a 14-month period from February 2017 to March 2018 at a Tertiary Hospital in Northern India. In the study, only those patients who underwent operation for general surgical condition were enrolled. Each patient's consent was obtained for participating in the study. In the preoperative period demographic data and other data to define the surgical characteristics of the patients i.e. surgical diagnosis, presence of co- morbid conditions; were collected.

In the postoperative period, 2-3 days after surgery, patients were subjected to psychometric assessment. Towards this aim, patients were subjected to an interview in the form of a questionnaire to measure their mental distress using criteria given in HADS. Information was also sought about their concerns i.e. fear and worries; and their views about impact of this event on their lives. Questionnaire was administered by a single investigator to prevent misunderstanding of the questions by the patients and also to assist those who were unable to manually fill in the answers. Each patient was assessed only after he was found to have stable hemodynamic status. Analgesia was given to relieve pain which could otherwise independently influence his mental outlook towards the operative procedure and his then existing condition. Assessment was carried out in a calm environment to eliminate the effect of external influence. Language of the questionnaire was Hindi/English.

The HADS is a 14-item self-administered questionnaire designed by Zigmond and Snaith (1983)[4]Questionnaire is composed of 2 subscales of 7 questions each, one to assess anxiety and the other to estimate depression; (related mainly to anhedonia, which is the reduced capability or possibly the complete inability to enjoy the things or experience pleasure, particularly concerning the activities that an individual previously enjoyed. Activities may include exercise, hobbies, sexual activities or social interactions)[4,5,6].

Each item has four responses with assigned values ranging from 0 to 3, in either ascending or descending order. The responses to all the questions pertaining to each mood were then summated (results ranged from 0 to 21 for each mood). The results were then categorized based on established groups: normal (scores from 0to7), borderline abnormal (scores from 8 to 10) and definite abnormal (scores from 11 to 21).This questionnaire has been validated in various populations as a simple tool for assessment of mood [7,8,9,10,11]

Inclusion Criteria: Patients who had undergone surgery for general surgical condition and were in the age range 18 to 60 years were included.

Exclusion Criteria:

Age below 18 years.

Age above 60 years.

Patients with poor comprehension skills.

Patients with a pre-existing psychiatric illness diagnosed before or after admission to the hospital.

Patients with evident cognitive deficit or language disorders that could impede effective communication.

Those undergoing surgery for malignant condition.

Patients who had physical co-morbidity e.g. co-existent physical disability, chronic kidney disease, chronic liver disease, diabetes mellitus, cardiac illness and other chronic diseases, were excluded from the study, as these conditions could result in a pre-existing low mood independent of the surgical illness and thus confound our results.

Those who refused to participate in the study. Patient's consent was obtained in all the cases.

There was no specific follow up required for the purpose of our study other than that required for the primary surgical conditions.

Statistical Analysis:
Descriptive statistics like percentages were used to interpret the data. Statistical analysis was done with the help of Microsoft Office 2007

RESULTS:
Study population comprised 74 female and 56 male patients.They underwent operative procedure for general surgical condition. Type of procedure included both elective (103 cases i.e. 79%) and emergency surgery (27 cases i.e. 21%). Trauma patients were included in the study. This data about surgical conditions of our patients is given in table 1 & 2 and Figure 1 & 2.

Table1: Surgical Diagnosis/operative Procedure

DIAGNOSIS	MALE	FEMALE
Cholelithiasis	12	43
Hernia	9	4
Varicose Veins (Limbs)	5	1
Acute Appendicitis	3	5
Thyroid Disease	0	4
Benign Breast Lesion	0	8
Hydrocele /Torsion testis	6	0
Benign Anorectal lesions	5	2
Submandibular /Parotid Sialadenitis	2	1
Varicocele	2	0
Urolithiasis	2	1
Emergency Abdominal surgery	4	3
Abdominal Trauma	2	0
Limb Trauma (Non-Skeletal)	2	0
Abscess	2	2
Total	56	74

