ASSESSMENT OF COGNITIVE DEFICITS, EMOTIONAL DEREGULATION AND DEPRESSION IN PATIENTS OF GENERAL SURGERY: A PRE/POST STUDY

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ABSTRACT

Objectives: The present study focused on assessing cognitive deficits and emotional deregulation as predictors of depression in pre/post patients of general surgery.

Methodology: The study was conducted in public sector hospitals of Lahore. Sample comprised of 300 indoor patients (120 men & 180 women) admitted for general surgeries. The current study used within-subject research design as the patients were assessed before surgery and again the same patients were assessed after surgery. Age of the sample was from 30 to 65 years. Cognitive failure scale was used for cognitive deficits, emotional deregulation scale for assessing emotional disturbances and PHQ-9 (patient health questionnaire) was used for measuring depression in included patients.

Results: In pre-assessment, the mean scores of cognitive deficits, emotional deregulation and depressive symptoms were higher as compared to post-surgery assessments ($p<0.001$). Mean scores of women were higher than men ($p<0.001$). Middle aged patients (30-45 years) had higher mean scores on all study variables than older-aged (46-65 years) patients ($p<.001$). Results revealed that middle-aged patients, being women, monthly income, cognitive deficits and emotional deregulation emerged as significant predictors of depression in patients.

Conclusion: Women and middle aged patients suffer from more cognitive deficits, emotional deregulation and depressive symptoms. Assessment before surgery revealed more cognitive deficits, emotional deregulation and depressive symptoms in patients of general surgery as compared to the assessments done after surgery.

Key Words: Cognitive deficits, Emotional deregulation, General surgery

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INTRODUCTION

Literature has established that patients of general surgery frequently pass through many psychological problems especially affecting their cognitive abilities[1]. Neuro-psychological assessment has shown that these patients face difficulties in memory functioning, attention, processing speed and executive functioning[2]. The speed of recovery of neuro-psychological functioning is different; ranging from 12 weeks to 3 years after surgery. Many studies show that neuro-psychological damages existed before surgery can be reduced after surgery, although they are not finished completely[3,4].

Surgery may have certain effects on the relational and emotional life of the patients which can make their social relationships problematic. There is also consensus that surgery influences the behavior and personality of individual and may lead to reduction in recognizing the emotions of other people[5]. Therefore, cognitive deficits and difficulty in reasoning their own or other peoples' behaviors and emotions might lead to analogous results.

Depression is the condition of a person when he/she feels worthless, low mood and low in activity. Depression and anxiety turn out to to predictors of cognitive vulnerability in patients admitted for surgery. The hospitalization factor also contributes to the problems of emotional disturbances in the in-patients.[6]

There are many public health consequences of cognitive deficits and depression. The WHO global burden of disease study rated depression as the most trouble-

some disease as it affects mostly the adult population in the world[7]. Cognitive deficits turn out to be the major outcome of depression[8]. Cognitive deficits include trouble in decision making, poor co-ordination, processing speed, executive dysfunction and problems in working memory and attention[9].

Patients with severe medical conditions have to change their ambitions, behaviors and job. Some of them remain in the existing predicament and cannot adjust with the disease. Still many others develop severe cognitive deficits, emotional deregulations and depression.

The research evidence supports the prevalence of cognitive deficits and depressive symptoms in inpatients and outpatients with severe medical diseases like cancer, abdominal pains and surgery of gall blader[10]. It is found that 15% of patients develop mental health problems in case of general surgery patients[11]. Many others have reported the existence of emotional distress in patients of general surgery and who are hospitalized and majority of the patients suffer from psychiatric symptomatology during their stay in hospital[12].

Physical conditions of patients are well-addressed but psychological aspects of a disease are neglected area worldwide[13]. The emotional turmoil and cognitive dysfunction always remained a neglected area and very less number of studies has been reported. To study the psychological aspects of surgery is less common among researchers. Therefore the present study was conducted to compare the effects of pre-surgery with the post-surgery regarding cognitive deficits, emotional disturbances and depression in men and women. We assumed that (i) pre-surgery assessment scores will be higher as compared to post-assessment scores on cognitive deficits, emotional deregulation and depression in patients of general surgery, (ii) there will be gender differences and age-wise differences on cognitive deficits, emotional deregulation and depression and (iii) cognitive deficits and emotional deregulation will likely to be the predictors of depression in patients of general surgery.