Figure 1: Surgical Diagnosis/ Operative procedure

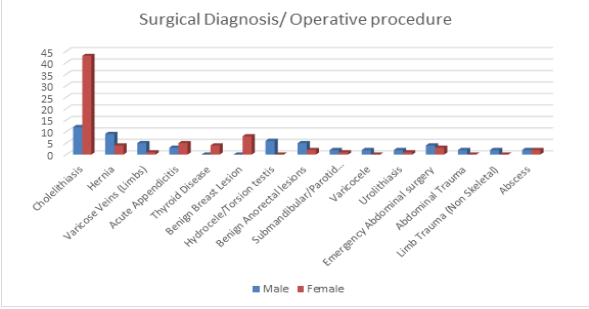

Table2: Emergency Surgery

	Abdominal Conditions other than Appendicitis	Acute Appendicitis	Abdominal trauma	Limb Trauma	Anorectal	Abscess	Torsion Testis	Total
Male	4	3	2	2	2	2	1	16
Female	3	5	0	0	1	2	0	11

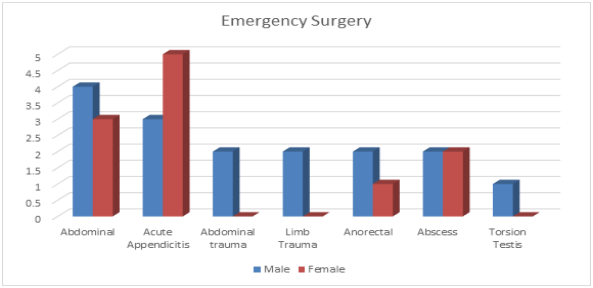

Figure 2: Emergency surgery

Tables 3 & 4 and figure 3 show prevalence of anxiety and depression by HADS criteria. Seventeen patients manifested features of anxiety while 10 patients had features of depression. Overall,17 female and 10 male patients had anxiety or depression based on HADS criteria. Prevalence was 13.07% on anxiety subscale construct while it was 7.7 % for depression. Prevalence of both anxiety and depression togetherwas in the definite range of abnormality in 12.32% cases vs 8.45% in borderline score range. These observations are with reference to all cases irrespective of type of surgery whether elective or emergency.

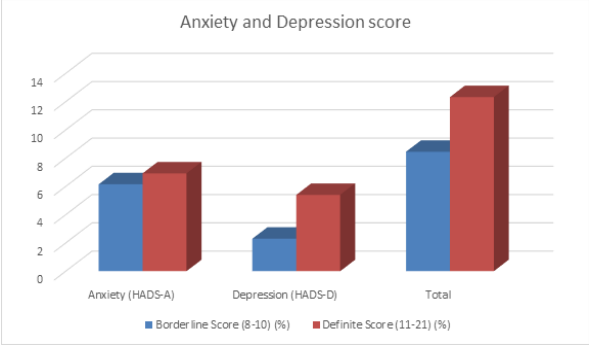

Figure 3: Anxiety and Depression score

Table3: Psychometric assessment (Number) All Cases

Subscale Construct	Borderline abnormal score (8-10) Total	Male	Female	Definite abnormal score (11-21) Total	Male	Female	Total
Anxiety (HADS-A)	8	2	6	9	4	5	17
Depression (HADS-D)	3	1	2	7	3	4	10
Total	11	3	8	16	7	9	27

Table4: Psychometric assessment (Percentage) All Cases

Subscale Construct	Borderline abnormal score (8-10) Total/%	Male	Female	Definite abnormal score (11-21) Total	Male	Female	Total
Anxiety (HADS-A)	6.15	3.57	8.10	6.92	7.14	6.75	13.07
Depression (HADS-D)	2.3	1.78	2.70	5.4	5.3	5.40	7.7
Total	8.45	5.35	10.8	12.32	12.44	12.15	20.77

Eleven patients in emergency surgery group had either anxiety or depression by HADS criteria. Of these, seven patients had abnormal scores in anxiety subscale while 4 had abnormal scores in depression subscale. Genderwise distribution being 6 males having psychiatric morbidity compared to 5 female patients. (Table 5 & 6 and figure 4) Similar data for elective surgery is given in Table 7 & 8.

Table 5: Anxiety and Depression Score in Emergency Surgery Cases (Number)

Subscale Construct	Borderline score (8-10) Total	Male No.	Female No.	Definite score (11-21) Total	Male No.	Female No.	Total
Anxiety (HADS-A)	3	2	1	4	2	2	7
Depression (HADS-D)	1	0	1	3	2	1	4
Total	4	2	2	7	4	3	11

Table 6: Anxiety and Depression Score in Emergency Surgery Cases (Percentage)

Subscale Construct	Borderline score (8-10) %	Male %	Female %	Definite score (11-21) %	Male No./%	Female /%	Total
Anxiety (HADS-A)	11.1	12.5	9.1	14.8	12.5	18.2	25.9
Depression (HADS-D)	3.70	0	9.1	11.1	12.5	9.1	14.8
Total	14.8	12.5	18.2	25.9	25.0	27.3	40.7

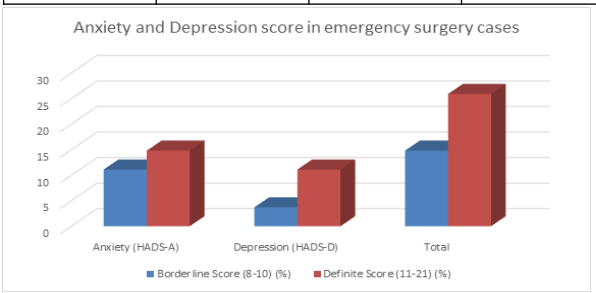

Figure 4: Anxiety and depression score in emergency cases

During further psychological enquiry, as part of study protocol, patients revealed their underlying fears and worries. These have been enumerated in Table 9. Though all the patients were asked about their concerns, these have been listed in the Table only for those who scored borderline or definitely abnormal under HADS criteria. Four patients had apprehensions about post discharge care at home. Three patients worried about disruption in family life for some time to come after the surgery. Two patients showed concern about surgery related complications. Two patients had their fears related to disablement for some period and possibly residual disability. Three patients had their fears about length of hospital stay. One patient had apprehension about need for reoperation. Two female patients worried about their surgical condition being labelled

Table 7: Anxiety and Depression Score in Elective Surgery Cases (Number)

Subscale Construct	Borderline score (8-10) Total	Male No.	Female No.	Definite score (11-21) Total	Male No.	Female No.	Total
Anxiety (HADS-A)	5	0	5	5	2	3	10
Depression (HADS-D)	2	1	1	4	1	3	6
Total	7	1	6	9	3	6	16

Table 8: Anxiety and Depression Score in Elective Surgery Cases (Percentage)

Subscale Construct	Borderline score (8-10) %	Male %	Female %	Definite score (11-21) %	Male No. %	Female %	Total
Anxiety (HADS-A)	4.85	0	7.93	4.85	5	4.76	9.70
Depression (HADS-D)	1.94	2.5	1.59	3.88	2.5	4.76	5.82
Total	6.79	2.5	9.52	8.73	7.5	9.52	15.52

as malignancy. Three female patients had their reservations about the type of cosmetic result delivered to them. One male patient who had orchidectomy for testicular torsion had his worries regarding outcome related to fertility.

Table 9: Underlying concerns

Factor	Number
Lack of responsible carer at home(Familial support)	4
Disruption in family life	3
Complications	2
Disablement	2
Prolonged hospitalisation	3
Fear of malignancy	2
Reoperation	1
Poor cosmetic result	3
Effect on fertility	1

DISCUSSION:

In the post-operative period patient may be psychologically distressed and this may not be due to physical symptoms alone. Physiological stress of surgery as well as psychosocial factors can lead to emotional instability. This distress manifests as low mood. Patients are more prone to depression or anxiety if surgery leaves them with some physical impairment. Patient's satisfaction level, which is an important end point in perioperative care, is influenced by his psychological status at this time in his surgical journey. Further, psychiatric morbidity is correlated with poorer clinical outcome, after the surgery. A patient who is anxious or depressed is less likely to participate in his post-operative recovery and rehabilitation. Studies have found that such patients have longer lengths of stay[12,13], higher incidence of adverse outcomes[14], and worse reported health-related quality of life after the surgery[15,16,17].Therefore, assessing patient's psychological status and addressing psychological needs is of utmost importance.

Present study was an observational one. Study group comprised 130 patients. Their age ranged from 18 to 60 years. The male and female ratio in the study was 1:1.32.One hundred and three patients

underwent operative procedure for elective surgical condition. Twenty-seven (21%) patients had an emergency surgery.