METHODOLOGY

The sample was collected by using purposive sampling technique and patients admitted in hospital for abdominal surgery were recruited from public sector hospitals of Lahore. Sample comprised of 300 indoor patients (120 men & 180 women) admitted for general surgery. Age range of the sample was from 30 years to 65 years. The study was conducted from January 31st, 2015 to December 15, 2015.

A demographic information form was structured regarding the age, type of disease for which surgery was recommended, period of illness in months, marital status, nature of their job, number of children and dependents and monthly income of the research participants.

Cognitive failure scale is a 30-items self-reported inventory with reliability coefficient in English=.87, and in Urdu=.88. It was used to measure the cognitive disturbances/deficits of this clinical sample. Each statement of the scale is rated on three response options i.e., never, sometimes and most of the time. Min-Max scores are 30 to 90. Minimum scores obtained on the scale indicate less cognitive disturbance and maximum scores indicate more cognitive disturbance[14,15].

Emotional dysregulation scale (DERS) was originally developed by Gratz and Roemer[16]. It measures difficulties in emotional regulation. The scale has 40 items and measures response options on five points. Likert scale ranges from almost never (1) to almost always (5). Reliability coefficient of the scale is .77 as reported by the author. Minimum scores on the scale is 100 which shows less emotional disturbance and maximum score is 200 which indicates more emotional disturbances of the research participants.

Patient health questionnaire-9 (PHQ-9) is a 9-items self-report scale which measures depression. The response options range from not at all (0) to nearly every day (3). Minimum and maximum scores are 1 and 27 respectively[17].

The researchers obtained permission from the human resource departments of 5 public sector hospitals. The data of the patients was obtained from the hospital roll of the surgical wards. The patients admitted for surgery were approached and told about the purpose of the study. Initially informed consent was obtained from the research participants and afterwards all scales were presented to them to be filled out. The researchers helped the patients in reading the scales (in-depth explanations of all items). In this way all scales were completed and research participants were thanked for their participation and co-operation. The hypotheses were analyzed by using paired samples t-tests to see differences in mean scores, correlations to explore relationships and multiple regression analysis to find out predictors of depression in pre and post study in patients of general surgery.

RESULTS

Results revealed that mean scores of the patients on cognitive deficits, emotional deregulation and depression before-surgery were significantly higher than the mean scores after surgery ($p<0.001$) as shown in table 1. Mean scores of women were significantly higher than men on cognitive deficits, emotional deregulation and depression($p<0.001$). Middle aged patients (30-45 years) had higher mean scores on all study variables than older-aged (46-65 years) patients ($p <.001$).

Table 2 shows that depression is significantly positively correlated with cognitive deficits (r =.55, p <.001) and emotional deregulation (r =.69, p <.001) in patients of general surgery. On multiple regression analysis, middle-aged patients (30-45 years) (accounting 20% of variance), being women (accounting for 9% of variance) and monthly income (3% of variance) emerged as significant predictors of depression accounting for 19% of the variance in total. (Table 3)

DISCUSSION

The result of the first hypothesis showed that there was a significant difference on cognitive deficits, emotional deregulation and depression between pre and post testing in patients of general surgery. The findings of the present study are consistent with the findings of previously conducted research work which has concluded that cognitive deficits, emotional disturbances

Table 1: Pre/post general surgery, gender-wise and age-wise mean differences of patients regarding cognitive deficits, emotional deregulation and depression (n= 300)