Psychometric assessment revealed that 11 patients (8.45%) had borderline abnormality, either Anxiety or Depression, by HADS criteria; while 16 (12.32%) patients had definitely abnormal score for these psychiatric morbidities. Overall prevalence of psychiatric morbidity being 20.77% irrespective of type of surgery whether elective or emergency. Prevalence of anxiety was 13.07%. Similar data for depression being 7.7%. Study brings out that mood abnormalities were more noticeable in surgical emergency cases i.e. of the 27 cases who underwent emergency surgery, 11 patients (40.74%) manifested features of Anxiety or Depression. Similar data for elective surgery was found to be 15.5%(16/103). Overall anxiety was more prevalent as compared to depression i.e. 25.9%vs 14.8%. Similar data for elective surgery was found to be 9.7% vs 5.82 (Table 10)

Table 10: Comparison of prevalence of Anxiety or depression between Emergency and Elective surgery (percentage)

	Total	Anxiety	Depression
Emergency	40.7	25.9	14.8
Elective	15.52	9.70	5.82
All cases	20.77	13.07	7.7

Based on percentages, there were no significant differences in prevalence between male and female patients for these entities under observation (17.85% vs 22.97%) (Table 11). However, psychiatric morbidity was found in 45.45% of female patients who underwent emergency surgery, while similar data for male patients was 37.5%. (Table12). More number of patients fell in definite abnormal range by score irrespective of psychiatric morbidity i.e. anxiety or depression. However, no significance can be attached to these differences in observation since the number is too small in terms of both sample size and absolute number. Difference, therefore, could be attributed to chance alone.

Table 11: Comparison of prevalence of Anxiety or depression between Male and Female patients (Number/Percentage)

	Male: No.(%)	Female: No. (%)
Anxiety	6 (10.71)	11 (14.86)
Depression	4 (7.14)	6 (8.11)
Total	10 (17.85)	17 (22.97)

Table 12: Prevalence of Anxiety or depression in Elective and Emergency surgery: Comparison between Male and Female patients (number/Percentage)

	Male: No (%)	Female: No (%)
Elective	4 (10)	12 (19.05)
Emergency	6 (37.5)	5 (45.45)
Total	10 (17.85)	17 (22.97)

Imran Thariq Ajmal et al[18] in their study found the prevalence of psychiatric morbidity in the post-operative period to be 27.5%,although their study population comprised patients who underwent abdominal surgery only. Brief psychiatric rating scale was used to assess the severity of the psychiatric illness in their study.

In Lubek general hospital study by Volker et al[19], the prevalence of psychiatric morbidity in post-operative patients was around 28%. Liberzonetal[20] found an incidence of postsurgical psychiatric comorbidity as high as 32% for patients after vascular operations

During further psychological enquiry, as part of study protocol, patients revealed their underlying fears and worries. These have been enumerated in Table 9. Though all the patients were asked about their concerns, these have been listed in the Table 9 only for those who scored borderline or definitely abnormal under HADS criteria. Four patients had apprehensions about post discharge care, as they had no responsible carer at home. Three patients worried about disruption in family life for some time to come after the surgery. These were female patients and their fears were not unfounded since the social milieu in that part of country where this study was carried out burdens women with this responsibility of running their homes. Two patients worried about complications, since they had undergone surgery for major abdominal trauma. Two patients who had undergone operation for limb trauma had their fears related to disablement for some period and possibly residual disability. Three patients had their fears grounded in long hospital stay because of type of their surgery for abdominal emergency. One of these patients had apprehension about reoperation which in his case was to be done for stoma closure. Two female patients who underwent breast surgery worried that their histopathology might not throw a histopathology surprise in the form of malignancy. Three female patients had their reservations about the type of cosmetic result delivered to them since their laparoscopic surgery eventually got converted to open surgery. One male patient who had orchiectomy for testicular torsion had his worries regarding fertility.

Addressing psychological needs of the patient , after surgery, starts in the preoperative period. There is a scope for practicing perioperative psychiatry. Surgeon has to be proactive and it should be part of his protocol to assess psychological status of patient preoperatively . It may be possible to predict patient's post-operative mental status from this. There may be certain psychosocial factors which may impact patient's experience from operative procedure. These factors may be modifiable before surgery. Also, there is a need for evaluation of patients in the postoperative period for psychiatric morbidity. Those who are found to be so afflicted should be watched more closely. Surgeon has to act as a counsellor and if deemed necessary , psychiatrist's help should be sought.

CONCLUSION:

Study showed that significant number of patients suffer emotional distress in the form of depression or anxiety in the post-operative period. Psychological status of the patient and his apprehensions in the immediate post-operative period influence quality of his recovery and eventual outcome. Patient's ultimate satisfaction is also governed by these factors. These issues pose formidable challenge for the surgeon. Times have changed. No longer can surgeon feign ignorance about these issues nor can he declare that it does not come under his purview to address them. It is high time that treating surgeon takes note of this fact and doubles up as counsellor for his patient with the basic aim of optimising surgical outcome.

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