Variables		Cognitive Deficits	Emotional Deregulation	Depression	P Value
Surgical Status	Pre-Surgery	70.23 ± 11.32	122.43 ± 12.22	22.67 ± 2.98	.001
	Post-Surgery	61.12 ±12.23	78.44 ± 7.32	16.85 ±1.55	
Gender	Men	65.67 ± 8.45	85.32 ± 7.32	13.43±3.21	.001
	Women	72.30 ±6.73	115.03 ±8.98	21.54±2.43	
Age	Middle-age (30-45 years)	57.32 ±3.03	126.21 ±6.29	15.24±1.87	.001
	Later-adulthood (46-65 years)	75.21 ±5.11	79.22 ±5.10	23.22 ±1.21	

Table 2: Correlation between cognitive deficits, emotional deregulation and depression in patients of general surgery

Variables	1	2	3	Mean	SD	Alpha (α)
Depression	-	.55***	.69***	15.20	4.75	.82
Cognitive deficits		-	.42***	75.97	11.36	.80
Emotional Deregulation		-	-	123.35	12.85	.81

Table 3: Multiple regression analyses to predict cognitive deficits and emotional deregulation as predictors of depression

Predictors	B	ΔR2
Constant	.38***	.14***
Age (middle-aged patient)	.45***	.20***
Gender (being women)	.29***	.09***
Emotional Deregulation	.35***	.13***
Cognitive Deficits	.21***	.04***
Monthly family income	.18***	.03***
R2	.27***	.19***

Note: R2 = .27, β = Beta coefficients, ΔR2 = Adjusted R square

and depression is more frequently prevailed in patients before any surgery[18]. The reason might be that the patients think that they are more vulnerable to death at this stage as surgery is considered a major cause of death[19]. Good physical health boosts the psychological health of a person.

The data of the existing research was taken from public sector hospitals where patients are in masses. When these patients see other patients dying due to surgery or infection after surgery they become depressed. These patients are hopeless regarding their upcoming surgery which also affects their cognitive health. Cognition stops working during the state of utter distress. These patients may fear deformation, feeling of pain after surgery or even death. The research has established a significant relationship between emotional disturbances and depression. They have been passing through this disease for the last few months which may have negative impact upon their cognition and in the creation of depression. The findings also indicated that cognitive deficit, emotional deregulation and depression were reduced in post-surgery assessment. The finding are in line with the studies which report improvement in cognition, emotional disturbances and depression after surgery. This might be explained in the light of self-efficacy theory of Bandura[20]. These patients feel self-efficacy and confidence to survive in future which reduced their cognitive deficits, emotional deregulations and depression. Their worries and fears attached with surgery finishes with the successful surgery.

The next main finding of the current study was that women suffer more cognitive failures, emotional deregulation and depression as compared to men. There is research consensus that women suffer more psychological health problems as compared to men[19]. The severity of cognitive symptoms appears more common in female patients with major surgery. The age, cognitive deficits, being women and less monthly income appeared as main predictors of depression in patients of general surgery. Young age people think that they survive more than the older people. When they suffer from some health problem and are recommended for surgery they become panic[21]. This state of mind reduces their cognitive health and enhances their emotional deregulation and depression. Similarly less monthly income is a significant predictor of depression in patients of general surgery. Less monthly income is an established risk factor for depression.

Lastly, the pre-surgery time is a state of emotional turmoil and lack of use of cognition which ultimately leads to depression in patients. After surgery their cognitive symptoms, emotional disturbances and depression become reduced.

LIMITATIONS

The sample was obtained from only one major city which must have reduced its external validity.

CONCLUSION

Women and middle aged patients suffer from more cognitive deficits, emotional deregulation and depressive symptoms. Similarly pre testing assessment revealed more cognitive deficits, emotional deregulation and depressive symptoms in patients of general surgery.

IMPLICATIONS

The investigation regarding the role of fear for surgery is the main finding of the current research. The patients admitted for general surgery should be given counseling session to reduce their fear and insecurity of life and maximize their knowledge regarding successful surgery after their admission.

REFERENCES

1. van der Vossen S, Schepers VP, Berkelbach van der Sprenkel JW, Visser-Meily JM, Post MW. Cognitive and emotional problems in patients after cerebral meningioma surgery. J Rehabil Med 2014; 46:430–7.
2. Tucha o, Smely C, Lange KW. Effects of surgery on cognitive functioning of elderly patients with intracranial meningioma. Br J Neurosurg 2001; 15:184–8.
3. Tucha O, Smely C, Preier M, Becker G, Paul GM, Lange KW. Preoperative and postoperative cognitive functioning in patients with frontal meningiomas. J Neurosurg 2003; 98:21–31.
4. Krupp W, Klein C, Koschny R, Holland H, Seifert V, Meixensberger J. Assessment of neuropsychological parameters and quality of life to evaluate outcome in patients with surgically treated supratentorialmeningiomas. Neurosurgery 2009; 64: 40–7.
5. Campanella F, Fabbro F, Ius T, Shallice T, Skrap M. Acute effects of surgery on emotion and personality of brain tumor patients: surgery impact, histological aspects, and recovery. Neuro Oncol 2015; 1121-31.
6. Maguire GP, Jolier DL, Nawton KE, Bancroft JH. Psychiatric morbidity and referral on two general medical wards. Br Med J 1974; 1:268-70.
7. Murray CJ, Lopez AD. Evidence-based health policy-lessons from the Global Burden of Disease Study. Science 1996; 274:740-3.
8. Martinez-Aran A, Vieta E, Reinares M, Colom F, Torrent C, Sanchez-Moreno J et al. Cognitive function across manic or hypomanic, depressed, and euthymic states in bipolar disorder. Am J psychiatry 2004; 161:262-70.

9. Elderkin-Thompson V, Moody T, Knowlton B, Hellemann G, Kumar A. Explicit and Implicit Memory in Late-Life Depression. Am J Geriatr Psychiatry 2011; 19:249-55.

10. vonAmmon Cavanauch S, Wettstein RM. Emotional and cognitive dysfunction associated with mental disorders. J Psychosom Res 1989; 33:505-14.

11. Regier DA, Goldrerg ID, Taube CA. The De Facto US mental health service system. Arch Gen Psychiatry 1978; 35:685-93.

12. Cavanaugh S, Wettstein RM. Prevalence of psychiatric morbidity in medical populations. In: Psychiatric update, American Psychiatric Association Annual Review. Am Psychatr Press Washington, DC 1984; III:187-215.

13. Maguire GP, Julier DL, Hawton KE, Bancroft JH. Psychiatric morbidity and referral on two general medical wards. Br Med J 1974; 1:268-70.

14. Broadbent DE, Cooper PF, FitzGerald P, Parkes, KR. The Cognitive Failures Questionnaire (CFQ) and its correlates. Br J Clin Psychol 1982; 21:1-16.

15. Habib A, Naz F. Cognitive failure, teacher's rejection and interpersonal relationship anxiety in children with dyslexia. Pak J Med Sci 2015; 31:662-6.

16. Gratz KL. Roemer L. Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. J Psychopath Behav Assess 2004; 26:41-54.

17. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: Validity of a brief depression severity measure. J Gen Intern Med 2001; 16:606-61.

18. Riso LP, du Toit PL, Blandino JA, Penna S, Darcy S, Duin JS et al. Cognitive aspects of chronic depression. J Abnorm Psychol 2003; 112:72–80.

19. Rosenberg PB, Mielke MM, Xue QL, Carison MC. Depressive symptoms predict incident cognitive impairment in cognitive healthy older women. Am J Geriatr Psychiatry 2010; 18:204-11.

20. Bandura A. Self-efficacy. In: Ramachaudran VS. (Ed.), Encyclopedia of human behavior New York: Academic Press 1994; 4:71-81.

21. Nakano Y, Baba H, Maeshima H, Kitajima A, Sakai Y, Baba K et al. Executive dysfunction in medicated, remitted state of major depression. J Affect Disord 2008; 111: 46-51.

CONTRIBUTORS

FN conceived the idea, planned the study, performed statistical analysis and drafted the manuscript. MM edited analysis and critically revised the manuscript. All authors contributed significantly to the submitted manuscript.